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# ANALYSIS OF SURFACE AIR TAX ACQUISITION IN TAX AND RETRIBUTION AGENCY IN NORTH SUMATERA PROVINCE

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## ABSTRACT

*The aim of this study is to analyze the effectiveness and contribution of surface water tax in the province of North Sumatra. The study was conducted in the North Sumatra Province Tax and Retribution Management Agency (BP2RD) on the Surface Water Tax Acquisition Analysis at the North Sumatra Province Tax and Retribution Management Agency (BP2RD). The method used to analyze this research is descriptive. The findings show that the level of the surface water tax for the period 2014-2018 received an average of 116.29 in the highly effective criteria. Tax receipts by the North Sumatra Provincial Tax and Retribution Management Agency show that the acquisition during the 2014-2018 period were still ineffective in 2018 of 7.64%. The average contribution of 3.59 for the realization of the surface water tax to the realization of the Local Original Revenue (PAD) during the 2014-2018 period is included in the very low criteria.*

**KEYWORDS:** *Target and Realization, Effectiveness, Surface Water Tax*

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## 1. INTRODUCTION

Taxes are the primary source of national and regional revenue since the formation of regional autonomy, and the regions do have their own duty to administer their taxes. Regulation of the Republic of Indonesia Number 23 of 2014 concerning the Regional Government Article 285 specifies that the sources of national revenue consist of:

1. Local Original Revenue (PAD) includes: local taxes; user fees; results of the management of separated regional assets; and other legitimate regional original Revenue;
2. Transfer revenue; and
3. Other legal regional revenue

The welfare of the community will depend a lot on the regional government since the enactment of

regional autonomy, so that the regional government must explore as much as possible the sources of Local Original Revenue (PAD), because PAD is one indicator in measuring the success of the implementation of regional autonomy. The higher the PAD, the higher the local government's ability to finance their spending.

Local tax is an important source of Local Original Revenue (PAD) to finance the spending of local government. In accordance with Law Number 28 of 2009 concerning Regional Taxes and Regional Taxes, which states: "That regional taxes and user fees are an important source of regional revenue to finance the spending of regional government."

Among local taxes, the Surface Water Tax is a new revenue potential for the North Sumatra Province Regional Revenue. In accordance with Law No. 28 of 2009 on Regional Taxes and Regional Taxes, the definition of surface water is all surface



water, not including sea water, both at sea and on land. Whereas the surface water tax is a tax on the extraction and / or utilization of surface water. So, simply the surface water tax can be interpreted as a tax that is imposed for the utilization of river, lake, reservoir, and so on. The surface water tax is

expected to bring potential revenue to the country or region. The development of targets and realization of surface water tax in North Sumatra Province can be seen in the following table:

**Tabel 1**  
**Target and Realization of Surface Water Tax of North Sumatra Province in 2013 - 2018**

Year	Target	Realization	%
2014	60.000.000.000	68.003.380.832	113,34
2015	167.211.362.801	401.710.515.619	240,24
2016	208.000.000.000	253.866.206.023	122,05
2017	84.908.242.000	83.320.133.885	98,18
2018	577.000.000.000	44.064.099.420	7,64

Source: Processed Data (2018)

Table 1 indicates that there have been fluctuations in the water surface tax target and realization of the North Sumatra Province during the period 2014-2018. The insignificant increase in surface water taxes is attributed to the region's failure to establish a collection plan and to monitor potential surface water taxes. The technique used to measure the potential is also often unrealistic, based solely on raising taxes on surface water, without considering other aspects that influence the decision. Given the large role of local taxes as one of the key primary sources of regional financial revenue in the PAD component, it is important to review "Analysis Of Surface Air Tax Acquisition in Tax And Retribution Agency in North Sumatera Province".

### Objective of the study

The aim of this study is to analyze the effectiveness and contribution of surface water tax in the province of North Sumatra.

## 2. RESEARCH METHODOLOGY

The design of the study was carried out using descriptive methods that expose problem solving by presenting, analyzing and interpreting data. This research analyzes the realization of surface

water tax revenue in the North Sumatra Province by comparing it with the target water tax revenue for the North Sumatra Province.

The location of the study was conducted at the Regional Management Agency for Tax and Retribution of North Sumatra Province as the policy maker for the target of surface water tax revenues.

This type of data is secondary data in the form of a report on surface water tax revenue in the North Sumatra Province for a period of six years from 2014 to 2018 issued by the North Sumatra Province Regional Tax and Retribution Management Agency. Other data sources include articles, scientific journals, books, newspapers, magazines and websites. Secondary data collection methods for this activity were collected through a literature review of literature books and other official documents issued by the Government of the North Sumatra Province. This documentation study was conducted in order to obtain secondary data from the variables studied derived from the Regional Tax and Retribution Management Agency and the Central Statistics Agency of North Sumatra Province.

According to Halim (2004) the effectiveness value of local tax object is determined using the following formula:

$$\text{Effectiveness} = \frac{\text{Surface Water Tax Realization}}{\text{Surface Water Tax Target}} \times 100\%$$

To calculate effectiveness, compare between realization and target. According to Kesek (2013), the guideline for evaluating the financial performance of the Ministry of Home Affairs is based on the Decree of the Minister of Home Affairs No. 690,900-327, 1996 which categorizes the financial

effectiveness capabilities of autonomous regions into five effectiveness levels as shown in the table below to measure the level of effectiveness then it is used indicators as follows:



**Table 2**  
**Interpretation of the Effectiveness Value of Realized Surface Water Tax on Surface Water Tax Targets**

Percentage (%)	Criteria
> 100%	Highly effective
90-100%	Effective
80-90%	Fairly effective
60-80%	Less effective
< 60%	Not effective

Source: Decree of the Minister of Home Affairs No. 690,900-327, 1996 (Kesek, 2013)

Interpretation of the value of surface water tax effectiveness if the calculation produces a number/percentage approaching 100% and above, the criteria are highly effective, and 90-100% effective, 80-90% moderately effective, 60-80% less effective, and below 60% not effective. The higher the ratio of effectiveness in research, the more effective.

### 3. LITERATURE REVIEW

#### Tax Definition

Tax under Soemitro in Mardiasmo (2016) is a public contribution to the state treasury based on the statute (which may be forced) by not providing lead services (counterparts) which can be seen directly and which are used to fund public spending. M.J.H Smeets in Agoes (2014) argues that tax is a government achievement that is owed by general norms and can be forced to do so without any counterparts that can be demonstrated individually; the intention is to finance government spending. Hoppe (2006) argues that tax is a transfer of part of the national product from the hands of individuals to the people of the government, which is required to meet public consumption or spendings. And taxes are people's contributions to the state based on the legislation by not offering similar reciprocity benefits that can be illustrated and used to fund public spending..

#### Local tax

Rahardjo (2011) argues that local taxes are a duty in the population to give part of the wealth to the region as a result of a circumstance, event or act that gives rise to a certain role, but not as a sanction or a law. In line with the explanation given above, Law No. 28 of 2009 on Regional Taxes and Regional Levies refers to the definition of regional taxes as complying to regions owed by individuals or entities that are legally binding, without direct compensation and used for the needs of the Region for the benefit of the people of maximum prosperity.

#### General Surface Water Tax

Accordance with the provisions to Law No. 28 of 2007, taxes must be charged to persons owed by individuals or organizations authorized under the law by not collecting a surplus directly and by being used for the State for a sum funded by the welfare of the

State. According to North Sumatra Governor Regulation No. 1 of 2011, the Surface Water Tax (PAP) is a tax on the production and/or use of surface water. Surface water is all the water that is on the surface of the earth, not including the air in the sea, both at sea and on land.

#### Regional Development

The concept of regional development in Indonesia was born out of an iterative process that discusses the foundations of understanding dialog and practical experience as a type of dynamic application (Sirojuzilam and Mahalli, 2010). Law No. 26 of 2007 on spatial planning describes space as a territorial unit for all matters not connected to established boundaries and describes the structure based on administrative and/or functional aspects. Hoover and Giarratani in Nugroho and Dahuri (2004) have completed three important pillars in the process of regional development, namely:

1. Imperfect mobility of factors. This pillar has to do with the situation of locating those resources that are physically difficult or that have to be transported between regions.
2. Agglomeration (imperfect divisibility). The agglomeration pillar is an external phenomenon that affects economic actors in the form of spatially increasing economic profits. This happens because of reduced production costs due to reduced distances in the transportation of raw materials and product distribution.
3. Transport costs (imperfect mobility of goods and services). This pillar is the most noticeable to have an impact on economic activity. The implication is that costs related to distance and location can no longer be ignored in the process of production and regional growth.



#### 4. RESULT

##### General Overview of the North Sumatra Regional Tax and Retribution Management Agency

As a follow-up to RI Law No. 22 The year 1999 on Local Government Jo. Government of the Republic of Indonesia Regulation (PP RI) No 84 of 2000 concerning the Guidelines for Regional Apparatus Organizations, issued by the Government of the Province of North Sumatra Regional Regulation (Perda) No 3 of 31 July 2001 concerning Services as Technical Institutions, which supported the Provincial Government (Governor) in carrying out the tasks of decentralization, deconcentration, and assistance. One such service is the North Sumatra Province Revenue Service (DIPENDASU), which is currently being changed to the Regional Tax and Retribution Management Agency (BP2RD). Because of the large number of work areas of the Regional Tax and Retribution Management Agency (BP2RD) covering the entire North Sumatra region, the UPTD / Office Technical Implementation Unit (formerly called the branch office) is effective and efficient in carrying out its key tasks and functions.

The Regional Tax and Retribution Management Agency (BP2RD) has a very strategic

role as the organizer of the part of the governmental authority and the task of deconcentration in the field of regional income, namely: on the principles of accountability, openness, efficiency, and effectiveness.'

##### Effectiveness and Contribution of Surface Water Tax in North Sumatra Province

The Surface Water Tax is a new potential for the acquisition of the Regional Management Agency for Tax and Retribution (BP2RD) of North Sumatra Province. UU no. 28 of 2009 concerning Regional Taxes and Regional Taxes, the definition of surface water is all water that is on the surface of the land, not including seawater, both at sea and on land. So while surface water tax is a tax on the extraction and/or utilization surface water. So, simply the tax on surface water can be interpreted as a tax imposed on the collection of rivers, lakes, reservoirs, and so on. Surface water tax is supposed to carry potential revenues to the country or region.

The effectiveness of the targets and realization of surface water tax revenues at the Regional Management Agency and the North Sumatra Province can be seen in the following table.

**Table 3**  
**Effectiveness of the North Sumatra Province Surface Water Tax Target and Realization 2014 - 2018**

Year	Target	Realization	%	Criteria
2014	60.000.000.000	68.003.380.832	113,34	Highly effective
2015	167.211.362.801	401.710.515.619	240,24	Highly effective
2016	208.000.000.000	253.866,206.023	122,05	Highly effective
2017	84.908.242.000	83.320,133.885	98,18	Effective
2018	577.000.000.000	44.064.099.420	7,64	Not effective
Average			116,29	Highly effective

Source: Processed Data (2018)

Table 3 shows that during the period 2014-2018 the average realization of surface water tax to the surface water tax target of 116.29 was included in the highly effective criteria. Surface Water Tax received by the North Sumatra Provincial Tax and Retribution Management Agency shows that the results of tax revenues during the 2014-2018 period are still ineffective. The effectiveness of collecting surface water tax was considered to be very effective between 2014 and 2016, as this was attributed to taxpayers already paying and applying rates in compliance with the Regional Regulations (Perda) in 2014-2016. The effectiveness of receiving surface water tax is considered to be effective in 2017.

In 2018, the effectiveness of surface water tax collections was criticized as ineffective, as there are already taxpayers who are in arrears to pay their taxes and who do not pay surface water taxes that have been decided by the Regional Government. PT Inalum is responsible for the inefficiency of the surface water tax on the surface water tax targets because Inalum has not yet paid the receivables.

Concerning the Realization of Surface Water Tax Realization Targets in the North Sumatra Province Regional Tax and Retribution Management Agency in 2014-2018 compared to the overall Regional Revenue of North Sumatra Province can be seen from the following table.



**Table 4**  
**Realization of the Surface Water Tax (PAP) for the Realization of the Regional Original Revenue (PAD) of the North Sumatra Province in 2014-2018.**

Year	Realization PAP	Realization PAD	Contribution (%)	Criteria
2014	68.003.380.832	4.351.216.336.963,89	1,57	Less effective
2015	401.710.515.619	4.829.134.049.622,72	8,98	Less effective
2016	253.866,206.023	4.892.810.288.373,78	5,19	Less effective
2017	83.320,133.885	5.308.954.558.114,04	1,57	Less effective
2018	44.064.099.420	5.113.374.280.989,97	0,65	Less effective
Rataan			3,59	Less effective

Source: Processed Data (2019)

Criteria based on Research Department of the Ministry of Home Affairs-FISIPOL UGM 1991

Table 4 shows that during the period 2014-2018 the average realization of surface water tax to the realization of Local Own Revenue (PAD) of 3.59 was included in the less effective criteria based on contribution criteria according to the Research Department of the Ministry of Home Affairs-FISIPOL UGM 1991 (Handoko, 2013). The contribution is how much contribution the Surface Water Tax revenue in the Original Revenue of North Sumatra Province. It is expected that the higher the contribution of Surface Water Tax revenue will also increase the Original Revenue of North Sumatra Province. If the revenue from the Surface Water Tax is on increased, the tax revenue results in the Regional Original Revenues will also increase. It can be seen that the contribution made by the Surface Water Tax only ranges between 0.65 percent to 8.98 percent. The contribution is primarily determined according to the 1991 Research Department of the Ministry of Home Affairs-FISIPOL UGM (Handoko, 2013), when it reaches 50%, the contribution gets better. Contributions are used to assess the extent to which local taxes contribute to local tax revenues.

## 5. DISCUSSION

### Effectiveness and Contribution of Surface Water Tax in North Sumatra Province

The results showed that the average realization of surface water tax to the surface water tax target of 116.29 was included in the highly effective criterion for the period 2014-2018. The findings of this study showed better results than Waani (2016) in the North Sulawesi Province, which showed an average surface water tax in 2011-2015 of 98.16%, which was included in the effective criterion, and Hendri 's analysis (2017) in the Riau Province, which showed an average surface water tax in 2013-2016 of 84.01, which was rated as less effective.

During the period 2014-2018, the average realization of the surface water tax for the realization of the Local Original Revenue (PAD) of 3.59 was included in the criteria for inefficiency according to

the contribution criteria of the Research Department of the Ministry of Home Affairs – FISIPOL 1991 (Handoko, 2013). These findings are consistent with Waani 's research (2016) which concluded that the contribution of the Surface Water Tax to the Original Revenue of the North Sulawesi Province from 2011-2015 on average was 0.25% if, on the basis of these criteria or indicators, the valuation was less effective. Hasil penelitian Hendri (2017) juga menunjukkan hasil yang sama bahwa kontribusi Pajak Air Permukaan terhadap Pendapatan Asli Daerah Provinsi Riau rata-rata dari tahun 2013-2016 adalah sebesar 0,99%, jika berdasarkan kriteria atau indikator tersebut maka penilaiannya adalah sangat kurang.

Hendri's research results (2017) also showed the same results that, on average, the contribution of the Surface Water Tax to the Riau Province 's original revenue from 2013-2016 was 0.99 percent if, based on these criteria or metrics, the evaluation was less effective.

## CONCLUSION

Based on the results of the research conducted, it can be concluded that: The effectiveness of surface water tax during the period 2014-2018 has an average of 116.29 included in the very effective criteria. Surface Water Tax Receipts by the North Sumatra Provincial Tax and Retribution Management Agency show that the results of tax revenues obtained during the 2014-2018 period were still ineffective, i.e 7.64% in 2018. The average contribution of 3.59 to the realization of the Provincial Original Revenue (PAD) for the 2014-2018 period is included in the less effective criteria.

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# ANALYSIS OF FACE RECOGNITION USING VIOLA JONES ALGORITHM AND MODIFIED SELF ORGANIZING MAP

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## ABSTRACT

*This study aims to determine the effect of face recognition method with Viola-Jones algorithm and cosine similarity method in determining initial weights and cluster formation on SOM networks, so as to improve the accuracy of learning self-organizing map (SOM) networks for face recognition. The data used for this research is in the form of face images taken from internet pages with the address: <https://cswww.essex.ac.uk/mv/all-faces/fa-ces94.html>, with an image size of 180 pixels x 200 pixel. The images studied were 1000 images with a total of 50 types of facial images and a sample of 20 images for each face. The comparison between training images and test images is 60:40. Where training images are used as many as 600 images and as many as 400 imagery test images. Face recognition using the SOM method obtained an accuracy of 90% for the network training process and a network testing process of 87.75%. Whereas for facial recognition using modified SOM, the results of facial recognition were 95.67% for the network training process and 94% for the network testing process. It can be concluded that the process of facial recognition using the Modified SOM method has a good percentage of accuracy for facial recognition.*

**KEYWORDS:** *face recognition, face detection, viola jones algorithm, modified self organizing map*

## 1. INTRODUCTION

Self-organizing map (SOM) is one type of artificial neural network with unsupervised learning. The key idea of this approach is to map data input space and calculate its proximity value based on predetermined weights that are commonly used for data clustering techniques. The smallest distance data will be used as the closest neighbor and weight changes will be made. Face recognition requires image input and involves image processing, considering the values of the extracted characteristics found in the image. Before this procedure is carried out, the image detection process will be carried out using the Viola-Jones algorithm, so that the input face image will only take on the characteristics of the face and will then be used as a network input. This is required because the background of the face has

some patterns that can affect the output of the facial image extraction feature, so that the use of the Viola-Jones algorithm only generates facial images for identification purposes.

Many studies have shown that when the selection of initial weights is not appropriate in a self-organizing map (SOM) network, the results are less than optimal to minimize the level of accuracy of the face recognition. Some equations can be used in a self-organizing map (SOM) network to measure the distance between input nodes and weights in a network other than Euclidean distance for measuring data similarity, i.e. cosine similarity. Cosine similarity is a method used to calculate the degree of similarity in the data.

**Objective of the study**  
This study aims to determine the effect of face recognition method with Viola-Jones algorithm and

cosine similarity method in determining initial weights and cluster formation on SOM networks, so as to improve the accuracy of learning self-organizing map (SOM) networks for face recognition

## 2. RESEARCH METHODOLOGY

The data used for this research is in the form of face images taken from internet pages with the address: <https://cswww.essex.ac.uk/mv/all-faces/faces94.html>, with an image size of 180 pixels x 200 pixels. The images studied were 1000 images with a total of 50 types of facial images and a sample of 20 images for each face. The comparison between training images and test images is 60:40. Where training images are used as many as 600 images and as many as 400 imagery test images. The methodology used in this study, namely:

1. Conduct testing of training data using artificial neural networks self organizing map. Before entering the network, first look for initial weights using the cosine similarity method. This method will look at the proximity of the image data in each class to obtain the image data with

the highest similarity and is determined as the initial weight. Initial weights will be entered into the network and produce the final weights that will be used for the testing process.

2. Analyze the use of a self-organizing network map method with cosine similarity for facial recognition. The level of accuracy between the proposed methods of network modification will be compared with the network model without modification. Following that, the highest level of accuracy is seen between the two methods.
3. Summing up the effect of using the cosine similarity method on the network self-organizing map in the selection of network initial weight data, whether it can improve the accuracy of facial recognition or the same as the results of facial recognition using a self-organizing map network without modification.

The following are the steps on face recognition using the Viola-Jones algorithm and the modified self-organizing map network, namely:

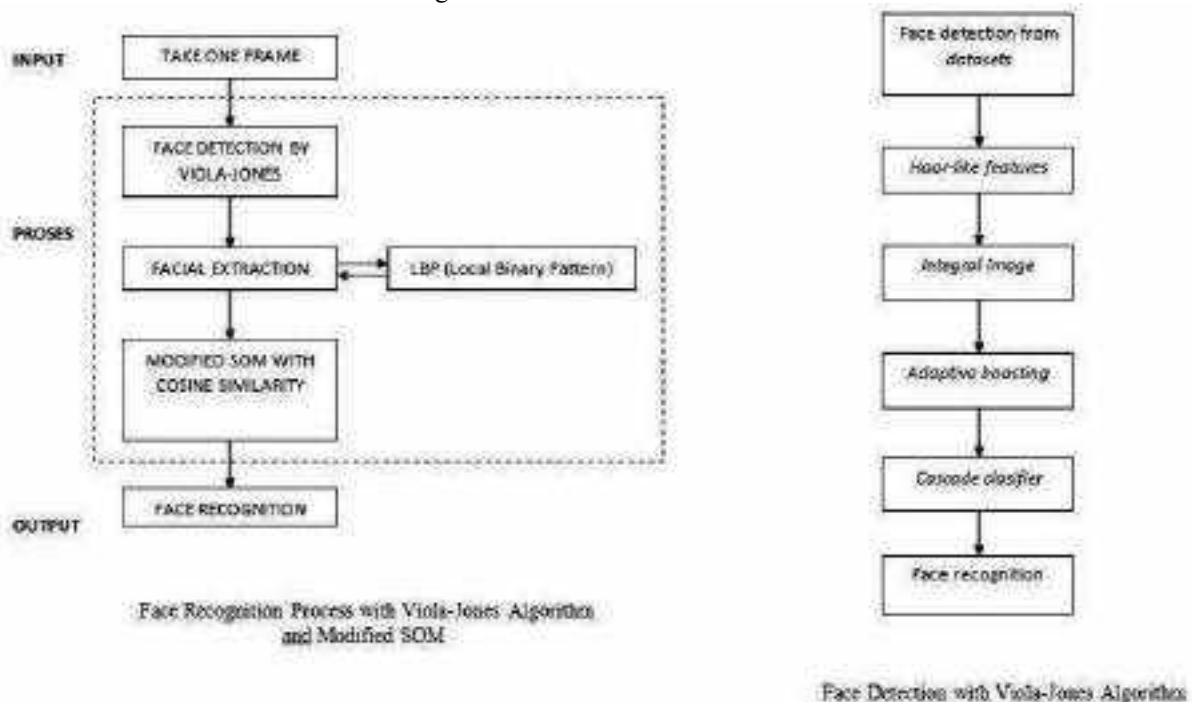


Figure 1



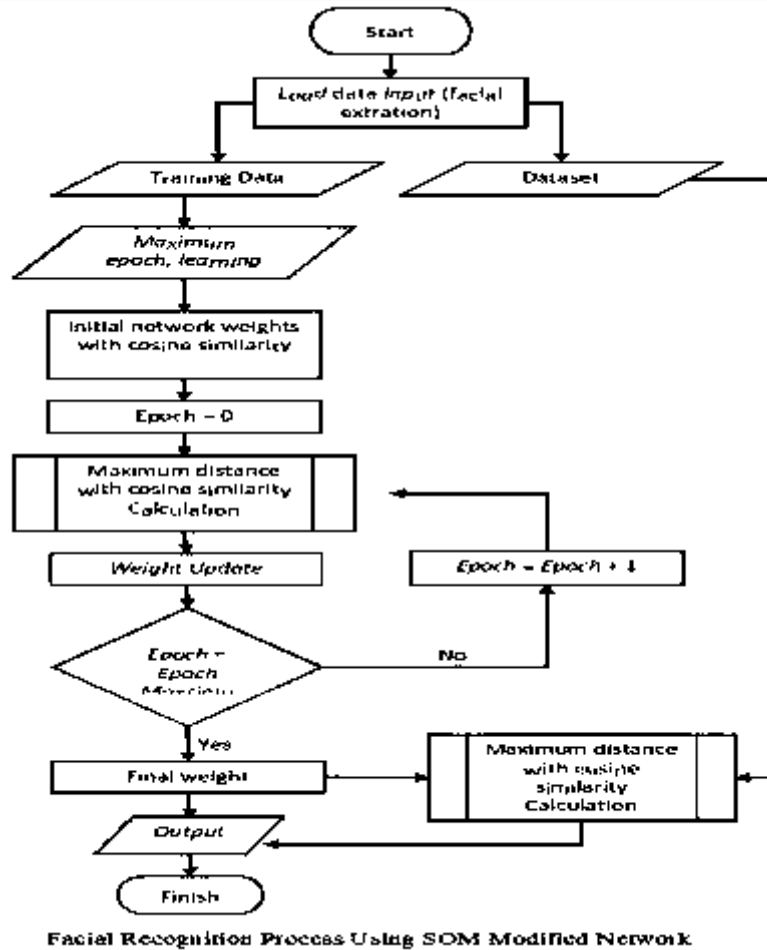


Figure 2

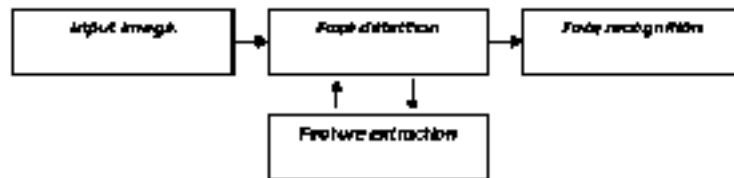
Calculation of the algorithm using the Local Binary Pattern (LBP), a binary code that is represented as a pattern generated by the grayscale process in the image. Self Organizing Map (SOM) is used to determine the results of the classification of data or the classification of face images using the SOM network. Testing is carried out using a computer with hardware and software specifications as follows:

1. Processor Intel Pentium Core i3.
2. RAM 4 GB.
3. Harddisk 500 GB.

4. Matlab R2015b.

### 3. LITERATURE REVIEW

Face recognition is the process of identifying unknown face images with computational algorithms and comparing them to existing face data (Singh & Singh, 2013). Face recognition has three phases, namely: face detection, feature extraction, and face image classification (face recognition).



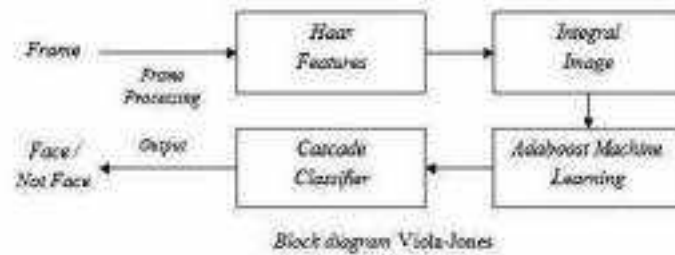
Face recognition process

Figure 3

Face detection is the first step provided by the facial recognition system to retrieve data based on the characteristics of the facial member attributes. Viola-

Jones algorithm is the most commonly used method for detecting faces with relatively fast, accurate, and efficient image performance. Viola-Jones algorithm

process can be seen in Figure 4 below (Raya, et al., 2017).



Gambar 4

The face detection step with Viola-Jones algorithm is as follows (Syafira & Ariyanto, 2017).

1. Haar-like feature
2. Citra Integral
3. Ada-Boost
4. Cascade Classifier

Image Extraction is the method of extracting features or information from objects in the image that you want to identify or differentiate from other objects. The facial recognition feature extraction process in this study can be performed based on the texture value in the image that is generated from the texture feature extraction process using the LBP (Local Binary Pattern) method. Local Binary Pattern is a non-parametric operation used to describe the local spatial structure of the image.

SOM is a technique for the analysis of high-dimensional input data that are unsupervised neural networks. SOM will determine the similarity of characteristics between data groups within the same cluster (Oja & Kaski, 1999). The steps taken in the clustering and classification phases using the SOM network can be described as follows. (Lumchanow & Udomsiri, 2017).

1. Initialization of initial weights chosen randomly
2. Set the epoch value and learning rate ( $\alpha$ ).
3. Prepare training data (input vectors) from the dataset.
4. Calculates the proximity of distance ( $d_{ij}$ ) between input vectors and weights ( $w_{ij}$ ) at each node.
5. Perform an update (change in weight) at the closest value based on the BMU value and make changes to the learning rate ( $\alpha$ ).

6. Perform further calculations as in phase 4 based on the specified number of epochs. Network learning will be stopped until the maximum epoch value is reached.

Cosine similarity is a measure of the similarity between two vectors derived from the cosine angle values based on the comparison of these vectors. The application of the cosine similarity method is useful in classifying data on the number of objects having certain similarities as a grouping of studies based on the cosine similarity measured.

## 4. RESULT

### SOM Network Learning Accuracy Testing Results on Face Recognition

This test was performed to determine the accuracy of facial recognition using the SOM network. Face images obtained both the training image and the test image will be processed using the Viola-Jones algorithm to get the right part of the face. After that, face recognition will be performed with the SOM network. In this network, the initial weight will be determined randomly and selected data from 12 test data in each image class. The total weight chosen was 50 data because the data classes in this study were 50 classes. Weights can be chosen from the data because the range of weight formation values is still met.

The training accuracy obtained from each face recognition experiment with random weights can be seen in Table 1 as follows.

Tabel 1  
 SOM Network Training Accuracy

Description	Experiment I	Experiment II	Experiment III
True data	540	538	537
Accuracy	90%	89.67%	89.50%

Based on the experiments that have been done, the highest test scores obtained in Experiment I. This shows that the weight used in Experiment I is better than the weight in other experiments.

Producing the weight released for the testing process is the final weight generated in experiment I. Furthermore, the weight in experiment I will be included in the network to obtain the required final

weight will be useful for the SOM network testing process on face recognition.

The testing process is performed to determine the accuracy of the face recognition of the new face image input. This process is extracted from the calculation of the final weight of the new input image data. The minimum distance calculation uses

Euclidean equations on the SOM network to determine which class the new image input belongs to. The test images used in this study were 400 images with 50 data classes. The findings of face recognition using a random weight SOM network can be seen as follows in Table 2.

**Table 2**  
**SOM Network Testing Results**

Description	Testing Image
<b>Total data</b>	<b>400</b>
<b>Total of true data</b>	<b>351</b>
<b>Accuracy</b>	<b>87.75%</b>

From table 2 above, we can see the accuracy of the SOM (Self Organizing Map) network testing for face recognition. The epoch determined in the network learning process is 100 and alpha ( $\alpha$ ) is 0.01 with a reduction of 0.5. Testing accuracy obtained by

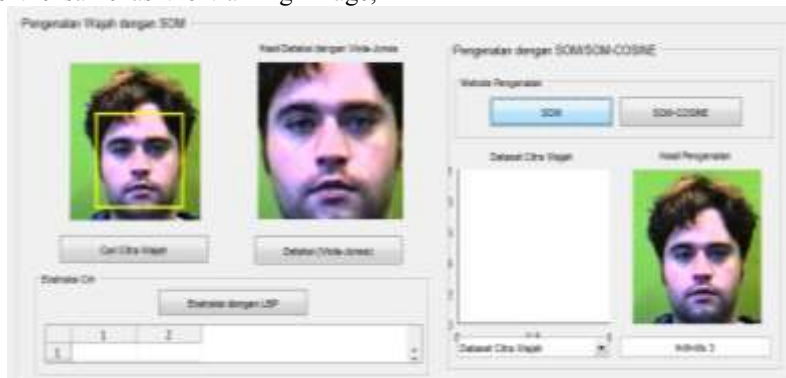
87.75% with the correct amount of data as many as 351 of 400 data. The program display with the parameter settings mentioned can be seen in Figure 5 as follows.



**Figure 5**  
**Face Recognition Accuracy with SOM Networks**

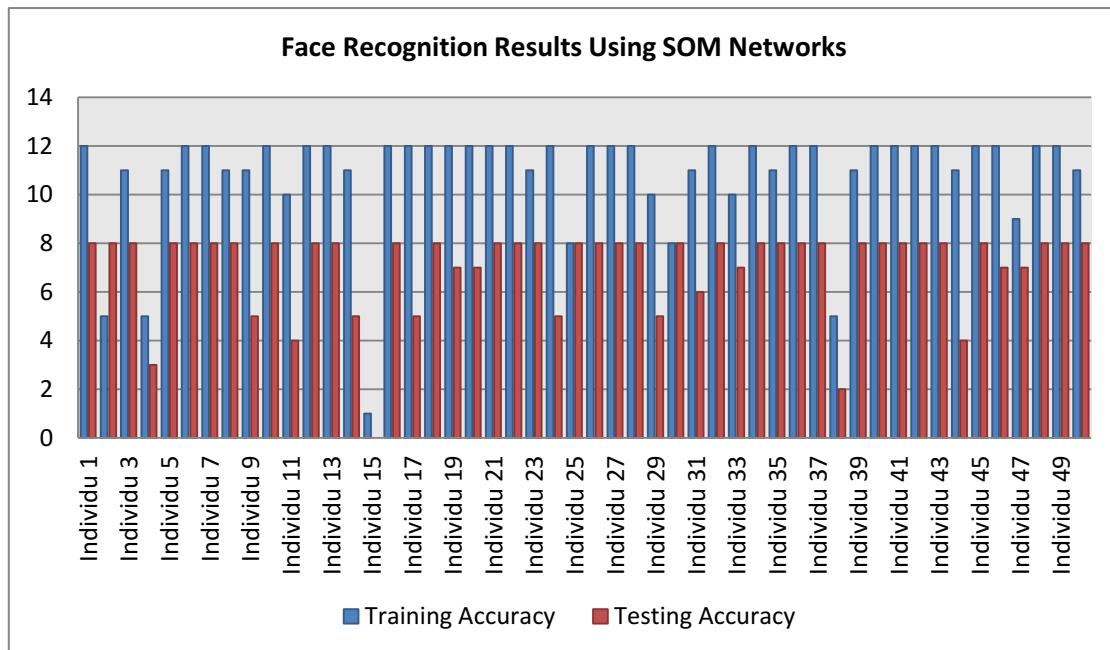
Input image in the form of the face image in the testing process first search feature extraction values using the LBP (Local Binary Pattern) method like the previous training image. The value taken for each test image is the same as the training image,

which is the value of the image texture features with a total of 59 character values or features. The results of testing each individual in the program for facial recognition can be seen in Figure 6 as follows.



**Figure 6**  
**The Recognition Process in New Imagery with the SOM Network**

Introduction results for each data class consisting of 8 test images can be shown as a whole in Figure 7.



**Figure 7**  
 Face Recognition Results in 50 Individuals Using SOM network

### SOM Network Accuracy Test Results Using Cosine Similarity in Face Recognition

This test is performed to determine the accuracy of face recognition using a modified SOM network for the determination of initial weights and the equation for the determination of class data using cosine similarity. The resulting image will be determined using a texture extraction feature using the LBP (Local Binary Pattern) process. This value is used as an input to the SOM network that will be learned to get the final weight. Before entering the network, the data in each image class is chosen to be used as the initial weight of the network chosen using the cosine similarity equation. The data trained on the SOM network consists of 600 images and each class consists of 12 data / images. Using the cosine equation, the level of similarity of images with the

highest similarity can be determined as the initial weight of the SOM network.

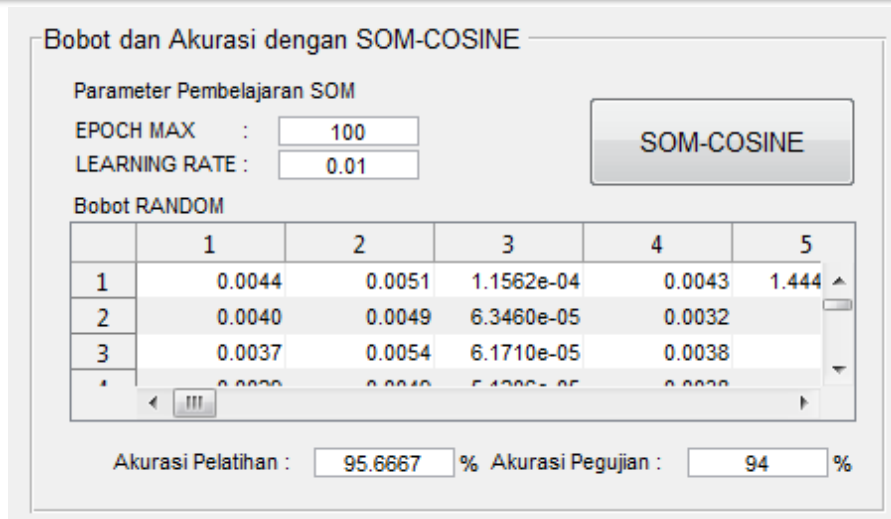
Testing is carried out to determine the accuracy of facial recognition of new data or new face image input. This process is generated from the calculation of the final weight of the new input image data. Calculation of the maximum distance using the cosine equation on the SOM network, which determines which class of new data or new image input, is grouped together. The training images used in this study were 600 images with a total of 50 data classes. While there were 400 images with a total of 50 data classes for the testing process. Results of face recognition using the SOM network use cosine similarity for the determination of initial weights or SOM modifications as shown in Table 3 below.

**Table 3**  
 Modified SOM Network Test Results for Face Recognition

Description	Training Image	Testing Image
<b>Total data</b>	600	400
<b>Total true data</b>	574	376
<b>Recognition Accuracy</b>	95.67%	94%

A comparison between the accuracy of the training and the accuracy of the SOM modification network testing for face recognition can be seen from Table 3 above. The epoch determined in the network learning process is 100 and alpha ( $\alpha$ ) is 0.01 with a

reduction of 0.5. Testing the program with the parameters defined in the SOM modification network can be seen as follows in Figure 8.



**Figure 8**  
**Face Recognition Accuracy with SOM Modified Networks**

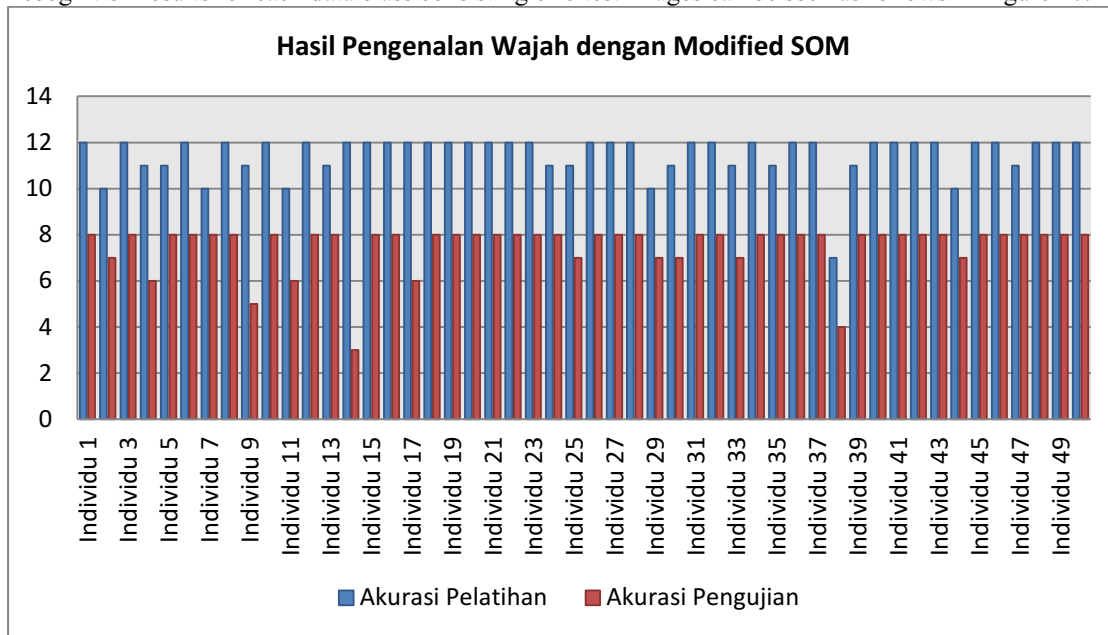
The final weight generated will be stored in the network during the training process and will be reused for the modified SOM network testing process. The input image in the form of a face image will first be searched for the extraction value of the feature using the LBP (Local Binary Pattern) method

as the previous training image. The value used for each test image is the same as the training image, which is the value of the image texture features with a total of 59 character values or features. The results of each individual's testing of the face recognition program can be seen as follows in Figure 9.



**Figure 9**  
**The process of recognition of new images using the modified SOM network**

Recognition results for each data class consisting of 8 test images can be seen as follows in Figure 10.



**Figure 10**  
 Face Recognition Accuracy in 50 Individuals Using the Modified SOM Network

### 5. DISCUSSION

The testing process in this study was performed by comparing the same SOM network parameters. The network input (face image), epoch, alpha ( $\alpha$ ), and dec

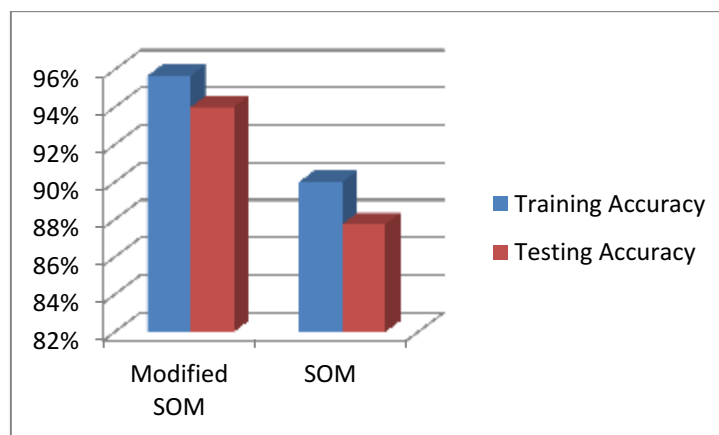
alpha ( $\alpha$ ) must be the same so that the process comparison can be well compared. Setting the value is performed by checking with the appropriate parameters.

**Table 4**  
 Accuracy of Face Recognition Comparison

Proposed method	True Data		Training Accuracy	Testing Accuracy
	Training image	Testing Image		
<b>SOM</b>	540	351	90.00%	87.75%
<b>Modified SOM</b>	574	376	95.67%	94.00%

From table 4 above, the process of face recognition with the SOM network requires the right initial weight so that the image can be correctly recognized.

The results of the comparison of the proposed method can be seen as follows in Figure 11.



**Figure 11**  
 Comparison of Accuracy of Face Recognition Methods



Based on the tests conducted for the face recognition process using the modified artificial neural SOM network, the results were better than the standard SOM. This shows that the method of determining the initial weight used can have an effect on the results of better recognition of the face. In the standard SOM network 3 experiments have been carried out, namely experiments I, II, and III. All three experiments used initial network weights that were randomly determined from training data. Accuracy results obtained from the three experiments showed smaller results compared to the modification of the SOM network by determining the initial weight using cosine similarity.

On the basis of the results obtained between the SOM method and the modified SOM, it can be shown that this network requires the right initial weight to improve the accuracy of facial recognition. The initial weight of the SOM network is normally calculated by a random value with a range of 0-1 values. Initial weight in this study by taking some training data as it can be used as an initial weight in network formation. Training data used as weights are randomly selected according to random selection of training data on the SOM network to obtain different accuracy results, but the accuracy results are not very different. In the meantime, in the modified SOM network, the weights are selected using the cosine similarity method to determine the initial weights. In this equation, the similarity value of the image will be calculated so that the image has the highest similarity to the other images. The image with the highest similarity is the image used as the initial weight in the SOM network and is considered to be the reference image in the network. Similarity searches should be searched for each data group in such a way that each data group has a weight obtained based on the highest similarity.

From the previous description, face recognition using the SOM method obtained 90 per cent accuracy for the network training process and 87.75 per cent accuracy for the network testing process. Whereas for face recognition using modified SOM, the results for facial recognition were 95.67 percent for the network training process and 94 percent for the network testing process. The conclusions reached are therefore an increase in accuracy in the modified SOM network better than the standard SOM with an improvement in training accuracy of 5.67 per cent and 6.25 per cent for network testing. It can therefore be concluded that the process of face recognition using the modified SOM method has a good percentage effect on face recognition.

## 6. CONCLUSION

Face recognition using the SOM method obtained 90 percent accuracy in the network training process and 87.75 percent accuracy in the network testing process. Whereas for face recognition using

modified SOM, the results for face recognition were 95.67 percent for the network training process and 94 percent for the network testing process.

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## ON A GRACEFUL FAMILY OF 3-TUPLES

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### ABSTRACT

*This paper concerns with the study of formulating 3-tuples consisting of polygonal and pyramidal numbers such that, in each three tuple, the sum of any two members is a perfect square.*

**KEYWORDS:** 3-tuples, polygonal numbers, pyramidal numbers.

### Notations:

- $SO_n = n(2n^2 - 1)$  = Stella Octan gula number of rank n
- $CP_n^3 = \frac{n(n^2 + 1)}{2}$  = Centered triangular Pyramidal number of rank n
- $CS_n^4 = \frac{n(2n^2 + 1)}{3}$  = Centered square Pyramidal number of rank n
- $P_n^5 = \frac{n^2(n + 1)^3}{2}$  = Pentagonal Pyramidal number of rank n
- $P_n^3 = \frac{n(n + 1)(n + 2)}{6}$  = Triangular Pyramidal number of rank n
- $CP_{9,n} = \frac{n(3n^2 - 1)}{2}$  = Centered nonagonal pyramidal number of rank n
- $CP_{24,n} = \frac{24n^3 - 18n}{6}$  = Centered icositetragonal pyramidal number of rank n



- $t_{m,n} = n \left( 1 + \frac{(n-1)(m-2)}{2} \right) = \text{Polygonal number of rank } n \text{ with size } m$
- $PR_n = n(n+1) = \text{Pronic number of rank } n$
- $S_n = 6n(n-1)+1 = \text{Star number of rank } n$
- $GNO_n = 2n-1 = \text{Gnomonic number of rank } n$

### 1. INTRODUCTION

Number patterns have occupied a unique position in the subject of Number Theory as they possess not only truth but also supreme beauty. Nearly every century has witnessed new and fascinating discoveries about the properties of numbers. For varieties of problems, one may refer [1-8]. The above problems motivated us for constructing three tuples. This paper concerns with the study of formulating 3-tuples consisting of polygonal and pyramidal numbers such that, in each three tuple, the sum of any two members is a perfect square.

### 2. METHOD OF ANALYSIS

Triple 1:

Let  $a = 2t_{3,2k} = 4k^2 + 2k$  and  $b = 2k + 1$

$$a + b = (2k + 1)^2$$

Let  $c$  be any non-zero integer such that

$$a + c = \alpha^2$$

$$b + c = \beta^2$$

Using some algebra

we have

$$c = 24k P_{k-1}^3 - 2k$$

Here  $(2t_{3,2k}, 2k + 1, 24k P_{k-1}^3 - 2k)$  is the required triple such that the sum of any two members is a perfect square.

Properties:

- $c - a + 2b + 2$  is a perfect square
- $c + 3a - 2b + 6$  is a perfect square
- $2a - b + c + 1 = 8k CP_k^3$

Triple 2:

Let  $a = Ct_{10,2k} = 20k^2 + 10k + 1$  and  $b = 5t_{10,2k} = 80k^2 - 30k$

$$a + b = (10k - 1)^2$$

Let  $c$  be any non-zero integer such that

$$a + c = \alpha^2$$

$$b + c = \beta^2$$

Using some algebra

we have

$$c = 100(t_{8,k})^2 - 5t_{10,2k}, k > 1$$

Here  $(Ct_{10,2k}, 5t_{10,2k}, 100(t_{8,k})^2 - 5t_{10,2k})$  is the required triple such that the sum of any two members is a perfect square.

Properties:

- $4(a - 1) - b \equiv 0 \pmod{70}$
- $3(a - 1) + b \equiv 0 \pmod{140}$
- $c - 4b - 15a \equiv 0 \pmod{15}$

**Triple 3:**

Let  $a = 8t_{3,k} = 4k^2 + 4k, k > 1$  and  $b = 1$

$$a + b = (2k + 1)^2$$

Let  $c$  be any non-zero integer such that

$$a + c = \alpha^2$$

$$b + c = \beta^2$$

Using some algebra

we have

$$c = 2k SO_k + 12CS_k^4 + 4t_{3,k-1} - 6k$$

Here  $(8t_{3,k}, 1, 2k SO_k + 12CS_k^4 + 4t_{3,k-1} - 6k)$  is the required triple such that the sum of any two members is a perfect square.

Properties:

- $c - 2ka = 8k CP_k^3 - t_{25,k} - 15k$
- $2k^2a - c = 8k CP_k^3 - t_{10,k} + 5k$

For simplicity some more triples satisfying the required condition are given below:

<b>Triple 4</b>	$(t_{12,2n} + 2t_{3,2n} + 1, t_{8,2n} - 2n, 6n + 24nCP_{9,n})$
<b>Triple 5</b>	$(t_{34,n} + t_{42,n}, 11GNO_n - 10, 4(t_{20,n})^2 - 48nt_{20,n} - 68t_{3,n-1} + 142n^2)$
<b>Triple 6</b>	$(S_n, 6t_{12,n} + 18, 36n CP_{24,n} + 78n^2 + 6n)$
<b>Triple 7</b>	$(4PR_n, 1, 8nP_n^5 - 24CP_n^3 + 8n)$
<b>Triple 8</b>	$(7(6P_n^3 - 2P_n^5), 4t_{3,n} + 4, 36(t_{3,n})^2 - 28t_{3,n})$

**3. CONCLUSION**

In this paper we have presented triples involving polygonal and pyramidal numbers such that the sum of any two members of the triple is a perfect square. The readers of this paper may search for quadruples and higher order tuples with the sum of any two members as a perfect square.

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# INSIGHTS INTO THE WORKERS' PARTICIPATION IN MANAGEMENT IN AN INDIAN SUGAR INDUSTRY: A DIAGNOSTIC STUDY

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## INTRODUCTION

'JUPITER' sugars India LTD was founded in the year 1941 in southern India as a private sugar factory. Later it has enhanced its production from 1000 TCD to 8500 TCD in the year 1962. It was amalgamating of many sub units and multi locational products into its main unit. The company has focussed its attention on various projects and substantial resources. Subsequently, they have decided to organise the company into two units one in southern India and one in northern India.

Sugar industry is one of the most important agro-based industries in India and is extremely accountable for creating major impact on rural economy in particular and country's economy in broad-spectrum. Sugar has been yield in the Indian subcontinent since ancient times and then it spread to other parts of the world<sup>1</sup>. Sugarcane is a native of tropical Indian subcontinent and Southeast Asia. Sugar industry ranks second amongst major agro-based industries in India. In India, sugarcane is planted thrice a year in October, March and July depending on part of the country. The majority of the sugar production in India takes at local Cooperative Sugar mills<sup>2</sup>. After Independence, India made serious plans for overall industrial development of sugar industry<sup>3</sup>.

The Indian sugar industry is independent in its energy needs and further makes additional exportable power through cogeneration. The different byproducts of sugar industry likewise add to the economic development of the nation to advancing various additional industries. Sugarcane has developed as a multi-product crop utilized as an essential raw material for the manufacture of sugar,

ethanol, paper, electricity and besides a cogeneration of subsidiary product. The taking care of dairy cattle of sugarcane is significant source of bio-vitality and more demand in rural area. Molasses is an essential sustain stock for distilleries. The ethanol necessity of the nation is going up progressively. In sugar industry, creation of power utilizing biogases was the typical option and utilization of biogases as a substitute raw material for wood pulp for monetary and ecological sustainability.

## Importance of Workers' Participation in Management

The relationship between workers and employer will increasingly significant when they listen to each other and resolve issues commonly. The sugar industry must ensure that the participation of employees in the board of the industrial unit ought to be supported by utilizing of works committees, joint consultation and other techniques. This improves correspondence among administrators and workers, increase efficiency and lead to more prominent viability as group. The principle thought of workers participation in the administration is to expand workers impact in the administration by giving due acknowledgement to human component in the organization. The idea of workers participation is an endeavour with respect to the business to incorporate his representatives with a group which moves in the direction of the realisation of common objectives<sup>4</sup>.

## SELECT REVIEW OF LITERATURE

Om Prakash (1990)<sup>5</sup> observes that the participative management seems to be quite a



neglected aspect of organizational climate in public sector. Viable information system, appropriate forum, acceptable choice of representatives, adoption of employee stock share ownership plan, and indication of limits with regard to the powers of worker's representatives are major adjuncts of participative management.

Porter, E.L (1994)<sup>6</sup> has examined the concept of participative management and job satisfaction among community college librarians in the United States. As community college librarians face increasing demands for new services related to the information technology revolution and for expanded instruction to students needing informational retrieval skills, they also face pressures to provide these services within budgetary constraints. The study examined the role played by participative management in contributing to job satisfaction among these librarians. Literature was reviewed showing how participative management contributes to the satisfaction of psychological, social and self-fulfilment needs described Maslow and Herzberg. The function of participative management was also noted in the human relations theory of management, contingency management theory and the Total Quality Management model of management. The study confirmed that there was statistical evidence of a moderate correlation between participative management and job satisfaction.

Abhimanyu Kumar and Anshu Taunk (2012)<sup>7</sup> have analyzed in their study and stated that several participative forums involving workers and management representatives work in the National Thermal Power Corporation (NTPC, Ramagundam) in Andhra Pradesh. The membership pattern in this participative forum reveals that they give an almost equal representation to both these categories. The workers representatives are capable of presenting their views quiet independently and freely in the meetings of the forums. The workers representatives are either elected by the workers themselves or by the trade union leaders. The study revealed that the management of NPTC Ramagundam in Andhra Pradesh is found to implement almost all the important decisions of the participative forums. The management with the help of workers ensures that they are capable of taking fruitful decision regarding policy making, service conditions, productivity, manufacturing and administration and supervision. Thus, it can be concluded that all these factors point out to the effective functioning of the scheme of participation of the workers in NTPC Ramagundam Andhra Pradesh.

Rathnakar (2012)<sup>8</sup> reveals that the workers will definitely get benefit, hence the participation is confined to all members in the organization and considers them at different levels of decision making. Employees agree that committee members share the information with their colleagues after meetings, the

workers participation in management improves understanding between managers and workers and informed that joint management councils is the method of WPM which is used mostly in the organization.

Arun Kumar (2016)<sup>9</sup> has stated that the concept of workers participation management is a system of communication and consultation, either formal or informal, by which employees of an organization are kept informed about the affairs of an undertaking and through which they express their opinion and contribute to management decisions. Participation of workers in organizational decision making process in management in HEEP Haridwar unit of BHEL is sufficient or good. It is also helpful to create peaceful and harmonious environment in the unit and also helps in increasing the production and productivity in the unit.

Brijesh Verma and Ajay Pachauri (2017)<sup>10</sup> have felt that the concept of workers participation in the management of industry is very important from the organization and from the individual point of view. The participation satisfies the people's higher order needs. Most of the persons in the organization aim at earning their livelihood but there are some others who take full interest in the organization, departments, their supervisors and fellow workers and they contribute towards achieving the organizational goals. The scheme of participation promotes industrial and human relations and thus helps minimizing the labour disputes because they participate in the process of decision-making and become the partners in those decisions. All the problems concerning the workers are settled.

## SCOPE OF THE STUDY

The scope of this study is confined to the procedure of workers' participation in management in 'JUPITER' sugars India Ltd. Only. The outcomes of this study cannot be generalised to any other company.

## OBJECTIVES

The specific objectives of this paper are

- i. To assess the contemporary patterns of workers' participation in management in 'JUPITER' Sugars India Limited;
- ii. To measure the level of satisfaction/dissatisfaction of employees/workers towards the contemporary patterns of workers' participation in management in 'JUPITER' Sugars India Limited;
- iii. To identify the reasons for the dissatisfaction of employees/workers respondents towards the contemporary pattern of workers' participation in management in 'JUPITER' Sugars India Limited;



- iv. To offer the feasible ways and means to streamline the contemporary patterns of workers' participation in management in 'JUPITER' Sugars India Limited.

## RESEARCH METHODOLOGY

The methodology consists of data collection from primary as well as secondary source. Through the survey method, the firsthand information was collected from 60 sample respondents from the study unit.

### Sample design and size

A purposive-cum-convenient sampling technique was followed and 60 respondents were chosen as sample respondents from the study unit.

### Analysis of the data

The information collected from the sample respondents was processed and tabulated scientifically and several statistical tools like (i) independent sample t-test; (ii) weighted mean scores; and (iii) ANOVA are calculated at appropriate levels.

### The Limitations

1. The study is confined to only one sugar unit;
2. The size of the sample is 60 only where the number is very meagre.

## RESEARCH FINDINGS

1. The present scheme of employee/workers' participation in management is not at all promoting the industrial harmony and human relations in the company and also not minimizing the industrial dispute prevailed in the company (58.33%)
2. In the process of the employee/workers' participation in management, the employees and employee representatives are not given freedom while taking the decisions and not making them as partners in taking decisions. The management representatives are taking monotonous decisions which are biased and prejudiced (56.66%).
3. There are no proper senior HR executives in the company to look after the proper pay-revisions and to review and implement them (46.66%).
4. The present procedure of workers participation in management is not at all improving the quality of life of the employees/workers. So that the individual productivity of the employees is utterly lowering down (53.33%).

## SUGGESTIONS

1. The present scheme of employee participation in management should be re-designed immediately. In the proposed new

scheme, the employees should be given at most freedom to freely represent their views in the participation. In order to encourage the participation of employees effectively, periodical conduct of the procedure of employee participation in management would help the individual employees for regular participation into the management decisions.

2. While taking the decisions in the process of employee participation in management, the consensus of the individual employees should be collected on the items to be discussed in the employee participation in management. Further, the decisions taken in the process should be circulated each and every individual employees and their opinions should be solicited. So that the individual dissatisfactions of the employees can be minimized.
3. Properly educated and experienced H.R executives like a post graduate in H.R management with atleast 10 years experience in H.R activities should be appointed as an H.R executive and reasonable sub staff should be given to him for operation of H.R activities effectively.
4. Proper and scientific procedure of workers' participation in management, which can improve the quality of life of the employees' can be evolved. So that the individual/productivity of the employees/workers can be enhanced enormously.

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# EXTENSIVE MODERN LANDSCAPING OF ROOFS- THE STRUGGLE FOR CLEAN, FRESH AIR

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## ANNOTATION

*This article describes the authors propose to use gardens on the roofs which come to us from time immemorial, today they become one of pressing needs of a society in its aspiration to ecologically pure environment.*

**KEYWORDS:** *Shiver, uncomfortable negative emotions, ultraviolet radiation, bio-interior, megacities, and green bio inclusions.*

## INTRODUCTION

Architecture, in accordance with the laws of convenience and beauty, plays a large role in shaping the material living environment in which a person lives, works and has a rest.

Imagine: you live in a bustling city - in one of the apartment buildings, in the apartment at the top of it. When you wake up in the morning, you open the window to ventilate your shelter. At that moment, you instinctively look at the roofs of houses lower than yours. Then your heart expands as you gaze at the lush greenery on the roofs, the lush green grass, and the various shrubs and trees. Your eyes will rejoice at the greenery between the earth and the sky. [1]

This is not just a fantasy, but also a reality that has already been realized in some regions of the world!

## RESEARCH METHODOLOGY

At present, the improvement of the ecological condition of cities is attracting the attention of the whole world as one of the most pressing issues. A group of experts strongly advocates the need to green the roofs of apartment buildings, large and small businesses and institutions as one of the effective measures to address this issue.

At their suggestion, on the roofs, as well as on the ground, will be built lawns, flowerbeds, recreation areas. This will provide a positive solution to a number of problems related to urban development. First of all, it absorbs dust and ensures ecological purity. Second, it reduces wastewater generated by heavy snowfall or rainfall and prolongs the life of local sewer systems and water treatment

plants. Third, in the summer, the roofs of multi-storey houses, more low-rise buildings, prevent the air from overheating. Most importantly, the air is enriched with oxygen; clean, pure air has a positive effect on human health. Improves the immune system, stimulates the relaxation of human nerves, and the beauty of beautiful, graceful, eye-pleasing nature lifts the mood of workers, people, and this has a direct positive effect on the work process.

Here's a comparison for yourself: the air temperature rises to 27 degrees Celsius, the bituminous and white-painted roof heats up to 49 degrees when the sun shines all day, and the black-painted roof to 82 degrees. If it is covered with plants, the temperature does not exceed 29–30 degrees. This means that in hot weather, there is no need to cool the rooms of multi-storey buildings with electrical equipment. This saves valuable energy used for the same purpose, avoids unnecessary costs, and therefore contributes to a certain extent to the smooth operation of power plants, even in tense times.

Roof greening in European cities has been going on for 10-15 years. In Tokyo, one in five of the city's medium-sized and large buildings must be covered with greenery. In the United States, the city of Chicago is leading the way. In this city, first of all, a variety of plants are planted on the roofs of newly built and then old houses.

According to the results of tests conducted so far, one of the most suitable plants for care on green roofs is sedum. Because it is resistant to heat and cold, it grows slowly and accumulates a lot of moisture in the leaves. There are many types of sedum.





Most importantly, no matter what plant is planted, partial or complete landscaping of large roofs with a surface will not be without benefits. To do this, first of all, pay special attention to soil selection. If possible, it is best not to use natural soil. Because it is relatively heavy and is likely to condense under the influence of precipitation. As a result, its ability to retain moisture and deliver air to the plant root is reduced. Therefore, instead of ordinary soil, it is advisable to use artificial materials, including clay or clayey shale, that is, rocks that have been cooled, enriched with organic compounds and fertilizers.

The type, thickness and number of layers of soil are also important in landscaping roofs.

However, if its thickness is around 75 millimeters, when saturated with moisture and planted low-growing plants, it can weigh from 70 to 120 kilograms per square meter of surface. As the soil thickens, this weight increases spontaneously. At the same time, the opportunity to create a variety of lawns and flowerbeds on the roof, grow shrubs and tall trees expands. Only more money will be spent for this. At the same time, as the plants grow and the demand for climate and air increases, it is necessary to strengthen the soil layer, to ensure that snow and rainwater does not accumulate on the roof and flows down from special gutters.



Prefabricated modules of the same thickness, each with a size of 1 square meter, can be used to build live roofs. When you connect them together, the roof comes into a single shape that is covered and covered with soil. Prevents water from seeping into the roof of the building or the ceilings of rooms due to its high density.

## CONCLUSION

Of course, it should be borne in mind that the landscaping of roofs also has its drawbacks. For example, it is possible that the roofs of some houses, especially those built many years ago, are not strong enough, which means that they cannot withstand the weight of green roofs. But a positive solution to this problem will turn any roof into an airy and pleasant place where you can easily drink coffee, have lunch, soak in the sun, dry your skin, and breathe fresh air.

Architecture will be the more progressive and the more fully meet the requirements of creating a full-fledged material living environment of society, satisfying practical and aesthetic needs, the more fully and wider people will enjoy the benefits of nature, armed with the latest scientific, technical and artistic achievements of their time, using not only natural landscapes on earth but also on the roofs.

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# APPLICATION OF FOREIGN EXPERIENCE OF GREEN ROOFS IN UZBEKISTAN

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## ANNOTATION

*Compares the foreign and domestic experience: the first representatives of the legal regulations, areas of greenery. The advantages and disadvantages of this kind of gardening are considered.*

**KEYWORDS:** *green roofs, landscaping, domestic experience, the republic of Uzbekistan, foreign experience, extensive and intensive methods of landscaping roofs.*

## INTRODUCTION

"The roof garden will be the most beautiful part of the building, which means the revival of green spaces in big cities,"- said Le Corbusier. Green spaces provide a comfortable stay for people: reduce dustiness of the air, reduce the harmful concentration of gases in the air, reduce air temperature and noise pollution, have phytoncidal properties. Only in green areas can a person find peace and refuge from the fast, noisy life of the city. The scarcity of territories to create green spaces is an acute problem for large cities and megacities today. The rapid urbanization and active development of the industrial complex affect both the ecology of the planet and the quality of life of the population.

## RESEARCH METHODOLOGY

The story of creating a roof garden began before our era. The first ancient landscape ideas were the hanging gardens of Babylon and the green terraces of Caesar Augustus. The modern history of such landscaping begins in Iceland, where the roofs were covered with earth and planted with grass. The houses of the inhabitants of this island country resembled living corners, on the roofs of which greenery freely grows almost like in natural conditions. The first to seriously plan the gardens of this type was the famous French architect Le Corbusier. In the first half of the twentieth century, he defined the five principles of new architecture. The second principle characterized the possibility of greening the roofs and read as follows: "The roof garden will be the most beautiful part of the building, which means the revival of green spaces in big cities." Despite centuries of experience, roof gardening began to spread only in the 80s of the

twentieth century, when technology and high-quality materials were invented. [1]

Currently, green roofs have received wide international recognition, and their construction is carried out in almost all regions of the world, the first place in creating roof gardens, especially in the production of new building materials for this, belongs to Germany. In this country, one of the prerequisites for the design of new buildings is greening the roof, including one with a significant slope. Even taxes were introduced for homeowners who do not use roofs under gardens.

In a number of European countries, including the Netherlands, Norway, Italy, Hungary, Sweden, Greece and others, there are associations that are actively promoting the idea of "green roofs". In the Austrian city of Linz, roof gardening developers have been paid by the municipality since 1983, and in Switzerland, the federal green roof law has been enacted since the late 1990s.

In North America, this technology began to develop later than in Europe, but by 2010, the area of green roofs in the USA and Canada amounted to 900 thousand m<sup>2</sup>. National standards and legislative acts aimed at maintaining and developing roofing gardening technology are being adopted. In Canada and Japan, all newly built buildings with a flat roof must have a green roof without fail. Financing is carried out, as a rule, at the expense of the state budget. However, the largest commercial companies are also investing in the development of roofing technologies at their infrastructure facilities. [2]

In 2017, a law was passed in San Francisco, according to which, green roofs should be designed in new buildings. A year earlier, in 2016, a similar law was introduced in France - there, all buildings



built in commercial areas should be partially covered by plants or solar panels.

So why are we in Uzbekistan unable to introduce the same “green roofs” law for private construction companies built in commercial areas, in new buildings, design institutes when they project all classes of buildings?

Roof landscaping in the Republic of Uzbekistan has not yet become a mass phenomenon. However, we must pay great attention to this.

Green roofs have several advantages over conventional roofing of buildings:

- Improving the ecology of the building itself and the area around it: green spaces purify the air, retaining about 20% of harmful impurities;

- Increase the level of sound insulation. Especially relevant for buildings located near motorways, airports and other noise sources;

- Increase the level of thermal insulation: the green roof regulates well the processes of heat exchange of the building with the environment. In the winter heat is delayed, and in the summer the house is in a pleasant cool;

- Additional resting place and additional area for the implementation of gardening ideas;

- increase the service life of the roof. Plants and soil to some extent protect the roof from the effects of negative factors: moisture, snow, sunlight, etc.

- Protection from snow blockages and flooding. Plants in this case take the blow and partially delay snow dumps and rainwater;

- Aesthetic component. Gardening is an original, always memorable design of the roof;

In addition to the advantages, there are also disadvantages of green roofs, namely:

- high cost compared to a conventional roof;
- heavy weight, which may not withstand the covering material on it.

A scrupulous selection of plants and proper care for them. Before creating a green roof garden, you should choose plants that can grow in such conditions and have a beautiful appearance.

There are two main types of green roofs: intensive and extensive. They differ from each other in cost, types of plants and type of use. [3]

Intense roofs represent the garden in the full sense of the word. The assortment of plants for this type is diverse, including deciduous and coniferous shrubs, small trees, places for rest and walks are arranged on the roof. This type of landscaping can be introduced on the roofs of hospitals and clinics in Uzbekistan, as dense urban development does not always allow the creation of full green spaces for the recovery of patients.

With extensive gardening, only plants that withstand adverse conditions, such as sedums, saxifrages, and simply lawn herbs, are used. People are not supposed to have access to such a roof for

recreation, and movement is only possible on special paths. Such landscaping does not require special care. In Uzbekistan, this type of landscaping can be widely used in the improvement of industrial enterprises, garage complexes and trade enterprises.

The main difficulties in creating roof gardens are the destructive power of the measles system and wind loads, so the design of the roof garden is quite complicated. It usually has several insulating layers, additional windproof devices and a special irrigation system. The soil layer for plants should be 30-40 cm, to create a lawn - 15 cm. New technologies for arranging "green roofs" include a whole range of construction works. This is a solution to waterproofing issues, a drainage layer device with the necessary filtration. Depending on the specific conditions, the composition and number of the multi-layer “cake” of the green roof - garden cover can vary within the widest limits, each time meeting a specific task.

## CONCLUSION

My opinion and proposal, so why in Uzbekistan we cannot introduce the same “green roof” law for private construction companies built in commercial zones, in new buildings, design institutes when they project all classes of buildings. Especially, on the roofs of hospitals and polyclinics of Uzbekistan, as dense urban development does not always allow creating full green spaces for the recovery of patients.

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## EMPLOYEE WELFARE PRACTICES AT INDIAN BATTERY INDUSTRY: AN EMPIRICAL STUDY

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### ABC BATTERIES INDIA LTD

ABC Batteries India Limited is one of the world class batteries manufacturing company established in the year 1985 and competing the global standards and competition in producing and marketing of batteries. It is the firm opinion of the 'ABC' Batteries Company that the standardization of quality of life by way of establishing the institution can extend evergreen accessibility to enhanced prospects and advantages to the mankind. By introducing the advanced engineering technology and scientific research, the 'ABC' Batteries Company has entered into MOUs with global companies and making partnership ventures with world class leaders for want of transfer and sharing of technology and proficiency.

After establishing the industry as a private one subsequently in the year 1990 the industry was converted as public limited industry. The ABC Batteries Company has entered into MOU with an international industry of USA on partnership basis with a partnership percentage of 22.

### IMPORTANCE OF EMPLOYEE WELFARE IN BATTERY INDUSTRY

The concept of employee welfare would enhance the social behaviour of the employees in day to day corporate life in escorting the employees/workers from all kinds of humiliations such as (i) victimization; (ii) aggravation; and (iii) mobbing and so on. The workers/employees would expect to work in hassle free environment. Several researchers have carried out several studies in this area. But none of the studies have filled the fulfilled research gap in this area. In order to fill this gap in this area of research, this study is taken up to measure the degree of the involvement of the employer in implementing employee welfare.

Besides, the concept of employee welfare will also focus on how the organisations perceive their productive and non-productive tenures of experiences and their beliefs with their unions. This study also examines, whether the unions performing their organisations and whether the organisations are implementing the employee welfare programmes in the battery industry in accordance with the employee welfare provisions laid down in EMPLOYEES WELFARE ACT of the Government of India.

In the recent times, there has been a regeneration of importance in the employee welfare repercussions of contraption. Hence, the need of the hour is that the nature of relationship where the employee welfare programmes that the organization should implement for the benefit of their employees/workers. Securing highest salaries/wages for the employees/workers and safeguarding of the job security and extent of protection for the employees/workers should be the vital aspects of motto lies behind the practices employee welfare. <sup>(1)</sup>

The degree of the implementation of employee welfare programmes of any industry will play an enormous role in achieving its production targets. The battery industry has no exception for this. The full pledged co-operation and efforts of the employees/workers can be expected only when all the eligible employee welfare programmes are adopted for implementation intoto. Otherwise the organisations cannot think of achieving production targets<sup>(2)</sup>.

It is obviously apparent that the concept of employee welfare and the is the vital parameter in the organisations to extract the maximum productivity from the employees. Recently, it is realized from the preceding decade that the sufficient welfare facilities are scientifically accomplishing inclination of the employees towards their job responsibility and



eventually the about rate of employee turnover would be reduced in the organisations to the most extent. Even though, the number of welfare facilities are offered by the organisations for the employees, certain interruptions have been observed during the course of productivity. In order to identify the specific reasons for the coercive methods the researcher intentionally taken up this research work to dig out the authentic reasons for this course<sup>(3)</sup>

It is realized that the various welfare programmes extended by the organisations will immediate influence towards the productivity, psychological capability, physical health, foresight, attitude ad all round adoptability of the employees for the circumstances for achieving larger productivity. Further the prime purpose of the trade unionism is to augment the lives and careers of employees to extend them happiness and encouragement.

Anjugam et al (2007), specified that the social reluctance, and the marginal farm house holders join larger in the welfare schemes of self-help groups. Through this investigation it is found the rural self-help groups were operating cooperative milk dairies and dairy farms which include number of welfare programmes which will be useful for the rural masses. Author noticed that there is a huge gap of entrepreneurial skill sets among the members of the .self-help groups.<sup>(4)</sup>

PoonamSalaria, SumitSalaria,(2013), In this study the authors underlined that the employees in automobile industry are quite dissatisfied with the extramural welfare measures and on the flip side they are satisfied with intramural. However, the researcher noticed that the employees of the automobile sector have blended perception towards the welfare practices. Automobile industry is providing voluntary welfare services to their employees, which includes both intramural and extramural. Through this study the authors recommended that the employees are the crux for any organization, so that there should be given due importance in extending welfare measures.<sup>(5)</sup>

Tripathi(2013), in his study the author identified that the rural self-help groups have more potential to kick start their entrepreneurial journey in the space of diary and a allied activities inclusive of more number of welfare practices. Through this investigation it is found that the rural self-help groups were operating cooperative milk federation implementing number of welfare programmes for the welfare of dairy workers. The author noticed that there is a huge gap of entrepreneurial skill sets among the members of the .self-help groups.<sup>(6)</sup>

Purushothaman. G, Manjulapurushothaman. V and Krishnamurthy.K, (2014), In this research study they have recommended that there is deadly need of improving welfare practices in NEYCER INDIA LIMITED. It was noticed that the organizations not providing welfare practices and

safety measures to the employees. It is going to imply negative attitude of the employer towards the employees, researchers who are advocated to the management of the organization to strengthen welfare and workplace safety of the employees. Otherwise it is going to hinge on the progress of the organization.<sup>(7)</sup>

Dr.UshaTiwari (2014), the author has carried out this study on the employee welfare facilities and its effect on the employees effectiveness of vindha telelinks ltd. The author observed that 66 percent of the employees are satisfied and this study triggers that the management have to much more focus on employee welfare schemes efficiency, till where it will impact on the quality of the work and efficiency of the work. It enhances the employee satisfaction levels and is going to impact on the overall performance of the employees. Hence, the author advised the organization to reframe the existing welfare measures of the scheme.<sup>(8)</sup>

Vikram Sing hand and RewariSandeepAggarwal (2014) in their study published in Journal of Commerce, Business and Management connects that the State governments safeguards the interest of employees and improves the working environment, equipment's of the employees through the labor legislation institutions. Socio economical parameters enrich the human issues in relation to an industry. However, there are certain problems with the labor laws which are not fullfledgedly implemented by the employer. The bottom line of the study implies that even the workers were aware about the provisions of the factories Act. However, the employers are not employing for the welfare of the workers in most of the organizations in Haryana. Moreover, this study brought that the implication of awareness of employees welfare provisions completely rely upon the socio- economic environment of the industry.<sup>(9)</sup>

## SCOPE OF THE STUDY

The scope of this study is confined to the employee welfare programmes of 'ABC' battery company only. The outcomes of this study cannot be comparable to any other similar industry or organisation.

## OBJECTIVES OF THE STUDY

The distinct objectives of the study are:

- i. To investigate the breathing tendencies of employee welfare programmes in ABC batteries industry;
- ii. To assess the level of satisfaction/dissatisfaction of employees/workers towards in breathing tendencies of employee welfare programmes in 'ABC' Batteries Company;



- iii. To scrutinise the reasons for the dissatisfaction of employee/worker respondents towards the breathing tendencies of employee welfare programmes in 'ABC' Batteries Company; and
- iv. To furnish the acceptable counter measures to flatten the dissatisfaction prevailed among the employee/workers towards the breathing tendencies of employee welfare programmes in 'ABC' Batteries Company.

4. Improper safety welfare measures are prevailed in the organization. Proper uniform as prescribed in the standing orders and high quality safety shoes are not supplied by the organization. The margin of space between one worker and other worker is also flimsy and hence the circulation of free air is blocked (38.00%).
5. The impact of present employee welfare schemes on the productivity of the organization is insignificant and playing non-imperative role on the efficiency of the employees and as well as on the organization (36.00%).

## RESEARCH METHODOLOGY

The methodology consists of data collection from primary as well as secondary sources. Through the survey method the first hand information was collected from 50 sample respondents from the study unit.

## SAMPLE DESIGN AND SIZE

A purposive-cum-convenient sampling technique was followed and 50 respondents were chosen as sample respondents from the study unit.

## ANALYSIS OF THE DATA

The information collected from the respondents was processed and tabulated scientifically and several statistical tools like (i) Independent sample t-test; (ii) Weighted mean scores; (iii) 'ANOVA' are calculated at appropriate levels and the inferences were drawn.

## THE LIMITATIONS

1. The study is confined to only one battery industry located in India;
2. The size of the sample is 50 only where the number is meagre.
- 3.

## RESEARCH FINDINGS

1. The present employee welfare programmes are not at all augmenting the performance of employees and the employees are not able to undertake and monitor the job responsibilities in an organized manner. Further, the employees also are not able to possess the required skills for self-motivation and for team work (56.00%).
2. The present employee welfare programmes are negatively influencing towards the performance of employees which weakens the total productive activity of the organization (52.00%).
3. The present schemes of employee welfare are not accomplishing the societal needs of the employees and hence the productivity of the organization is not at all increased (44.00%).

## SUGGESTIONS

1. It is proposed to design the employee welfare programmes on more rational and scientific lines which can be useful to augment the employee's performance suited to their present profession. The proposed welfare programmes should make the employees self-reliant and should be capable of independently monitor their job-responsibilities and possess the skills which can be useful for self-motivation of the employees to actively participate into their job responsibilities.
2. The proposed employee welfare programmes should positively motivate the employees towards their performance and in turn such positive motivation should make the workers to put their sustained efforts for maximizing the productivity and profits.
3. While designing the employee welfare programmes, the professional ethics of the employees should be taught to them which can be useful for them to discharge their corporate social responsibilities. So that the social needs of the can be recognized and fulfilled by the organization and the productivity of the organization can be enhanced.
4. Proper and scientific measures such i) fixing of fire-exchequers; ii) distribution of safety shoes and gloves; iii) distribution of prescribed uniform; and iv) distribution of high quality safety shoes should be implemented with immediate effect. Further, a technical space committee consisting of a space engineer and H.R. manager should frequently visit the plant and arrange the space gap between one work and another worker at least one meter in the operational area of the plant for want of circulation of the free air in the working area of the plant.
5. While preparing the new employee welfare programmes certain internal connection should be incorporated between the



proposed welfare programme and increase of the productivity of the organization. So that when the proposed employee welfare programmes are conferred on the employees, automatically the productivity of the organization would also be increased and the imperative role can be played by the organization towards the efficiency of the employees.

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## PASSING OFF AND INFRINGEMENT OF TRADEMARKS IN INDIA

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### ABSTRACT

*This paper discusses the principles of passing off and infringement action under the Trademarks Act, 1999. Trademark infringement means that when a person uses another person or company's trademark without the permission of the owner. It is illegal in a way to promote their goods and services and keep the customers in deception. And Passing off means that when a person sells his goods as the goods of another. Then the owner can bring the action against the person. Now there is interesting thing and that is when a trademark is registered, then there is a case of infringement. And when the trademark is not registered then there is a case of passing off. It provides for what acts constitute passing off and infringement of trademarks, what are the remedies available, who can sue and be sued and the defences available in case of trademark violation. The paper also discusses the factors to be considered in case of passing off and infringement action along with different judicial pronouncements given by Indian Courts. Those who have not registered trade mark can also stop the other person to use the identical or similar trade mark by the Doctrine of Passing Off. This doctrine is based on the principle that no one has right to represent one's goods as the goods of other. To get the remedy of passing off the plaintiff has to prove that he is the owner of the mark, and the same has gained reputation and goodwill and misrepresentation has been done by the defendant due to which the plaintiff has suffered huge damages. This article deals with the concept of the passing off, the main elements that constitutes passing off, evolution of law of passing, difference of it with the infringement and the role of judiciary to uphold the concept of passing off. Though the person who has not registered the trade mark get the rights but these rights are very limited. As to prove the passing off one has to show reputation and goodwill attached to passing off as no criteria or definition is provided in any of the statute. So it becomes cumbersome job for the plaintiff to prove the same and even judiciary takes different approach in different case in relation to passing off.*

**KEYWORDS:-**Passing Off, Infringement, Goodwill, Reputation and Misrepresentation.

### INTRODUCTION

One purpose of a trademark is to provide protection to customers by ensuring that goods and services they purchase are actually manufactured or provided by the companies associated with the marks. By granting trademark owners the exclusive right to use certain marks to identify their goods and services, trademark law allows a firm to distinguish its products and services from that of other firms. This is a method of branding. The value of a trademark to its owner is dependent on a number of factors, such as the size of the market created for the branded product, as well as the novelty or uniqueness of the mark itself. A trademark in relation to goods conveys to the general public and specifically to the consumers about the origin and quality of those goods, thereby acquiring reputation in the course of business and time. Therefore the concept of a trademark is the foundation of one's business to

distinguish from others. A good trademark is often the best salesman of the goods and is a visual symbol of goodwill and stamp of quality. Every businessman who has spent considerable amount of money making his mark popular will try to secure it from usage by unscrupulous competitors. Protection of trademark is important not only from the business point of view but also for the protection of consumer from fraud and imposition. The Trademark Act of 1999, both in letter and spirit, lays down that, while it encourages fair trade in every way and aims to foster and not to hamper competition, it also provides that no one, especially a trader, is justified in damaging or jeopardizing another's business by fraud, deceit, trickery or unfair methods of any sort. This necessary precludes the trading by one dealer upon the good name and reputation built up by another. The first Trademark legislation was enacted in India in 1940, but before that, protection to trademarks in the



country was governed by the principles of common law based on English cases. The law relating to protection of this form of industrial property is intricate and complex. The reputation of a business symbolized by a mark, under common law, can be protected only by an action for Passing off. Registration of a trademark under the Trade Marks Act of 1999 gives statutory rights and slight infringement of it can invite an action for Infringement. However, even the unregistered trademarks are also protected as the Act itself provides that an action of passing off remedy is available for unregistered trademark.

### FRAMEWORK FOR TRADEMARKS

Intellectual property can be protected by patents, copyrights and trademarks. Trademark protection doesn't have a constitutional footing, while patents and copyrights do. State law is the origin of trademarks; Federal trademark protection was passed in 1870, but that particular act was ruled unconstitutional. But in terms of history, the Romans, Greeks and others used different markings to indicate who made items such as pottery or bricks. In the middle Ages, trade guilds employed markings to identify who made a particular product. The 1946 Lanham Act is the basis of the modern U.S. trademark system which spelled out the major requirements for registration and maintenance of ownership. The purpose of trademark law is to prevent confusion in the minds of the consuming public as to the source of a particular good and/or service. The owner of a trademark has spent time and resources marketing goods and services identified by the mark. And the purpose of doing that is to have the mark identified with only those goods and services to the exclusion of other goods and services. In monopolistic competition, trademarks or branding can be very useful as a method to help differentiate close but imperfect substitutes. The trademark holder often must work to prevent others from using the trademark and benefiting from prior use of the trademark. Using someone else's trademark without permission, known as infringement, will likely cause confusion in the minds of the consuming public. It is not necessary to prove actual confusion of unique customers in order to prove trademark infringement. Proving likelihood of confusion in the market satisfies the requirement so that similar marks in physical design could constitute cases of infringement (Besen, 1991).

### PASSING OFF

Passing off action is based on common law principle. The damages claimed for in an action for passing off is "un-liquidated damages". The action against passing off is based on the principle that "a man may not sell his own goods under the pretence

that they are the goods of another man."<sup>1</sup> Similar view has been held in ICC Development (International) Ltd. vs. Arvee Enterprises<sup>2</sup> that "the passing off action depends upon the simple principle that nobody has any right to represent his goods as the goods of somebody else". In a passing off action, the priority in adoption and use of trade mark is superior. Passing off is not defined in the Trademark Act, 1999. It is referred to in Section 27 (2), 134 (1)(c) and 135 of the Act. Section 27 (2) states that the rights of action against any person for passing off as the goods of another person or the remedies in respect thereof are unaffected by the provision of the Act. Section 134 (1) (c) refers to jurisdiction of courts to try suits for passing off arising out of the use of any trademark. Section one 135 specifies the remedies available in respect of passing off arising from the use of a trademark. Passing off cases are often cases of "deliberate and intentional misrepresentation, but it is well settled that fraud is not a necessary element of the right of action and the absence of the intention to deceive is not a defence in an action for passing off though proof of fraudulent intention may materially assist a plaintiff in establishing probability of deception."<sup>3</sup> The concept of passing off which is a form of tort has undergone changes in the course of time. At first it was restricted to the representation of one's goods as those of another. Later, it was extended to business and services. Subsequently, it was further extended to professions and non-trading activities. Now a days, it is applied to many forms of unfair trading and unfair competition where the activities of one person cause damage or injury to the goodwill associated with the activities of another person or group of persons. The law of passing off applies whenever there is the prospect of confusion between marks and getup or where there is the prospect of confusion of identity through the unauthorised use of similar marks or get-up. It is because the main consideration of passing off is whether deception or confusion is likely to arise, passing off can be used to protect any kind of distinctive name, mark, logo or get-up used to identify a company or business as well as products or services.

### ESSENTIALS THAT CONSTITUTE PASSING OFF ACTION

In Reckitt & Colman vs. Borden<sup>4</sup>, their Lordships used the term "classical trinity", for goodwill, misrepresentation and damage, which are the three elements of the tort of passing off.

<sup>1</sup> N. R. Dongre v. Whirlpool Corporation, (1996) 5 SCC 714

<sup>2</sup> 2003 (26) PTC 245 (Del.)

<sup>3</sup> Laxmikant Patel vs. Chetanbhai Shah, 2002 (24) PTC 1 (S.C)

<sup>4</sup> (1990) RPC 341 (HL)



**1. Goodwill:-** the Plaintiff has to establish a goodwill or reputation attached to the goods and services which he supplies, in the mind of the purchasing public by association with the identifying get-up under which his particular goods and services are offered to the public as distinctive specifically of his goods or services.

As Lord Macnaghten has stated: "Goodwill is the benefit and advantage of a good name, reputation, and connection of a business. It is the attractive force which brings in custom. It is the one thing which distinguishes an old established business from the new established business at its first start. The goodwill of a business must emanate from a particular centre or source. However, widely extended or diffused its influence may be, goodwill is nothing unless it has power of attraction sufficient to bring customers home to the source from which it emanates."<sup>5</sup>

Goodwill is thus the benefit and advantage of a name and get-up, and it is the attractive force which brings in business. A passing off action is a remedy for the invasion of a right of property in the business or goodwill likely to be injured by any actionable misrepresentation, not in the name or get-up itself. Goodwill need not be established in the mind of every member of the relevant public, but in a significant section of it.<sup>6</sup> A reputation generated among a very few people will not do. There must be a substantial number of potential customers although not necessarily a majority. The action of passing off lies where there is a real possibility of damage of goodwill to some business or trading activity. Therefore, the plaintiff has to establish a goodwill in his business or his goods or services with which the trade or public will be led to associate the defendant's activities.

In **Deepam Silk International vs. Deepam Silks**,<sup>7</sup> while granting an order of injunction restraining the defendant from using the plaintiff's trademark, the Karnataka High Court observed that "once the plaintiff has shown that he has been doing business for more than a decade with the trade name and that he has not only applied for registration of a trademark nearly a decade back, but also has spent lakhs of rupees on gaining the reputation by spending towards advertisements in almost all medias available, the loss that would be caused to the plaintiff, if another person like the defendant makes use of the same trade name and sells the same goods, cannot be ascertained in terms of money. It is the reputation of the plaintiff's trade name that will be in jeopardy. If the defendant is to sell inferior goods, it will definitely affect the business of the plaintiff and

will give an impression to the buyers of the goods from the defendant that the goods sold by the trade name are not maintaining their quality. Therefore, there is every likelihood of the plaintiff losing its customers and getting its trade name defamed."

Passing-off by the defendant of his goods as the goods of the plaintiff injures the right of property in the plaintiff, that right of property being his right to the goodwill of the business. The law assumes or presumes that if the goodwill of a man's business has been interfered with by the passing off of goods, damage results therefrom. The plaintiff need not wait to show that damage has resulted, he can bring his action as soon as he can prove the passing off; because it is one of the class of cases in which the law presumes that the plaintiff has suffered damage.

**2. Misrepresentation:** the Plaintiff must demonstrate a misrepresentation by the defendant to the public leading or likely to lead the public to believe that the goods or services offered by him are the goods and services of him.

In its classic form the misrepresentation which gives rise to an action of passing off is an implied representation by the defendant that his goods are the goods of the plaintiff. As Lord Diplock explained in *Advocaat* case<sup>8</sup> that:

"Where the plaintiff and defendant were not competing traders in the line of business, a false suggestion by the defendant that their business were connected with each other would damage the reputation and thus the goodwill of plaintiff's business." The basis of passing off action being a false representation by the defendant, it must be proved in each case as a fact that the misrepresentation was made. The use by the defendant in connection of the goods, of the mark, name, or get-up in question must represent such goods to be the goods of the plaintiff, or the goods of the plaintiff of a particular class or quality; and the defendant's use of such mark, name or get-up is calculated to deceive.<sup>9</sup>

**3. Damage:** the plaintiff must demonstrate that he suffered or in a quia timet action, that he is likely to suffer damage by reason of the erroneous belief endangered by the defendant's misrepresentation that the source of the defendant's goods or service is the same as the source of those offered by the plaintiff.<sup>10</sup> In a passing off action, damage is presumed even if there is likelihood of deception.

In *ICC Development (International) Ltd. vs. Arvee Enterprises*<sup>11</sup> and in *Sakalain Meghajee vs. BM House (India) Ltd.*<sup>12</sup>, the Delhi High Court cited

<sup>8</sup> (1979) AC 731, p. 741-742

<sup>9</sup> *Spalding vs. Gamage* (1915) 32 RPC 273

<sup>10</sup> *Law of Trademarks and Geographical Indications*, KC Kailasam, Publication: Wadhwa Nagpur; 2nd Edition, 2005, pg. 343

<sup>11</sup> 2003 (26) PTC 245 (Del.)

<sup>12</sup> 2002 (24) PTC 207 (Del.)

<sup>5</sup> *Commissioners of inland Revenue VS. Muller & Co's Margarine Ltd.*(1901)A,C.217

<sup>6</sup> *Chocosuisse Union des Fabricants Suisses de Chocolat vs. Cadbury Ltd.*, (1999) RPC 826

<sup>7</sup> 1998 (18) PTC 18 Kar.



the case of Erven Warnik Besloten Vennootschap & Anr. Vs. Townend & Sons (Hull) Ltd. & Anr.,<sup>13</sup> wherein the House of Lords identified five characteristics which must be present in order to create a valid cause of action for “passing-off”. The House of Lords held that “passing-off” is:

1. A misrepresentation;
2. Made by a trader in course of business;
3. To prospective customers of his or ultimate consumers of goods or services supplied by him;
4. Which is calculated to injure the business or goodwill of another trader which can reasonably be foreseeable; and
5. Which causes actual damage to a business or goodwill of the trader by whom the action is brought or in a quia time (because he fears or apprehends) action will probably do so.

In Laxmikant V. Patel vs. Chetanbhai Shah,<sup>14</sup> the Hon’ble Supreme Court held the three elements of passing-off action are:-

- a. Reputation of the goods;
- b. Possibility of deception.

### CHARACTERISTICS OF PASSING OFF ACTION

Following characteristics can be attributed to passing off action:-

**a. Proof of fraudulent intent not necessary:** it is not essential that the plaintiff must establish fraud on the part of the defendant in a passing off action. While granting injunction against the defendants using the trademark “Horlioks”, the Delhi High Court held that “the use of the offending mark by the defendants to imitate the plaintiff’s trademark appears to be flagrant and blatant attempt on the part of the defendants to imitate the plaintiff’s trademark with a view to deceive the unwary purchasers and exploit and encash on their goodwill in order to pass off their goods as that of the plaintiff’s. the law does not permit anyone to carry on his business in such a way as would persuade the customers in believing that the goods belonging to someone else are his or are associated therewith. Where there is possibility of confusion in business, an injunction would be granted even though the defendant adopted the name innocently.”<sup>15</sup>

**b. Passing off not limited to goods:** Passing off properly so called is not confined to the case of sale of goods. Passing off also restrains a defendant from trading under a particular name though the defendant trader is not selling the goods.<sup>16</sup> Thus, when a name has become identified, by adoption and

user with a particular trade or manufacture or business, the person who so used or adopted it can obtain the aid of the Court to restrain the use of it by others in such a way as to lead customers or the public to think that the trader business of the person sousing is his trade or business.

**c. Evidence of false representation, but not deception necessary:** false representation made by the defendant, whether expressly or otherwise, must be proved as a matter of fact in each case. Absence of actual deception is not determinative. The ultimate question of whether the deception is likely to cause confusion remains a question of fact for the courts to decide in the light of available evidence.

**d. Plaintiff and defendant need not be in the same field:** in passing off action, it is immaterial whether the plaintiff and the defendant trade in the same field or trade in different products. Remedies in the form injunction was granted in favour of the plaintiff on the basis of an action of passing off even though the plaintiff and defendant were trading in altogether different products.<sup>17</sup>

**e. Prior user to be established:** for inherently distinctive marks, ownership is governed by the priority of use of such marks. The first user in the sale of goods is owner and senior user. In order to succeed, the plaintiff have to establish user of the mark prior in time than the impugned user by the respondents.

### ISSUE IN A PASSING OFF ACTION

The issue in a passing off action may be stated as follows: “would the users of the defendants, either the actual user or the proposed user conceded for the purposes of the action, be likely to lead persons, either members of trade or of the public, to suppose that the defendant’s goods so sold were the product of the plaintiff’s, or that the business concerned in its production was the plaintiff’s or was associated with the plaintiff’s business.”<sup>18</sup>

#### Factors to be considered in case of an action for passing off:-

The Hon’ble Supreme Court in *Cadila Health Care Ltd. Vs. Cadila Pharmaceuticals Ltd.*<sup>19</sup>, held that the following factors to be considered in case of an action for passing off action of an unregistered trademark for deciding the question of deceptive similarity:-

1. The nature of the marks, i.e, whether the marks are word marks or label marks or composite marks, i.e, both words or label works.
2. The degree of resemblance between the marks, phonetically similar and hence similar in idea.

<sup>13</sup> 1979AC 731

<sup>14</sup> 2002(24) PTC 1 (sc)

<sup>15</sup> *Horlicks Ltd. Vs. Bimal Khamrai*, (2003) 26 PTC 241 (Del.)

<sup>16</sup> *6 Sales Affiliates lts. Vs. Le Jean Ltd.*, (1947) 64 RPC 103

<sup>17</sup> *Honda Motors Co. Ltd. Vs. Charanjit Singh*, 2003 (26) PTC 1

<sup>18</sup> *Showerings vs. Bulmer*, (1965) RPC 307

<sup>19</sup> AIR 2001 SC 1952



3. The nature of goods in respect of which they are used as trademarks.
4. The similarity in nature, character and performance of goods of the rival traders.
5. The class of purchasers who are likely to buy the goods bearing the marks they are likely to exercise in purchasing and/or using the goods.
6. The mode of purchasing the goods or placing orders for the goods.
7. Any other surrounding circumstances which may be relevant in the extent of dissimilarity between the competing marks.”

### DEFENCES TO A PASSING OFF ACTION

In a suit for passing off, apart from denying the plaintiff's allegations generally, the defendant may be able to plead the following in defence in his case:-

1. The defendant may prove that the plaintiff's business is either fraudulent or forbidden by law. If any particular business could be shown to be a fraudulent business or one forbidden by law or one which the public policy of law was to prevent, then in those cases the proprietor cannot claim protection of the court.<sup>20</sup> For example, if a trader who sells through street markets counterfeit versions of sound recordings and DVD's bearing a famous trademark might not be allowed to rely on his sales to maintain a passing off action against another counterfeiter who has come into the market after him.<sup>21</sup>
2. A false representation contained in the mark itself did furnish a defence at law and at equity. Where a trademark is used exclusively in connection with a trade which was itself fraudulent, the fraud in the trade which was itself carried on by the trademark is a defence.<sup>22</sup>
3. The mark complained of is not distinctive of the plaintiff's business and there is no likelihood of passing off by reason of defendant's use of the mark.
4. The plaintiff is guilty of acquiescence, laches, etc. or the defendant has prior used the mark.
5. The defendant's mark represent his own name which he has the right to use. "A man is entitled to carry on his business in his own name so long as he does not do anything more than that to cause confusion

with the business of another, and so long he does it honestly”.<sup>23</sup>

6. The field of activities of the parties are completely different.<sup>24</sup>
7. The defendant claims right of concurrent use of his mark of his mark. Honest and concurrent user of a trademark when established will constitute a defence.<sup>25</sup>
8. The defendant's use of the mark is the bona fide description of the character or quality of goods or services. However, the defence of the name being 'surname' or 'personal name', though available to individuals, is not applicable to a corporate body.<sup>26</sup>
9. Innocent misrepresentation by the defendant also constitutes a valid defence against passing off action. Under Section 135 (3)<sup>27</sup>, where the defendant satisfies the court that he was unaware of the existence and nature of plaintiff's trademark, and that when he became aware he ceased to use the trademark complained of, the Court shall not grant relief by way of damages or an accounts of profit.
10. The defendant is using the Plaintiff's mark by way of a license. Under Section 12 an honest concurrent user would be protected. Under Section 30 (2)(c)(i), a defence is always open that the proprietor of a registered trademark has expressly or impliedly consented to the use of the said trademark by the defendant. This defence, if laid, would need a trial.<sup>28</sup>
11. The defendant may successfully plead and establish that the alleged misrepresentation was made by his employee outside the scope of his authority and contrary to express instructions.<sup>29</sup>
12. Lastly, the defendant may plead that the plaintiff has abandoned his mark and that the defendant has either already moved for rectification of register for removal of mark or proposed to do so. Where a mark is abandoned, it may become common to trade.<sup>30</sup> When abandoned, the mark may be

<sup>20</sup> Newman vs. Pinto, (1887) 4 RPC 508, p.519

<sup>21</sup> Leather cloth Co. Ltd. Vs. American Leather Cloth Co. Ltd., (1865) 11 ER 1435 (HL)

<sup>22</sup> Newton Chambers & Co. Ltd. Vs. Neptune Waterproof Paper Co. Ltd, (1935) 52 RPC 399; p.406

<sup>23</sup> Rodgers vs. Rodgers, (1924) 41 RPC 277

<sup>24</sup> Dunlop vs. Dunlop, (1889) 16 RPC 12

<sup>25</sup> Manoj Plastics vs. Bholu Plastic, (1983) PTC 368

<sup>26</sup> Kirloskar Disedal Recon Ltd. Vs. Kirloskar Proprietors Ltd, AIR 1996 Bom. 149

<sup>27</sup> Trademarks Act, 1999

<sup>28</sup> QRG Enterprises vs. Surendra Electricals, 2005 (30) PTC 471 (Del.)

<sup>29</sup> Boston Marine Patents Company Ltd. Vs. Wheeler & Thomson, (1954) 71 RPC 432

<sup>30</sup> National starch Manufacturing co. Vs Munn's Patent Maizena and starch co. (1894)11



appropriated by another person. The onus is on the defendant to prove abandonment.<sup>31</sup>

## NEW FACET OF PASSING-OFF ACTION

The present Trademarks Act, 1999 which provides protection of trademark in its diverse forms, cases of trade dress does not strictly fall within the statutory definition of “trademark” under Section 2 (1)(zb), because the business or product that enjoys goodwill independent of the brand value enjoyed by the trademark cannot always be included within the protective sweep of the Trademarks Act. This is because of two reasons, firstly, trade dress law is less explicitly set forth in statute law in India. Secondly, the trade dress protection is broader than trademark protection. One of them being that the breadth of trade dress protection is generally perceived to be broader than the conventional protection afforded to trademarks and business name. The reason for this is that packaging and product design cannot be registered for trademark protection, and also the trade dress infringement claim requires the Court to focus on the plaintiff’s entire selling image, rather than the narrower single facet of trademark alone. These elements encompass the manufacturer’s total selling image, unlike trademarks that merely identify and distinguish the manufacturers from the competitors. However, in *Colgate Palmolive & Co. vs. Anchor Health and Beauty Care Pvt. Ltd.*<sup>32</sup>, the Delhi High Court raised the bar of trademark protection available to trade dress of goods and held that similarity of trade dress was an attribute of passing off, and was actionable per se.

## INFRINGEMENT OF A TRADE MARK

Section 27(1) of the Trademarks Act, 1999 provides that a person shall be entitled to initiate legal proceeding to prevent or recover damages for the infringement of a registered trademark. Infringement occurs when someone else uses a trademark that is same as or deceptively similar to registered trademark for the identical or similar goods or services as to cause confusion in the mind of the public. This right of bringing an infringement action against the defendant has been conferred by Section 28 of the Trademarks Act, 1999. Section 28 of the Act provides that the registration of a trademark gives to the proprietor of a registered trademark an exclusive right to use the trademark in relation to the goods and services in respect of which the trademark is registered and to obtain relief in respect of infringement of the trademark. Trademark infringement claims generally involve the issues of likelihood of confusion, deceptive marks, identical marks and dilution of marks. Likelihood of confusion

occurs in situations where consumers are likely to be confused or mislead about marks being used by two parties. The plaintiff must show that because of the similar marks, many consumers are likely to be confused or mislead about the source of the products that bear these marks. Dilution is a trade mark law concept forbidding the use of a famous trade mark in a way that would lessen its uniqueness. In most cases, trade mark dilution involves an unauthorized use of another’s trade mark on products that do not compete with, and have little connection with, those of the trade mark owner. For example, a famous trade mark used by one company to refer to hair care products, might be diluted if another company began using a similar mark to refer to breakfast cereals or spark plugs.

## What constitutes Infringement?

Section 29 of the Trademarks Act, 1999 deals with infringement. In this context, the ingredients of Section 29 (1) are as follows:-

1. The plaintiff’s mark is registered.
2. The defendant’s mark is identical with, or deceptively similar to plaintiff’s registered mark;
3. The defendant has taken any essential feature of the mark or has taken the whole of the mark and then made a few additions and alterations.
4. The defendant’s use of the mark is in course of the trade in respect of goods/services covered by the registered trademark.
5. The use of the infringing mark must be printed or usual representation of the marking advertisements, invoices or bills. Any oral use of the trademark is not infringement.
6. The use by the defendant is in such manner as to render the use of the mark likely to be taken as being used as a trademark.
7. The defendant’s use of the mark is not by way of permitted user and accordingly unauthorised infringing use. While the above is the general proposition of law as per Section 29 (1), the various circumstances in which the trademark is infringed are enumerated in sub-sections 29(2) to (9) of Section 29.

## INFRINGEMENT- VARIOUS FACTORS

In *Wockhardt Ltd. Vs. Aristo Pharmaceuticals Ltd.*<sup>32</sup>, Madras High Court, after holding the defendant’s mark “SPASMO-FLEXON” deceptively and phonetically similar to “SPASMO-PROXYVON”, summarised the law as follows:

1. The registered proprietor of a trademark has exclusive right to the use of the trademark in relation to the goods and services in respect of

<sup>31</sup> Noor Illahi Maqbul Illahi vs. R.J Wood & Co., (1928) Lah. 487; AIR 1928 Lah. 924

<sup>32</sup> (1999) PTC 540



- which the trademark is registered and to obtain relief in respect of infringement of the trademark in manner provided by the Act.
- Whether it is deceptively or has become publici juris is a question of fact to be established.
  - When a number of marks, all have a common element, may it be prefix, suffix or root, i.e. essential part or the core of the mark, they come to be associated in the public mind as an indication of the same source, which misleads or causes deception or confusion.
  - It is the common element that has to be identified in an impugned mark and the registered trademark and if such common element is highly distinctive and is not just a description or a commonly used word, the likelihood of deception or confusion would be very much there, despite the fact that it might differ in similarity in certain letters.
  - The nature of the commodity, the class of purchasers, the mode of purchase and other surrounding circumstances must also be taken into consideration.
  - Marks must be looked at from the first impression of a person of average intelligence and imperfect recollection.
  - Marks must be compared as a whole, microscopic examination being impermissible.
  - The broad and salient feature must be considered, for which the marks must not be placed side by side to find out the differences in design.
  - Overall similarity is the touchstone.
  - It is not the colour of the container or the difference of the product, but it is the statutory right to the word that has to weigh.
  - The plaintiff need not in general show prima facie case that is required to be shown must be something more than a case that will avoid the action being struck out as frivolous or vexatious and even if the chance of success at the trial are only twenty percent, the statutory protection is absolutely necessary by way of an injunction in order to prevent confusion or deception arising from similarity of marks.

Following are the instances where the acts constituted infringement of trademark:-

**a. Taking substantial feature of the mark:-** a mark is infringed by another trader, if, even using the whole of it upon or in connection with his goods, he uses one or more of the essential features.

**b. Additions:-** addition of extraneous matter, inconspicuous additions is infringement. If a person incorporates whole or part of a registered Trademark of another, the addition of other or matter would not save him from the charge of infringement.

**c. When a mark is copied:-** if the defendant absolutely copied the mark and made a facsimile representation of it, no further evidence is required.

When the similarities are so close as to make it impossible to suppose that such marks were devised independently of each other, in absence of evidence of common origin, the conclusion that one party copied the mark of another.

**d. Marks likely to cause confusion:** Likelihood of confusion occurs in situations where consumers are likely to be confused or misled about marks being used by two parties. The plaintiff must show that because of the similar marks, many consumers are likely to be confused or misled about the source of the products that bear these marks. Where the visual, aural and conceptual similarities is caused by the defendant's trademark which causes confusion in the minds of the public as to its origin, then the mark is held to be an infringing mark. Furthermore, if the association between the marks causes the public to wrongly believe that the respective goods comes from the same or economically linked undertakings, there is a likelihood of confusion.<sup>33</sup>

**e. Use of reconditioned or second articles:-** the use of plaintiff's mark on reconditioned goods may constitute infringement even if it is clarified that goods are not original but reconditioned.<sup>34</sup>

**f. Printing of labels:-** unauthorised printing of labels of the plaintiff will constitute infringement. Moreover, if a copyright subsists in labels, it will constitute infringement of copyright as well.

**g. Goods manufactured by third party would constitute infringement:-** when the owner of a mark gets the goods manufactured by a third party under a contract, solely for the mark, sale of the goods bearing the mark by such a manufacturer to other person would constitute infringement.

**h. Marks used along with other's mark:-** use of the plaintiff's mark along with the defendant's name even if prominently displayed constitutes infringement.<sup>35</sup>

**i. Similar marks in medicinal products:** when the goods or products involved are medicinal products, confusion of sources or drugs or medicinal preparation caused by similar marks of the defendant would constitute infringement, although similarity in the marks would have been very less.

**j. Marks with international reputation used unauthorisedly:** in case of marks which have acquired international reputation, an action for its protection against un-authorised use will lie even if the owner of the trademark does not have any business activity in India.<sup>36</sup>

<sup>33</sup> Compass Publishing BV vs. Compass Logistics Ltd., (2004) RPC 41

<sup>34</sup> Rolls-Royce vs. Dodd, 1981 FSR 517

<sup>35</sup> Levi vs. Shah (1985) RPC 371

<sup>36</sup> Torrent Pharmaceuticals Ltd. Vs. Wellcome Foundation Ltd. (Guj. H.C) 2001 (2) CTMR 158



### Who can sue for infringement?

The plaintiff in an infringement suit may be either:

1. The proprietor of the registered trademark or his legal successor.
2. A registered user of a trademark subject to a prior notice to the registered proprietor and consequent failure of the registered proprietor to take any action against the infringer.
3. An applicant for registration of a trademark. He can file an infringement suit to protect his right to continue with the suit which will sustain only if his trademark is registered before hearing the suit.
4. Legal heirs of the deceased proprietor of a trademark.
5. Any one of the joint proprietors of a trademark.
6. A foreign proprietor of a trademark registered in India when Infringement occurs in India.

### Who can be sued?

1. The infringer who directly by his action causes infringement or who uses or contemplates or threatens to use a trademark infringing plaintiff's right.
2. The master responsible for his servant's act of infringement. For example, a worker who is engaged in the business of making false labels is a servant of the master who orders the making of such labels. It is the master in such a case who is to be sued.
3. The agents of an infringer.
4. Directors and promoters of a limited company cannot be joined as co-defendants unless they have personally committed or directed infringing acts.

### Jurisdiction:

Suit for infringement or for passing off is to be filed in the court not inferior to a District Court having jurisdiction to try the suit.<sup>37</sup> District Court having jurisdiction includes a District Court within the local limits of whose jurisdiction, at the time of the institution of the suit or other proceedings, the person instituting the suit or other proceedings, or where there are more than one person, any of them who:-

- a. Actually and voluntarily resides;
  - b. or b. Carries on business; or
  - c. works for gain;
- can bring in an action against the defendant.

### Period of Limitation:

Under the Limitation Act, 1963, the period of limitation for filing a suit for infringement of a trademark is three years from the date of infringement. Where the infringement is a continuing one, a new course of action arises every time an infringement occurs. For example, a continued sale of infringing article would give rise to a fresh cause of action.

### Issues in Infringement suits:

The issues that arise in an infringement action are the following:-

- a. Whether the plaintiff is entitled to file a suit; i.e. whether he is proprietor of a registered trademark or a registered.
- b. Whether the use or proposed use of the mark by the defendant is an infringement of the registered trademark.
- c. Whether the defendant has succeeded in establishing one or more of the defences set up by him.
- d. If the plaintiff's succeeds in the suit, what reliefs he is entitled to?
- e. Whether the plaintiff is entitled to any interlocutory relief?
- f. Whether there has been actual instances of deception and confusion amongst the public?

### Evidence in Infringement Actions:

The fact of registration of the plaintiff's mark is to be proved by production of a copy of the entry on the register certified by Registrar and sealed with the Trademark Registry.<sup>38</sup> The certified copy will contain all the entries in the register relating to the mark including the conditions, if any, subject to which a mark is registered. In all legal proceedings relating to a registered trademark, the original registration of a trademark and all subsequent assignments and transmissions will be prima facie evidence of the validity. The plaintiff must establish that the use of the mark complained of comes within the scope of definition of infringement. Where the defendant has absolutely copied the mark and made a facsimile representation of it, no further evidence is required. Where the mark used by the defendant is not identical with the registered trademark, the court has to determine the two marks are deceptively similar. Opinion evidence is not admissible, but statement of witnesses to the effect that they themselves would be deceived are admissible. Evidence as what constitutes the essential feature of the mark is admissible.<sup>39</sup>

### CONCLUSION

Thus, from the above discussion it can be said that protection of trademark is important not only from the business point of view but also for the protection of consumer from fraud and imposition. However, it is beneficial if combined action for infringement and passing off is brought in one suit as incorporating a plea of infringement, if the mark gets registered can always amend the plaint. But in an action for infringement alone the plaintiff may not be allowed to include a fresh cause of passing off in order to save the action. Since the scope of passing off action is wider than an infringement action, if an action fails, there is a chance of other succeeding. As

<sup>37</sup> Section 134 of the Trademarks Act, 1999

<sup>38</sup> Section 137 of the Trademarks Act, 1999

<sup>39</sup> Prem Nath vs. Registrar, AIR 1972 Cal 261





stated in the preamble of the Trademarks Act, 1999, the law provides for a better protection of trademarks, the fact that the trademark law provides protection to trademarks has come out to be a reality. The present Act expressly recognises the common law remedy and thus saves both the registered and unregistered trademarks from being misused.

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# THE EFFECT OF RAILWAY DEVELOPMENT TO THE REGIONAL ECONOMIC GROWTH IN NORTH SUMATERA

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## ABSTRACT

*The aim of this study is to analyze the effect of government spending on rail development, the number of passengers and the volume of goods on the GRDP in the province of North Sumatra. The analytical method used in this research is a descriptive analysis and multiple linear regression analysis utilizing secondary data in 13 districts / cities served by rail lines from 2008 to 2018. The results show that government spending on rail development has a positive and significant impact on GRDP in North Sumatra. The number of train passengers has a positive and significant impact on GRDP in North Sumatra.*

**KEYWORDS:** *Government spending, number of passengers, volume of goods, GRDP*

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## 1. INTRODUCTION

Train is one of the modes of public transportation that has many advantages over other modes of transport. According to Dwiatmoko, 2018, based on the features of the train itself, some of the advantages of this mode of transport compared to other modes of transport on land are as follows:

- a. Train transport is more effective than the usage of fuel. One of the reasons that cause this is that the train has its own route. Many forms of travel, in particular road vehicles, are typically growing from time to time. To a certain point, the rise in the number of cars is greater than the development of highways, and there is an increased chance of traffic, which leads to fuel waste.

- b. The train has its own lane, not sharing with other vehicles, which ensures that the usage of space is comparatively less than most highway vehicles.
- c. The train has a greater carrying capacity for both goods and passengers with fairly fast travel time without any obstacles.
- d. The effect of emissions is comparatively smaller than other modes of transport.

The length of the rail network in North Sumatra is 600.5 km, but works just 394.5 km or 65.7 percent (Directorate General of Railways, 2019), while the length of the road network in North Sumatra is 40.602.86 km (BPS. 2016).

**Table 1**  
**Length of the North Sumatra Railway Network**

<b>Lintas</b>	<b>Panjang (km)</b>	<b>Keterangan</b>
Binjai - Besitang	78,4	Progres Pembangunan
Medan - Binjai	20,9	Operasi
Medan - Belawan	24	Operasi
Medan - Tanjung Balai	179	Operasi
Araskabu - Kualanamu	4,7	Operasi
Tebing - Siantar	48,5	Operasi
Bandar Tinggi - Kuala Tanjung	21,5	Progres Pembangunan
Kisaran - Rantau Prapat	113,9	Operasi
Rantau Prapat - Pondok S5	33	Progres Pembangunan
Seimangkei - Perlanaan	3,5	Operasi
Binjai - Kuala	20,5	Tidak Operasi
Medan -Pancur Batu	19,3	Tidak Operasi
Medan - Batu	14,3	Tidak Operasi
Lubuk Pakam - Petumbukan	19	Tidak Operasi
<b>JUMLAH</b>	<b>600,5</b>	

Source: Directorate General of Railways (2019)

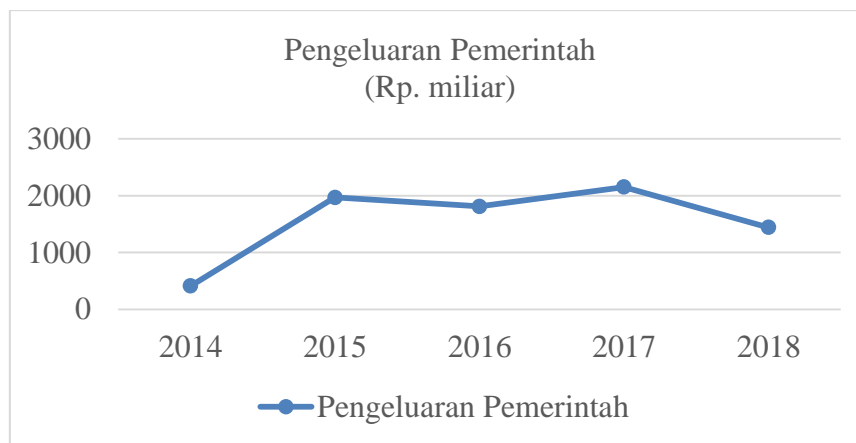
**Table 2**  
**Length of the North Sumatra Road Network**

<b>TINGKAT KEWENANGAN</b>	<b>PANJANG (Km)</b>
Jalan Negara	2.632,22
Jalan Tol	126,40
Jalan Provinsi	3.048,50
Jalan Kabupaten/Kota	34.795,74
<b>Jumlah</b>	<b>40.602,86</b>

Source: Central Statistics Agency (2016)

The development of the North Sumatra Railways continues to improve, as stated in the National Railway Master Plan (RIPNAS) issued by the ministry of Transportation Regulation No 43 of 2011.

The total government spending for the provision and development of rail transport in North Sumatra for the period 2014-2018 as set out in the Directorate-General for Railways DIPA can be seen in Figure 1 below.



Source: Directorate General of Railways (2019)

**Figure 1 Graph of Government Spendings**

From Figure 1 above, it can be seen that a significant increase in government spending on rail development has fluctuated between 2015 and 2018.

According to Dwiatmoko (2019), the development budget and the number of rail assets have a direct effect on the increase in the GRDP, with an increase in the development budget and the number of assets in the rail sector potentially leading to a significant increase in the national economy, characterized by an increase in the value of the GRDP. Putra (2017) state that government spending on infrastructure (roads) has had a significant effect on economic growth in West Kalimantan over the period 2007-2014.

Pujianto (2016) states that the number of rail passenger services in the Surabaya VIII Operational Area is in line with the high overall GRDP of the Regency/City in the VIII Surabaya Operational Area. Kameswara (2017) notes that the movement of passengers, cargo, and the post has a significant effect on the GRDP of the district and city transport sector in Indonesia, namely 95 (ninety-five) airports spread over 95 (ninety-five) districts/cities in Indonesia from 2011 to 2015.

This article discusses the influence of railroad development on GRDP using railroad infrastructure and data which is defined into 4 (four) variables, namely government spending on railroad development represented by the development/increase budget sourced from the APBN obtained from the Directorate General of Railways Ministry of Transportation, a variable number of passengers and variable volume of goods transported using train services obtained from PT. Kereta Api Indonesia (Persero) as well as economic growth variables represented by Gross Regional Domestic Product (GRDP) obtained from the Central Statistics Agency.

### Objective of the study

This study aims to analyze the effect of government spending on railroad development, the number of passengers, and the volume of goods together on the GRDP in North Sumatra Province.

## 2. RESEARCH METHODOLOGY

This research was conducted in North Sumatra Province on the Analysis of the Effect of Railway Development on Regional Economic Growth in North Sumatra. The analytical method used in this research is descriptive analysis and multiple linear regression analysis by taking secondary data in 13 districts/cities that were traversed by the railroad lines from 2008 to 2018 using SPSS Version 25 software.

## 3. LITERATURE REVIEW

Miro (2005) states that transport can be defined as an effort to transfer, transport, or divert an object from one place to another, where it is more useful or beneficial for other purposes. Adisasmita (2012) describes transport as transporting and transferring cargo (goods and people) from one place (place of origin) to another (place of destination). According to Khairindy (2003), transport is the movement of goods and persons from the place of origin to the place of destination. There are several transport elements, which are as follows:

- There's something being transported;
- Availability of vehicles as a conveyance;
- There is a place that can be transported through.

According to Law No. 23, the Year 2007 on Railways, the concept of a railroad is a railroad vehicle with movable control, either on its own or in combination with other railway installations that will or are currently moving on railroad tracks related to rail travel. Railway facilities as provided for in Law No. 23 of 2007 concerning Railways, includes



railroad lines, railway stations, and railway operations.

According to Sirojuzilam and Mahalli (2010), economic growth is a picture of the impact of government policies implemented primarily in the economic sector. Improving people's standard of living through economic growth, in the long run, is the aim of economic development in every country.

Economic growth is usually measured by Gross Domestic Product (GDP) or Gross Regional Domestic Product (GRDP) or overall value-added created in one country. According to the Central Statistics Agency (BPS), Gross Regional Domestic Product (GRDP) is the gross value added of all goods and services that are created or produced in a country's domestic territory arising from various economic activities in a given period regardless of whether the resident's production factors or non-residents

According to Jhingan (2010) in the theory of economic development, there are six characteristics of economic growth, namely:

1. There is a high rate of increase in the production of per capita goods and services to accommodate rapid population growth.
2. The increase in per capita production is mainly due to technological advances and the quality of inputs used.
3. There is a change in the development of the economy from the agricultural sector to the manufacturing and service sectors.
4. Growing numbers of people migrate from rural to urban areas (urbanization).
5. Economic growth is due to the globalization of developed countries and the impact of international relations.
6. The increased flow of goods and capital in international trade.

#### 4. RESULT

**Table 3**

**State Spendings on Railway Development by Regency / City in 2008-2018**

NO	KOTA/KABUPATEN	PENGELUARAN PEMERINTAH (Rp. miliar)										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	MEDAN	22,14	64,50	37,78	6,43	17,83	2,89	81,33	778,75	1.455,84	921,90	342,00
2	DELI SERDANG	1,18	10,06	0,25	0,00	49,42	0,30	109,30	215,69	79,36	3,25	1,08
3	SERDANG BEDAGEI	34,08	0,00	0,25	6,13	0,00	0,00	0,00	0,00	0,00	0,00	0,00
4	TEBING TINGGI	81,40	40,00	0,25	2,04	0,00	0,00	0,00	0,00	0,00	0,00	0,00
5	BATUBARA	0,00	0,00	0,25	10,20	30,38	63,09	185,18	289,59	16,11	212,03	303,92
6	SIMALUNGUN	23,05	0,00	0,00	0,20	0,00	12,66	34,39	62,93	20,00	64,40	42,91
7	ASAHAN	0,00	0,00	22,45	72,01	20,92	0,00	0,00	0,00	0,00	0,00	0,00
8	LABUHAN BATU UTARA	1,15	0,00	2,85	25,33	17,64	0,00	0,00	0,00	0,00	0,00	0,00
9	LABUHAN BATU	0,00	0,00	0,25	0,80	0,00	3,00	0,00	96,00	221,87	328,00	404,91
10	TANJUNG BALAI	0,00	0,00	31,98	4,30	0,00	0,00	0,00	0,00	0,00	0,00	0,00
11	PEMATANG SIANTAR	23,54	0,00	8,82	0,00	0,00	7,23	0,00	0,00	0,00	0,00	0,00
12	BINJAI	0,22	10,42	0,00	0,00	0,00	0,00	0,00	59,10	0,00	56,57	53,74
13	LANGKAT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	487,35	17,64	565,00	293,30
<b>JUMLAH</b>		<b>186,76</b>	<b>124,98</b>	<b>105,13</b>	<b>127,44</b>	<b>136,19</b>	<b>89,17</b>	<b>410,20</b>	<b>1.969,41</b>	<b>1.810,82</b>	<b>2.151,15</b>	<b>1.441,86</b>

Source: Directorate General of Railways 2008-2018 (processed data)

Government spending data for the development of railways in North Sumatra from 2008 to 2018 sourced from DIPA/POK Directorate General of Railways



**Table 4**  
**Number of passengers per district/city in 2008-2018**

NO	KOTA/KABUPATEN	JUMLAH PENUMPANG (Ribu Orang)										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	MEDAN	993,27	1.901,91	1.233,72	1.333,33	1.129,85	1.148,40	1.806,18	1.735,37	1.066,09	2.129,84	2.225,48
2	DELI SERDANG	75,53	72,93	89,77	71,55	82,21	190,94	483,91	423,84	436,34	525,28	525,90
3	SERDANG BEDAGEI	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
4	TEBING TINGGI	50,61	60,74	74,80	67,90	68,56	60,25	111,36	82,85	82,77	130,02	130,66
5	BATUBARA	25,27	25,75	21,71	24,77	29,04	25,55	36,23	55,15	39,20	47,48	50,88
6	SIMALUNGUN	8,73	8,89	10,95	8,04	10,01	8,82	12,35	12,14	9,80	12,84	17,91
7	ASAHAN	159,61	142,25	175,17	210,48	160,43	141,06	228,24	194,08	256,00	340,03	337,02
8	LABUHAN BATU UTARA	31,17	31,70	29,11	35,99	55,82	71,49	45,78	45,33	43,81	64,29	76,89
9	LABUHAN BATU	153,38	156,29	192,45	161,67	176,25	154,97	220,33	215,23	121,55	218,43	247,86
10	TANJUNG BALAI	108,17	110,22	135,73	130,74	124,38	109,29	176,32	150,38	139,38	205,83	221,48
11	PEMATANG SIANTAR	46,65	47,54	58,54	55,38	53,67	47,14	66,72	64,87	67,47	88,43	89,58
12	BENJAI	406,19	414,38	505,89	666,52	486,97	430,39	583,92	584,95	812,53	990,08	1.035,36
13	LANGKAT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
<b>JUMLAH</b>		<b>2.033,80</b>	<b>2.072,34</b>	<b>2.551,84</b>	<b>2.766,10</b>	<b>2.317,66</b>	<b>2.328,46</b>	<b>3.746,24</b>	<b>3.520,19</b>	<b>4.023,14</b>	<b>4.771,16</b>	<b>4.947,59</b>

Source: PT. KAI Divre 1 North Sumatra, 2008-2018 (processed)

Data on the number of train passengers in North Sumatra from 2008 to 2018 sourced from PT. Kereta Api (Persero) Regional Division 1 North Sumatra

**Table 5**  
**Volume of railway goods per district/city in 2008-2018**

NO	KOTA/KABUPATEN	VOLUME BARANG (Milyar Ton)										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	MEDAN	278,80	344,46	312,16	101,40	395,51	305,93	250,59	152,14	200,83	314,17	284,94
2	DELI SERDANG	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
3	SERDANG BEDAGEI	161,80	80,96	84,10	75,80	64,39	37,74	36,51	22,16	3,90	13,00	26,15
4	TEBING TINGGI	51,25	55,78	66,61	24,01	26,37	17,17	7,78	25,39	36,97	17,88	46,80
5	BATUBARA	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
6	SIMALUNGUN	171,75	111,65	92,45	83,74	82,89	85,94	98,12	65,45	79,08	135,72	179,32
7	ASAHAN	158,83	85,37	101,15	75,49	105,19	91,17	81,12	83,38	104,65	107,40	62,24
8	LABUHAN BATU UTARA	68,23	128,40	110,89	24,67	91,97	90,84	97,03	60,33	92,12	82,63	72,32
9	LABUHAN BATU	24,26	182,80	142,84	29,94	67,58	75,30	69,45	80,75	78,67	131,03	144,94
10	TANJUNG BALAI	1,15	2,81	2,38	2,61	1,97	1,32	1,40	1,74	1,50	1,36	1,45
11	PEMATANG SIANTAR	0,80	0,10	0,65	0,71	0,34	0,17	0,00	0,00	0,00	0,19	18,11
12	BENJAI	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
13	LANGKAT	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
<b>JUMLAH</b>		<b>918,95</b>	<b>992,99</b>	<b>916,24</b>	<b>608,43</b>	<b>781,61</b>	<b>666,17</b>	<b>642,09</b>	<b>613,24</b>	<b>665,61</b>	<b>899,24</b>	<b>855,45</b>

Source: PT. KAI Divre 1 North Sumatra, 2008-2018 (processed)

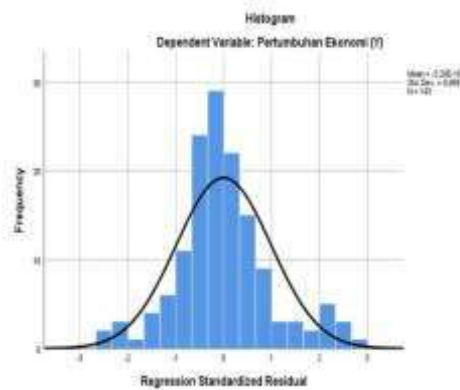
Data on the volume of goods transported by train in North Sumatra from 2008 to 2018 obtained from PT. Kereta Api (Persero) Regional Division 1 North Sumatra

**Table 6**  
**GRDP Based on Constant Prices in Regencies / Cities Traversed by Railway Tracks 2008-2018**

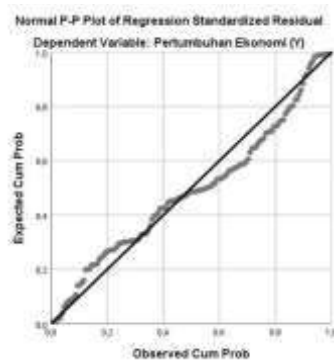
NO	KOTA/KABUPATEN	PERTUMBUHAN EKONOMI (Rp Triliun)										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	MEDAN	31,37	33,43	90,62	97,68	105,16	110,80	117,53	124,27	132,06	139,73	148,01
2	DELI SERDANG	12,98	13,70	43,04	45,26	47,51	51,90	55,79	58,71	61,84	64,99	68,34
3	SERDANG BEDAGEI	4,05	4,29	12,05	12,78	13,56	14,35	15,08	15,84	16,66	17,52	18,42
4	TEBING TINGGI	1,04	1,10	2,46	2,61	2,76	2,92	3,08	3,24	3,40	3,58	3,76
5	BATUBARA	6,77	7,07	16,12	16,95	17,92	18,67	19,46	20,26	21,17	22,03	23,00
6	SIMALUNGUN	5,05	5,30	10,36	11,63	13,06	14,69	21,19	22,30	23,51	24,72	26,00
7	ASAHAN	4,91	5,13	16,08	16,94	17,87	18,89	20,00	21,12	22,30	23,53	24,84
8	LABUHAN BATU UTARA	0,00	2,99	10,57	11,26	11,98	12,73	13,41	14,11	14,84	15,60	16,41
9	LABUHAN BATU	8,34	3,10	14,53	15,36	16,29	17,26	18,17	19,08	20,05	21,05	22,11
10	TANJUNG BALAI	1,28	1,33	3,23	3,48	3,69	3,92	4,15	4,39	4,64	4,90	5,17
11	PEMATANG SIANTAR	1,83	1,93	5,93	6,33	6,75	7,14	7,59	7,99	8,38	8,75	9,17
12	BENJAI	1,79	1,91	4,96	5,24	5,55	5,89	6,23	6,57	6,94	7,31	7,71
13	LANGKAT	6,49	6,82	18,39	19,59	20,86	22,03	23,16	24,32	25,53	26,82	28,17

Source: Central Statistics Agency, 2008-2018 (processed)

GRDP data based on constant prices per Regency/City traversed by rail lines in North Sumatra from 2008 to 2018 collected from the Central Statistics Agency of the North Sumatra Province and the Central Statistics Agency of Regency/City.



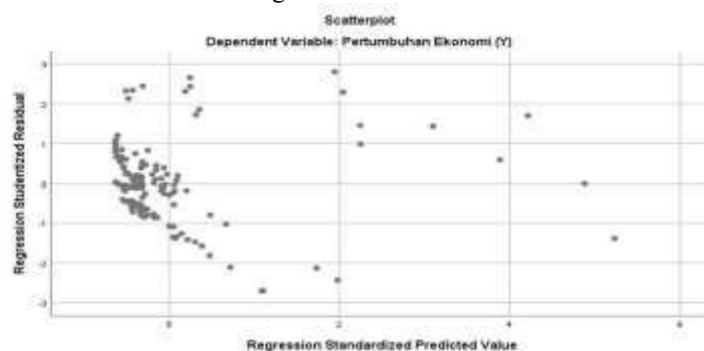
**Figure 2 Histogram Normal Test Results**



**Figure 3 Normal P-P Plot of Regression Graph Standardized Residual**

From the Histogram chart, it forms a bell/mountain, and based on the P-P Normal Plot of Regression Standardized Residual chart is known that the points scattered around the line and follow the diagonal

lines, so it is assumed that the residual values generated from the regression model are normally distributed.



**Figure 4 Scatterplot Chart of Heteroscedasticity Test**

Figure 4 shows that the dots scattered with unclear patterns above and below the number 0 on the Y-axis

that it is assumed that there is no problem with heteroscedasticity in the regression model.

**Table 7**  
**Multicollinearity test results**

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	6,256	1,625		3,851	,000		
	Pengeluaran Pemerintah (X1)	,031	,009	,194	3,592	,000	,712	1,405
	Jumlah Penumpang (X2)	,040	,004	,603	9,163	,000	,481	2,079
	Volume Barang (X3)	,061	,021	,172	2,906	,004	,595	1,660

a. Dependent Variable: Pertumbuhan Ekonomi (Y)

From Table 7 above, it is identified that the VIF value is less than 10 and the Tolerance value is more than 0.1 for the three independent variables (government spending, number of passengers and volume of goods) so that it can be concluded that

there are no issues with the Multicollinearity Regression Model.

**Table 8**  
**Multiple Linear Regression Results**

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	6,256	1,625			3,851	,000
	Pengeluaran Pemerintah (X1)	,031	,009	,194		3,592	,000
	Jumlah Penumpang (X2)	,040	,004	,603		9,163	,000
	Volume Barang (X3)	,061	,021	,172		2,906	,004

a. Dependent Variable: Pertumbuhan Ekonomi (Y)

From table 8 above, the constant value (a) is 6.256. Regression coefficient values  $b_1 = 0.031$ ,  $b_2 = 0.040$  and  $b_3 = 0.061$ .

$$Y = 6,256 + 0,031X_1 + 0,040X_2 + 0,061X_3 \dots\dots\dots(4.2)$$

Where:

- Y = District/City GRDP in North Sumatra (IDR Trillion)
- X<sub>1</sub> = Government Spendings for Railway Development (IDR Billion)
- X<sub>2</sub> = Number of passengers (thousand people)
- X<sub>3</sub> = Volume of goods (thousand tons)

**Hypothesis test**

**Table 9**  
**Output model summary Determination Coefficient Analysis**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,843 <sup>a</sup>	,711	,705	15,62104

a. Predictors: (Constant), Volume Barang (X3), Pengeluaran Pemerintah (X1), Jumlah Penumpang (X2)

Table 9 shows that the adjusted R<sup>2</sup> figure is 0.705 or 70.5 percent. It indicates that the contribution of the independent variable of government spending for the development of railroads, the number of train

passengers, and the amount of rail transport to the District/City GRDP in North Sumatra is 70.5 percent. Or the variation of the independent variable used in



the model can explain 70.5 percent of the variation of the dependent variable.

**Table 10**  
**Hasil Uji F**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	83390,095	3	27796,698	113,913	,000 <sup>b</sup>
	Residual	33918,369	139	244,017		
	Total	117308,465	142			

a. Dependent Variable: Pertumbuhan Ekonomi (Y)

b. Predictors: (Constant), Volume Barang (X3), Pengeluaran Pemerintah (X1), Jumlah Penumpang (X2)

Dari tabel 10 tersebut, untuk nilai signifikansi/probability value (P Value) sebesar 0,000 < 0,05. Sehingga dapat ditarik kesimpulan bahwa pengeluaran pemerintah untuk pengembangan

perkeretaapian, jumlah penumpang kereta api dan volume barang angkutan kereta api secara simultan/bersama berpengaruh terhadap PDRB Kabupaten/Kota di Sumatera Utara.

**Tabel 11**  
**Test Results F**

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6,256	1,625		3,851	,000
	Pengeluaran Pemerintah (X1)	,031	,009	,194	3,592	,000
	Jumlah Penumpang (X2)	,040	,004	,603	9,163	,000
	Volume Barang (X3)	,061	,021	,172	2,906	,004

a. Dependent Variable: Pertumbuhan Ekonomi (Y)

For the significance value / probability value (P Value) of variable government spending (X1) of 0.000 < 0.05, see Table 11. It can, therefore, be concluded that the GRDP of District/City in North Sumatra is partly influenced by government spending on the development of railroads. The T value is positive (3,592), which means that it has a positive effect. Increased government spending on rail development has also increased the Regency / City GRDP in North Sumatra.

The value of significance / probability value (P Value) for the variable number of train passengers (X2) is 0,000 < 0.05. So it can be concluded that the number of train passengers partially influences the Regency / City GRDP in North Sumatra. T value is positive (9,163), meaning that it has a positive effect. Increasing the number of train passengers will also increase the Regency / City GRDP in North Sumatra.

The value of significance/probability value (P Value) for the variable volume of railroad transport goods (X3) is 0.004 < 0.05. So it can be concluded that the volume of railroad transport goods partially

influences the Regency / City GRDP in North Sumatra. T value is positive (2.906), meaning that it has a positive effect. Increasing the volume of railroad transport goods will also increase the District / City GRDP in North Sumatra.

**5. DISCUSSION**

The findings of the study of government spending on the development of rail transport descriptively suggest that the size of the fluctuations has shown a significant increase over the last five years. It is because, over the last five years, the Government has been aggressively working on infrastructure development to improve connectivity, which is expected to minimize logistic costs. Some of the projects in North Sumatra is the construction of the Medan-Kualanamu dual track and the development of the Trans Sumatra Railway.

The findings of the study of the number of train passengers descriptively showed an increase of



3.5 million passengers in 2015 to 4.9 million passengers in 2018 or about 40% in the last 4 years.

The findings of the study of the volume of railroad transport goods have descriptively shown an increase in the volume of railroad transport goods totaling 613.5 thousand tons in 2015 to 835.7 thousand tons in 2018 or about 36.2 percent over the last four years.

The results showed that government spending on the development of railroads, the number of passengers and the volume of goods together had a positive and significant effect on the development of the GRDP District/City of North Sumatra Province, as indicated in the F test results, where the significance/probability value (P Value) was 0.000 (< 0.05).

The results showed that government spending on railroad development had a positive and significant effect on the North Sumatra Province / City GRDP. Such findings indicate that government spending on the development of railroads is considered to be important or substantial as it can have an effect or impact and can not be excluded from issues with the development of the GRDP. Hal tersebut berarti semakin besar pengeluaran pemerintah untuk pengembangan perkeretaapian maka PDRB Kabupaten/Kota Provinsi Sumatera Utara akan semakin naik, begitu pula sebaliknya semakin sedikit pengeluaran pemerintah untuk pengembangan perkeretaapian maka PDRB Kabupaten/Kota Provinsi Sumatera Utara akan semakin menurun.

## 6. CONCLUSION

1. Government spending for railroad development, number of passengers, and volume of goods together have a positive and significant effect on GRDP of North Sumatra Province / City with models/equations of multiple linear regression results:  $Y = 6,256 + 0,031X_1 + 0,040X_2 + 0,061X_3$ .
2. Government spendings for railroad development, number of passengers and volume of goods together have a positive and significant effect on GRDP of Regency / City of North Sumatra Province

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# THE ROLE OF COFFEE COMMODITIES AS A BASE SECTOR FOR REGIONAL DEVELOPMENT IN CENTRAL ACEH REGENCY

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## ABSTRACT

*This study aims to analyze the role of the creation of added value of Arabica coffee to GRDP in Central Aceh Regency. The study was conducted in 2 sub-districts, Bies sub-district and Bebesen sub-district, where samples were taken proportionally to obtain 100 samples of Arabica coffee farmers. To answer these problems, an analysis is used for added value in the form of gross added value and added value of labor and input output analysis using a farm analysis approach. The results showed that the contribution of Arabica coffee farming to the overall GRDP in Central Aceh Regency was 53.41 percent, the workforce was 5.32 percent and the total was 58.73 percent of the GRDP.*

**KEYWORDS:** value added, input output, multiplier effect, GRDP

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## 1. INTRODUCTION

History indicates that the discovery of coffee as a healthy and energy drink was first found by the Ethiopians on the African continent around 3000 years ago (1000 BC). Coffee continues to expand thus far as it has become one of the most popular drinks in the world consumed by various groups of people in Indonesia (Budiman, 2013).

Arabica coffee was grown in the Gayo Highlands about 1924, which was carried by the Dutch after the construction of the road from Birueen to Takengon in 1913. Arabica coffee was first cultivated in the village of Paya Tumpi, and then spread to Blang Gele, Burni Bius, Rediness, Bergendal and Paddy Lampahan, but their cultivation was still restricted to the Dutch people and only a few local aristocrats. Extensive agriculture started just at the beginning of the independence of the Republic of Indonesia in 1945 (Renes, 1989).

The biggest contributor to the GDP of the Agriculture sector in 2018 is the estate crops sub-sector. This sub-sector for the last four years has always been the biggest contributor to the agriculture sector. This is influenced by the existence of coffee

plants as the main commodity of estate crops in Central Aceh District and is the most widely planted, so it requires a lot of labor in each coffee plantation in Central Aceh District.

The largest contributor to the agriculture sector's GDP in 2018 is the sub-sector of agricultural crops. Over the last four years, this sub-sector has also been the largest contributor to the agriculture market. This is motivated by the presence of coffee plants as the key product of agricultural crops in the Central Aceh Regency and is the most widely planted, demanding a lot of labor in each coffee plantation in the Central Aceh Regency.

Coffee plantation development activities, which involve a significant amount of labor and capital for the downstream industry, are expected to stimulate, grow, and create employment and business opportunities. They will have backward linkage through the economic activities that produce the goods and services needed during the coffee plantation process and the development of downstream industries. Other activities will arise as part of this activity, such as construction services, farm labor services, transport services, trade-in food



and clothing, trade-in work equipment, and the materials and supplies required during the process. Post-harvest economic activities and production processes will have linkage forward. The service sector, including transport, coffee shops, cooperatives, banking, trade, small-scale industries in rural areas producing agricultural production packing equipment, is expected to emerge from the forward linkage process.

Gayo Arabica Coffee is a regional superior commodity that dominates smallholder farming in the central Aceh regency, where around 85 percent of the population depends on coffee plantations. In 2018, the coffee plant area of the Central Aceh Regency reached 50,3 thousand hectares, consisting of 42,9 thousand hectares, 4,8 thousand hectares old/damaged, and not 2,4 thousand hectares of coffee bean production rate of 32 thousand tons (BPS, Central Aceh Regency 2018).

Based on the height of the location, Arabica coffee plants are different between plants above 1,200 meters above sea level and plants at altitudes between 600 and 1,200 meters above sea level. In general, coffee planted above 1,200 meters above sea level is of better quality than coffee planted below 1,200 meters above sea level (Fatma 2011). Coffee plants in Central Aceh and Bener Meriah Regencies are intercropped with lamtoro, citrus, and avocado plants as shade plants and are used to avoid erosion.

The Bebesan subdistrict has an area of 47,19 km<sup>2</sup> and is located at an altitude of 1,200-1,500 meters above sea level. Lemah Burbana is divided into 14 villages with the capital city of the Bebesan subdistrict. The North is bordered by the Kebangkitan and Kute Panang Subdistricts, the East is bordered by the Bintang and Lut Tawar subdistricts, the South is bordered by the Pegasing and Lut Tawar subdistricts, the West is bordered by the Pegasing, Bies and Lut Tawar subdistricts.

**Table 1**  
**Land Use based on the Bebesan Subdistrict report 2018**

Land Use	Area in Hectare
Rice field	68,9
Plantation	2150,5
Moorland	116
Grassland	0
Empty land	155
Protected forest	200
Non-agricultural land	1065
<b>Total</b>	<b>3.755,4</b>

Arabica coffee is the primary agricultural commodity in the Bebesan subdistrict. The area of Arabica coffee in the Bebesan subdistrict reached 2,133 hectares in 2018 and produced 1,315 tons. These production decreased by 1,429 tons compared to the previous year. Other commodities are fruit and horticulture.

The industries that thrived in Bebesan Subdistrict in 2018 were 12 agricultural and forestry industries and 227 multi industries. The agriculture

and forestry sector in the Bebesan Subdistrict is a coffee plant in several villages.

The subdistrict of Bies has an area of 28,86 km<sup>2</sup> and is located at an altitude of 1,250 meters above sea level. The capital of the subdistrict of Bies is Atang Jungket. Bies Subdistrict has borders, namely: North of Bebesan subdistrict, East of Pegasing subdistrict, South of Pegasing subdistrict, West of Silih Nara subdistrict.

**Table 2**  
**Land Use based on the Bebesan Subdistrict report 2018**

Land Use	Area in Hectare
Rice field	80
Plantation	150
Moorland	96
Grassland	986
Empty land	449
Protected forest	5
Non-agricultural land	150
<b>Total</b>	<b>400</b>
Rice field	571
Plantation	2.886



In the case of crop production, Bies subdistrict still has the highest production of Arabica coffee, producing 620.6 tons per year in 2018.

This article discusses the role of coffee commodities as a basis for regional development in the form of the value-added effects of multiplier input and output value added in the central Aceh regency.

#### Objective of the study

This study aims to analyze the role of the creation of added value of Arabica coffee to GRDP in Central Aceh Regency

## 2. RESEARCH METHODOLOGY

The study was conducted in Central Aceh Regency which consisted of 14 subdistricts, the area which was used as the research location of Bebesen and Bies subdistricts, the selection of subdistricts was based on the consideration that good management and maintenance of coffee plants, coffee quality, trade management and good cooperative management. Total population of 3,065 Arabica coffee farmers, sampling using the Slovin formula with a fault tolerance of 10 percent or (0.1) it can be counted as many as 96.84 rounded samples to 100 households.

Samples of farmers were taken purposively in selected villages, namely farmers who had planted arabica coffee long enough, 7 villages out of 28 villages in Bebesen sub-district namely Kebet, Blang Gele, Burbiah, Bahgie, Daling, Umang and Lelabu villages and as many as 6 villages from 12 villages in Bies sub-district namely Bies Penantanan, Bies Mulie, Uning Niken, Lenga, Arul Atong, and Pilar villages.

The method used is input-output analysis with a farm business analysis approach, i.e. agricultural business requires inputs, then a comparison is made between the magnitude of such production inputs in rupiah value and their contribution to the GRDP of the Central Aceh Regency.

## 3. LITERATURE REVIEW

In Indonesia, more than 90% of coffee plants are cultivated by smallholders. The implementation of the technologies used is still critical, which is why the production and quality of coffee is poor. To overcome this, the steps that farmers need to take are as follows (Najiyanti, 2008):

1. Develop superior varieties of arabica coffee on the appropriate soil.
2. Replacing old plants with new plants of superior varieties recommended (rejuvenation).
3. Applying the right cultivation techniques, both planting systems, pruning, fertilizing, pest control, plant diseases and shade management.

4. Implement the correct system of harvesting and processing, both the method of reaping, processing, drying, and sorting.

According to Hayami et. al (1987), value-added is the value-added of the commodity due to the functional input applied to the commodities concerned. The functional input is a form utility process, a place utility, and a time utility. Added value shows benefits for labor, modes, assets, and management. The Value Added Analysis aims to calculate the remuneration earned by system actors (processors) and the job opportunities that can be generated by the system. Added value is determined by both technological and non-technical influences (market factors). Technical factors are the quantity and quality of raw materials and accompanying inputs, the quality of the products, the application of technology, the production capacity and the use of labor components. Whereas market factors include the price of raw materials, the selling price of output, labor costs, investment capital, market information and other input values (other than fuel).

Input-output analysis is a comprehensive analysis of the regional economy by looking at the linkages between economic sectors in the region as a whole. Thus, if there is a change in the level of production of a particular sector, the impact on other sectors will be seen. The production function defines the relationship between inputs and outputs or explains the transformation of inputs (resources) to outputs (commodities). Symbolically, the output function can be written as:  $Y = f(X_1, X_2, X_3, \dots, X_n)$ , where Y is the output,  $X_1 \dots X_n$  is the input used for the production of Y (Debertin, 1986; Doll and Orazem, 1984; Saragih, 2012).

In the agricultural sector, Diskin (1997) introduces eight general indicators of agricultural productivity performance, such as yield per hectare, the gap between actual and potential crop yield, harvest variability under different conditions, production value per household, total monthly availability of household food, loss of crop yield during storage, area of land with improved cultivation, and the number of storage facilities built and used. The European Commission (2001) released production efficiency indicators that included: capital productivity, labor productivity, and land productivity. Partial productivity may be in the form of land productivity (output/ha), labor productivity (output/labor), and land labor (farm/labor) ratios. Input typically consists of land, labor, livestock, capital, and fertilizer (Saragih, 2012).

According to Moretti (2010), the multiplier effect can be determined based on consumer tastes, technology and the ability of workers and the income received by the community. The multiplier impact in the economic sector can be seen from the GRDP, the rise in people's wages, the ability to build or open up jobs for the community (Domanski and Gwosdz,



2010). There is also a link between related sectors caused by the increase in demand for production in certain sectors (Tarigan, 2002).

Effective planning requires a systematic framework that identifies the stage for an optimal solution. The process must represent the principles of: systematic, effective, inclusive, informative, integrated, reasonable and transparent (Litman, 2011). Regional planning includes two main aspects, namely spatial planning and space activities related to space development in regional planning and

related to social, cultural, institutional and ecological development planning activities (Tarigan, 2012; Sirodjuzilam and Mahalli, 2010). The main objective of local economic development (LED) is to promote local job opportunities in some sectors to enhance the welfare of the community through the use of human and natural resources. LED is process-oriented by creating new organizations, alternative industries, enhancing workforce capacity, finding new markets, transferring expertise, and retaining new businesses and enterprises (Blakely 1994).

#### 4. RESULT

##### Creation of Coffee Value Added to GRDP in the Central Aceh Regency

**Table 3**  
**Transactions based on input prices at the cooperative/exporter level**

No	Description of activities	Input	Output	Profit	Added Value	Value Added 1 Ton Production
1	New Planting	28.065.000	-	-	1.740.000	8.700.000
2	Farmer Producers	28.587.000	34.320.000	5.732.000	19.412.500	9.174.500
3	Village/Local Trader	44.559.100	78.721.215	34.162.115	30.960.000	13.599.100
4	Cooperative / Exporter	530.373.500	2.759.665.658	2.280.220.808	2.229.292.158	50.928.650
<b>TOTAL</b>		631.584.600	2.872.706.873	2.320.114.923	2.281.404.658	82.402.250

Source: Processed Data

Table 3 shows the total inputs, total output, total profits, total value-added, and the total value added of 1 (one) ton of coffee plant production. From the table above, we can obtain the total value-added

received by coffee firms, both farmers and traders (collectors) in one year is IDR 2.281 million, with a total value-added per 1 ton of IDR 82.40 million.

**Table 4**  
**Value Added Workforce at Farmers Level in Central Aceh Regency 2019 per hectare per year**

Workforce	Total (person)	Length of Work/day (Hours)	Total length of work (hours)
Weeding and Mulching (3 months x 1 times x 2 people)	8	HOK	8
Fertilization (3 months x 1 times x 2 people)	8	HOK	8
Pruning (3 months x 1 times x 2 people)	8	HOK	8
Pest/Disease Control (1 mth x 1 times x1 people)	12	HOK	8
Crop Picker (3 months x 1 times 3 people)	12	HOK	8
Fruit Stripping	3	HOK	8
Post-harvest	5	HOK	8
Drying	2	HOK	8
<b>Length of Work (hours/day)</b>			<b>464</b>
<b>Gross Value Added (IDR)</b>			<b>19.412.500</b>
<b>Value Added Labor (IDR/hours)</b>			<b>41.837,28</b>
<b>Value Added 1 Ton Production (IDR)</b>			<b>14.628</b>

Source: Primary Data (2019)



Table 4 indicates that the amount of employees required in the production of Arabica coffee plantations per hectare is 58 HOK, the length of work is 8 hours a day, and the total working period is 464 hours. The average NTtk is IDR 41,837.28 / JKO. It means that every one hour of

work can provide an added value of IDR 41,837.28, and if it is 1-ton productions, it has an added-value of around IDR 14,628. The value-added of farm labor suggests that the coffee plantation sector contributes to the GRDP in the Central Aceh Regency.

**Table 5**  
**Value Added Labor at Village Traders / Collector Levels in Central Aceh Regency 2019**

Workforce	Total (person)	Length of Work/day (Hours)	Total of length of work (hours)
Coffee Bean Milling	15 HOK	8	120
Coffee Bean Drying	12 HOK	8	96
Coffee Bean Grinding to the Mill	4 HOK	8	32
Labu Drying	12 HOK	8	96
<b>Length of Work (hours/day)</b>			<b>344</b>
<b>Gross Value Added (IDR)</b>			<b>30.960.000</b>
<b>Value Added Labor (IDR/hours)</b>			<b>90.000</b>
<b>Value Added 1 Ton Production (IDR)</b>			<b>17.100</b>

Source: Primary Data (2019)

Table 5 shows that the amount of workers employed in the production of Arabica coffee plantations per hectare is 43 HOK, the length of work is 8 hours per day, and the total working period is 344 hours. The average NTtk is 90,000 IDR / JKO. It means that 90,000 IDRs can be to anyone's hour of

work. And if it is 1 ton of production, it has an added-value of about Rp. 17,100 Value-added labor at the village trader level indicates that the coffee marketing service business is a backward linkage effect and contributes to the GRDP in the Central Aceh Regency.

**Table 6**  
**Value Added Workforce at the Cooperative / Exporter Traders Level in Central Aceh Regency 2019**

Workforce	Total (person)	Length of Work/day (Hours)	Total of length of work (hours)
Coffee Bean Milling	15 HOK	8	120
Coffee beans drying	25 HOK	8	200
Grain Grinding to the Mill	8 HOK	8	64
Drying the output of the mill	25 HOK	8	200
<b>Length of Work (hours/day)</b>			<b>584</b>
<b>Gross Value Added (IDR)</b>			<b>2.229.292.158</b>
<b>Value Added Labor (IDR/hours)</b>			<b>3.817.281</b>
<b>Value Added 1 Ton Production (IDR)</b>			<b>45.228</b>

Source: Primary Data (2019)

Table 6 shows that the number of workers employed per hectare in Arabica coffee plantations was 73 HOK, the length of work is 8 hours per day, and the total working hours were 584 hours. Average NTtk of IDR 3,817,281 / JKO means that every one hour of work will have an added value of IDR 3,817,281 and have added value for 1 ton of IDR 45,228 output. The magnitude of the added-value of

labor at the subdistrict's trader level indicates that the coffee marketing service sector is the backward linkage effect of the coffee plantations and contributes to the GRDP of the Central Aceh Regency.

**Table 7**  
**GRDP based on constant prices (ADHK) in the Central Aceh Regency 2018.**

Sector	2018	Percentage
<b>1. Agriculture</b>	<b>2.430.451,7</b>	<b>100,00</b>
a. Food plants	781.281,9	32,14
<b>b. Plantation</b>	<b>1.127.111,4</b>	<b>46,37</b>
c. Farming	185.209,6	7,62
d. Forestry	311.128,3	12,80
e. Fishery	25.720,5	1,05
<b>2. Transportation and Communication</b>	<b>389.815,2</b>	<b>100,00</b>
<b>a. Transportation</b>	<b>230.500,8</b>	<b>59,13</b>
Land transportation	227.756,0	98,80
Transportation support services	2.744,8	1,19
<b>b. Information and Communication</b>	<b>159.314,4</b>	<b>40,86</b>
<b>3. Finance, Real Estate &amp; Corporate Services</b>	<b>293.335,8</b>	<b>100,00</b>
a. Finance	104.635,2	35,67
b. Non-bank financial institutions	188.700,6	64,32
<b>GRDP with Oil and Gas</b>	<b>3.503.417,9</b>	
<b>GRDP without Oil and Gas</b>	<b>3.503.417,9</b>	

Source: Central Aceh Regency/ BPS (2018)

Table 7 shows that the agriculture, animal husbandry, forestry, and fisheries sectors were the economic sectors with the highest contribution to the Central Aceh Regency GRDP of 69.37 percent, and the plantation subsector contributed 46.37 percent, food crops 32.14 percent, forestry 12.80 percent, and fisheries 1.07 percent to the agricultural sector. It shows that the plantation sub-sector is the leading sub-sector of the Central Aceh Regency. Other sectors that play a role in plantations are the

transportation and communication sector, the contribution of the transportation subsector by 59.13 percent, and communication by 40.86 percent. Road transportation contributes 98.80 percent, the high contribution of road transportation subsector is due to the fact that there is no alternative transportation other than land transportation. The role (share) of productive activities can be seen from its ability to increase community income and employment in the region.

**Table 8**  
**The role of Arabica Coffee Commodities in the Revenue and Workforce Absorption of the Central Aceh Regency in 2019**

Regional Revenue 2018		
1	Central Aceh Regency GRDP	(IDR million) 3.503.417
2	GRDP Agriculture Sector	(IDR million) 2.430.451
3	GRDP Plantation Sector	(IDR million) 1.127.111
4	The Role of Arabica Coffee	
a.	Farmer Profit	(IDR/ha/year) 38.202
b.	Production Area	(ha) 2.514
c.	Agriculture Revenue (axb)	(IDR/ha/year) 96.039
d.	Workforce Absorption	(IDR/ha/year) 13.920
e.	Total Benefit (c+d)	(IDR/ha/year) 109.959
5	GRDP Share in Central Aceh (e:1)	(%) 3.13
6	Share in Agriculture GRDP (e:2)	(%) 4,52
7	Share in Plantation GRDP (e:3)	(%) 9,75
Workforce Absorption 2018		
8	Central Aceh Regency Level	(orang) 65.414





9	Agriculture Sector Level	(orang)	32.714
10	Plantation Subsector Level	(RT)	18.328
11	Arabica coffee farming level in Bebesan and Bies Subdistricts	(RT)	5.103
The role of arabica coffee			
12	Share at Central Aceh Regency Level (11:8)	(%)	7,76
13	Share at Agriculture Level (11:9)	(%)	15,60
14	Share at Plantation Level (11:10)	(%)	27,84

Source: Primary Data and Statistics of Central Aceh Regency (2019)

Table 8 shows that the Arabica coffee share of farmers in the Central Aceh Regency GRDP of 38.2 million or 3.13 percent, the share of Arabica coffee in the agricultural sector GRDP of 4.52 percent and the share of Arabica coffee in the GRDP of the plantation sub-sector by 9,75 percent. The share of the Arabica coffee farmer (TK) to Bebesan and Bies sub-district on employment is 7.76 percent, the Arabica coffee farmer workforce share to the employment of 15.60 percent to the agricultural sector and workforce share (TK) of Arabica coffee

farming on employment of 27.84 percent of the plantation subsector

The Arabica coffee share shows that the creation of the Central Aceh Regency GRDP is strongly influenced by Arabica coffee, this role demonstrates its ability to increase community income and employment, the role of Arabica coffee in the GRDP of the agricultural sector, regional income, and plantation subsector employment, the agricultural sector and total employment in the Central Aceh regency.

**Table 9**  
**Recapitulation of Arabica Coffee Added Value**

No	Description activity	of Added-Value/Ha/Year	Area/Volume Ha/Ton	Total of Value-added
1	<b>New Planting</b>	<b>1.740.000</b>	<b>1 Ha</b>	<b>8.700.000</b>
2	Farmer Producers	<b>19.412.500</b>	<b>2,86 Ton</b>	<b>9.174.500</b>
3	Village/Local Trader	<b>30.960.000</b>	<b>5,263 Ton</b>	<b>13.599.100</b>
4	<b>Cooperative Exporter</b>	<b>2.229.292.158</b>	<b>84,4 Ton</b>	<b>50.928.650</b>
<b>Total</b>				<b>82.402.250</b>

Source: Processed Data

Table 9 is a recapitulation table of the value-added of Arabica coffee consisting of new planting activities with a total value-added of IDR 8.7 million, producer farmers IDR 9.1 million, village traders

IDR 13.5 million, and cooperatives/exporters IDR 50.2 million. The value of IDR 82.40 million added to the GRDP for Central Aceh Regency.

**Table 10**  
**Recapitulation of Arabica Coffee Employment**

No	Uraian Kegiatan	Number Employment	of Area/Volume Ha/Ton	Total Employment
1	<b>New Planting</b>	<b>29 HOK</b>	<b>1 Ha</b>	<b>29 HOK</b>
2	Farmer Producers	<b>57 HOK</b>	<b>2,86 Ton</b>	<b>57 HOK</b>
3	Village/Local Trader	<b>43 HOK</b>	<b>5,263 Ton</b>	<b>43 HOK</b>
4	<b>Cooperative Exporter</b>	<b>73 HOK</b>	<b>84,4 Ton</b>	<b>73 HOK</b>
<b>TOTAL</b>				<b>202 HOK</b>

Source: Processed Data

Table 10 shows the recapitulation table of Arabica coffee employment starting from new planting 29 HOK, 57 HOK producing farmers, 43

HOK village traders, and 73 HOK cooperatives / exporters so the total employment is 202 HOK. The value added of labor shows that Arabica coffee



farming contributes to the GRDP in Central Aceh Regency.

## 5. CONCLUSION

Based on the results of this study, several conclusions on the role of coffee commodities as a base sector for regional development in the central Aceh regency, as follows:

1. The added value of Arabica coffee plantations contributed 9.75% to the Central Aceh Regency GRDP.
2. Arabica coffee plantation activities absorb or create employment up to 29 working days (HOK) for new plantings, 58 working days (HOK) for producer farmers, 43 working days (HOK) for village traders, while cooperatives/exporters absorb workforce up to 73 working days (HOK) per hectare. The added-value of labor in the Central Aceh District level contributed 7.76%, in the plantation sector contributed 27.8%, this indicates that the coffee plantation sector contributed to the GRDP in Central Aceh Regency.

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# SEMICONDUCTOR CONDUCTIVITY

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## ABSTRACT

*In given article has been expressed solids, free carriers during their motion continuously experience collisions with atoms and ions of impurities and various defects, as a result, free carriers scatter as well.*

**KEY WORDS:** semiconductor, conductivity, source, ion, experience, atoms.

## INTRODUCTION

In solids, free carriers during their motion continuously experience collisions with atoms and ions of impurities and various defects, as a result, free carriers scatter. In the presence of an electric field, uniformly accelerated carrier motion occurs only in the intervals between collisions. After each collision, the free particle begins to accelerate again. During scattering, the energy and direction of motion of the carriers change which is accompanied by the excitation or absorption of phonons. The average velocity of the ordered movement of electrons and holes, directed along the electric field, which is called the drift velocity ( $v_{other}$ ), is proportional to the electric field strength  $E$ :

$$v_{other} = \mu E. \quad (1)$$

The proportionality coefficient between  $\mu$  the drift velocity  $v_{other}$  and the electric field  $E$  is called mobility and has the dimension  $m^2/(V \cdot s)$ .

## METHODS

Due to the difference in the effective masses of the electrons  $m_n$  and holes  $m_p$ , their mobilities can vary greatly. So, for example, in silicon, the mobility of electrons is almost three times greater than the mobility of holes. With greater carrier mobility, the speed of semiconductor devices will be higher. The mobility of carriers in semiconductors depends on many factors, the most important of which are temperature, the concentration of impurities, and also the electric field strength. The dependence of mobility on temperature  $T$  is determined by the scattering of carriers on the sites of the crystal lattice and on impurity ions. When

scattering by impurity ions, the temperature dependence of mobility has the form

$$\mu_{ion} = \mu_{0 ion} (T_0/T)^{3/2} \quad (2)$$

If scattering by lattice atoms predominates, then

$$\mu_{реш} = \mu_{0 реш} (T_0/T)^{-a} \quad (3)$$

## RESULTS AND DISCUSSIONS

In formula  $\mu_{ion} = \mu_{0 ion} (T_0/T)^{3/2}$  и  $\mu_{реш} = \mu_{0 реш} (T_0/T)^{-a}$  that  $T_0$ — some initial (initial) temperatures at which the mobility is 0. The exponent “a” depends on the material and the type of conductivity; so, for n-type silicon (p-type)  $a = 2.42$  ( $a = 2.2$ ); respectively, for Ga As  $a = 1$  ( $a = 2.1$ ).

When both of the above carrier scattering processes are taken into account, the expression for mobility has the following form:

$$(1/\mu) = (1/\mu_{ion}) + (1/\mu_{реш}) \quad (4)$$

Carrier scattering from thermal vibrations of the semiconductor crystal lattice mainly dominates at relatively high temperatures and low impurity concentrations. At high temperatures, due to an increase in the amplitude of thermal vibrations of lattice atoms, the frequency of collisions of charge carriers with them increases, which leads to a more intense scattering of them. Thus, with increasing temperature, the mobility of the carriers decreases due to their scattering by the thermal vibrations of the lattice.

Carrier scattering by impurity ions prevails at low temperatures and high impurity concentrations. If the temperature is low, then the thermal velocity of the electron is also small, therefore, when the impurity moves relative to the ion, the electron trajectory changes strongly randomly, which corresponds to larger scattering. With increasing temperature, due to an increase in the speed of electrons, the time of their Coulomb interaction with impurity ions decreases, which leads to less carrier scattering. Thus, upon scattering by impurity ions, the carrier mobility increases with increasing temperature in accordance with the dependence

$$\mu_{\text{ион}} \sim T^{3/2}$$

At constant temperature, the resulting mobility of the carriers substantially depends on the impurity concentration. If it is small, then, as noted above, the main role, as in pure semiconductors, is played by scattering by thermal vibrations of the lattice (phonons), while the mobility is of maximum importance. With an increase in the impurity concentration  $N$ , scattering by impurity ions begins to dominate, as a result of which the carrier mobility decreases (Fig. 1), where  $\mu_n, \mu_p$  – respectively, the mobilities of electrons and holes[1.262]

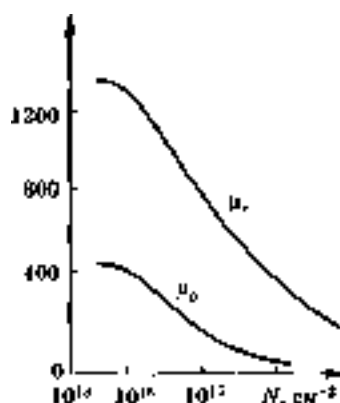


Figure 1

The dependence of mobility on the electric field is ambiguous. In weak electric fields, when the field strength  $E < 10^3 \dots 10^4 \text{ V/cm}$ , the drift velocity turns out to be much lower than the thermal velocity of the electrons. In this case, the field does not significantly affect the scattering of carriers, the mobility does not depend on the value of  $E$ , and the drift velocity  $v_{\text{other}}$ , in accordance with the formula  $v_{\text{other}} = \mu E$ , increases linearly with increasing field strength (Fig. 2). В сильных электрических полях ( $E \geq 10^4 \dots 10^5 \text{ V/cm}$ ) The carrier drift velocity approaches the average thermal velocity, and the average directed electron motion energy becomes sufficient to increase the amplitude of atomic

vibrations at the nodes of the semiconductor crystal lattice, which leads to an increase in the collision frequency and, accordingly, to intensification of the carrier scattering process.

As a result, with increasing  $E$ , the carrier mobility decreases at a constant drift velocity (see Fig. 2) [2.25]. In gallium arsenide, the dependence of mobility is more complicated compared to  $\text{Si}$  and  $\text{Ge}$ , which is associated with the features of the conduction band. These features are analyzed in the following chapters when considering processes in some types of optoelectronic devices and lasers, as well as Gunn diodes.

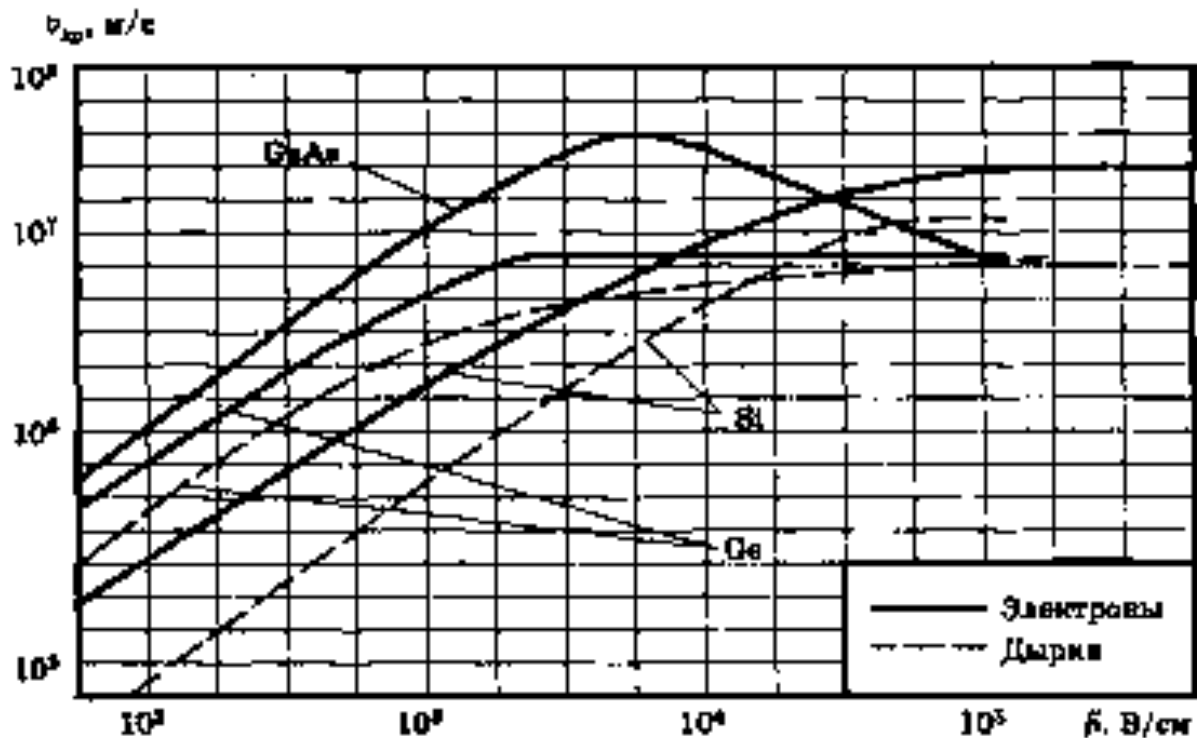


Figure 2.

Knowing the specifics of the behavior of mobility and concentration depending on various physical and electrophysical conditions, one can analyze such an important parameter as the electrical conductivity of semiconductors. According to Ohm's generalized law, the density of the drift current  $j_{dr}$  flowing through the medium, the field strength  $E$  and the electrical conductivity of the medium are related by the ratio  $j_{dr} = E$ . The density of the drift current depending on the charge carrier concentration and their drift velocity  $v_{dr}$  is  $j_{dr} = qNv_{dr}$  where  $q$  is the particle discharge,  $N$  is the concentration of particles of a certain type.

For electrons,  $N = n$ , and for holes,  $N = p$ . If there are charges of both types in a semiconductor, the current density will be determined by the sum of the currents of positive and negative charges, that is,

$$j_{др} = q(n v_{др,n} + p v_{др,p})$$

Where  $v_{dr} n$ ,  $v_{dr} p$  are the drift velocity of electrons and holes, respectively. From this relation and the generalized Ohm's law, taking into account the formula  $n \cdot p = n_i^2$ , it follows that the electrical conductivity of semiconductors can be written in the following form:

$$\sigma = q(n \mu_n + p \mu_p) \quad (5)$$

Knowing the temperature characteristics of the concentration and mobility of free carriers, the experimental temperature dependence can be explained. For n-type impurity semiconductors based on Ge and Si, these dependences are shown in Fig. 3. [2.26]

At temperatures  $T > T_{max}$ , the electrical conductivity is determined by the product of the concentration and mobility of the native carriers, and with increasing  $T$ , the carrier mobility decreases, and the concentration increases exponentially. The decrease in mobility ( $\mu$ ) in this region of temperature change is much weaker than the increase in the concentration  $n(T)$ . As a result, at  $T > T_{max}$ , the semiconductor's electrical conductivity increases with increasing temperature, and on a semi-logarithmic scale the function  $\sigma = f(1/T)$  is almost linear with the slope tangent  $\tan \sim E^3$ . At temperatures  $T < T_{max}$ , the concentration of intrinsic carriers is low ( $n_i \ll N_d, N_a$ ) and the conductivity is mainly determined by the concentration of impurity carriers.

So, for example, in a donor semiconductor at temperatures characteristic of the area of operation of most semiconductor devices, when all impurity atoms are ionized, the electrical conductivity is

$$\sigma = qn\mu_n = qN_d\mu_n$$

## CONCLUSION

In this section of the change in the function  $\sigma = f(1/T)$  (see Fig. 3), a slight decrease in the electrical conductivity of impurity semiconductors with increasing temperature is associated only with a decrease in the carrier mobility at their almost constant concentration.

In Ge, the dependence of carrier mobility on temperature is weaker than in Si, and the value in Ge is greater than in Si. This is illustrated by fig. 3,



where the dependences  $= f(1/T)$  are shown for two different concentrations of  $ND$  impurity in  $Si$  and  $Ge$ .

### List of main used is marked

$\sigma$ - Electrical conductivity

$\rho$ - Resistivity

$\Delta E_g$ - semiconductor band gap

$V_{other}$ - drift velocity and saturation drift velocity

$\mu$ - Carrier mobility

$N_d, N_a$ - atom concentration of donors and acceptors

$j_{dp}$ - electron and hole current density

$E$ - electric field strength

$\mu_n, \mu_p$ - carriers

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# FROM THE HISTORY OF ANCIENT MEMORIES IN UZBEKISTAN (AS AN EXAMPLE 60-70 OF XX CENTURY)

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## ABSTRACT

*In this article has been expressed condition of ancient material culture memorials in Uzbekistan during the 1960-1970s of Soviet government and also their guarding processes by the helping archive materials and historical literatures as well. In this research investigated that in the 1960s ideas was introduced into the socio-political life. Besides, author showed that the memorial museum has exhibited photos, photographs, historical sites, industrial enterprises, which reflect the biography and activities of the statesman, over 90,000 visitors visited the museum during this time, with over 300 thematic tours, since the 1960s, museums in Uzbekistan have laid the groundwork for new methods of mass cultural work. In particular, on the basis of the Museum of the History of Peoples of Uzbekistan a “traveling museum” was established, its employees visited the state, collective farms and also showed the audience the unique treasures and material resources of the museum, valuable exhibits and revolutionary monuments.*

**KEY WORDS:** *Material culture memorials, Historical museum, historical literatures, culture, expedition, ethnographical branch, ideology, exposition, Uzbekistan.*

## 1. INTRODUCTION

It is well-known that in the 1960s, the idea of artificial “advanced socialism” was introduced into the socio-political life of the Soviet society. This, in turn, did not bypass the cultural sphere, and at the same time this idea was applied to the spiritual and cultural life of Uzbekistan. At that time, the principles of freedom inherent in culture and an important factor in its development were also completely eliminated. However, the cultural sphere continued to evolve to a certain extent, despite all the ideological pressures and molding. At that time, the preservation and protection of the material and cultural monuments was provided by museums, which are cultural institutions. The National Museum of History, which operates in the country, has organized special expeditions to study historical periods from 1959 onwards. In particular, he focused on collecting materials in industry, agriculture, science and culture [1], [37]. The main basis for carrying out scientific researches and research in the museum are the monuments and treasures kept in its funds. For this reason, the museum has focused on

working on funds. In 1959-1961 the museum made a complete registration and its collections were divided into archeology, numismatics, ethnology, souvenirs, scientific archives. For example, the museum had more than 25,000 archeological exhibits, 30,000 coins and medals, about 12,000 ethnographic items and 1,200 artifacts [2], [71]. Also, in 1960-1961, exhibits of the museum were enriched with musical instruments of Tashkent, Pskent embroidery, Soviet-era clothing. At the same time, a special expedition to Surkhandarya region was organized to examine the lifestyles of community members. During this expedition numerous samples of their home appliances and weapons were found.

It is important to note that in 1960-1961 over 5,000 newly discovered exhibits were presented to the museum. In 1962, the museum departments were given more than 4,000 additional exhibits. The number of rare exhibits collected during expeditions organized by the academician M.Andreev in the ethnology department of the museum increased [3], [46]. Among the exhibits are ceramics made in Rishtan, Kokand, Isfara and Chust, which made a



great impression on visitors. On June 27, 1962, the Ministry of Culture of the UzSSR allocated 34,000,000 rubles to the Main Department for the Preservation of Material Cultural Monuments and Museums for the reconstruction and consolidation of historical and cultural monuments [4], [24]. At the same time, these funds were used to equip the museums with technical equipment and to organize transport services in cultural institutions.

## 2. METHODS

In the 1960s, as a result of the expansion of atheistic propaganda by the Soviet government, religious sites were stamped on the Birdamlik main sanctuary in Andizhan, and at the initiative of the city executive committee, the place was demolished with bulldozers and excavators [5], [103]. Thus, this long-serving and near-town shrine for the population of Andizhan region was destroyed during the Soviet era. During these years of Soviet rule, memorial museums reflecting the activities of historical figures and statesmen were established. In particular, by the decision of the Council of Ministers of the UzSSR on October 17, 1964, a memorial museum dedicated to Yuldash Ahunboboev was opened in Margilan, Ferghana region [6], [35]. The memorial museum has exhibited photos, photographs, historical sites, industrial enterprises, which reflect the biography and activities of the statesman. For example, over 90,000 visitors visited the museum during this time, with over 300 thematic tours. Since the 1960s, museums in Uzbekistan have laid the groundwork for new methods of mass cultural work. In particular, on the basis of the Museum of the History of Peoples of Uzbekistan a "traveling museum" was established, its employees visited the state, collective farms, and showed the audience the unique treasures and material resources of the museum, valuable exhibits and revolutionary monuments [7], [28]. In 1962-1964, the Museum of History of the People of Uzbekistan produced 19 traveling and permanent museum exhibitions. Also, in connection with the 40<sup>th</sup> anniversary of the establishment of the Uzbek Soviet Socialist Republic, mass-educational work in museums intensified, and the Museum of History of Peoples of Uzbekistan developed a series of lectures based on material items and treasures of the type of monuments of the revolution that are stored in its treasury. In 1964, museum staff gave more than 500 lectures. Taking into account the needs and requirements of amateurs, the museum organized tours of the museum "Tashkent architectural monuments" and "Places related to revolutionary events".

## 3. RESULTS AND DISCUSSIONS

It should be noted that the architecture and art of Uzbekistan during the former Soviet Union came under the influence of alien ideas and were formed on the basis of stereotypes that contradict

Uzbek national values. It was during this time that the centuries-old values of great cultural heritage, spiritual values and national perfection to undermine the national pride were banned. In particular, the heritage and names of the great ancestors, even the sacred places and shrines on which their hills lie, have been destroyed. For example, "Imam Bukhari's mausoleum in Samarkand region during Soviet era shows how badly it looked at our national cultural heritage during the reign of violent ideology when the Kaffol Shoshi mausoleum in Tashkent was converted into a bazaar or Odina mosque in Karshi" [8], [5].

From the second half of the 1960s, special attention was paid to the study of ancient and historical monuments in Samarkand. In particular, the Central Committee of the Communist Party of Uzbekistan adopted a special resolution on July 13, 1966, "On measures for further historical and archeological research of the ancient city of Afrosiab" [9], [33]. According to this resolution, the town was declared a place of archeological excavations, and special measures were taken to protect and preserve it, and to explore the town. At the same time, the decision gave an impetus to the comprehensive study of archeological monuments in the city and to the study of the history and archeology of Afrosiab, one of the largest centers of civilization in Central Asia.

On March 27, 1967 by the decision of the Council of Ministers of the UzSSR "Society for Preservation of Historical and Material Cultural Monuments of the Uzbek SSR" was established [10]. [87]. In a sense, the society aims to organize and preserve the existing monuments in the country. As of January 1, 1969, about 8,000 primary community organizations were established in Uzbekistan, its staff and members visited the ancient cities of Bukhara and Samarkand, Khorezm, Kashkadarya and Andijan regions and assisted local cultural departments.

According to the decision of the Council of Ministers of the Communist Party of Uzbekistan on November 30, 1967 "About preservation, improvement, design and construction of historical and architectural monuments in Khiva", Ichan Kala is considered as Khiva State Architectural Reserve. At the same time, systematic protection, preservation and restoration of historical and artistic architectural monuments in Ichanqala was carried out step by step. In 1969, the Khorezm Regional History Museum and the Ichan Kala Nature Reserve Museum were established. Its functions included the research, scientific and educational establishment and the preservation and protection of state historical, art, literary and artistic monuments. The establishment of the reserve has given impetus to the study of architectural monuments, as well as the study of residential buildings in Ichan Kala.

On May 14, 1968, the Council of Ministers of the Communist Party of Uzbekistan and the





Council of Ministers of the Uzbek SSR adopted a resolution "On measures to further improve cultural and public services and the preservation of historical and architectural monuments in the city"[11], [43]. According to this resolution, the main task is to study, preserve and restore the unique historical monuments, and the State Construction Committee of the UzSSR is tasked with modernizing the city and considering the ancient architectural monuments.

The unique architectural buildings in Bukhara - the epigraphic ornaments of the madrasahs of Abdulazizkhon and Nodir devonbegi, in particular, the madrasahs are decorated with animal figures - legendary birds, deer, dragons. These cultural buildings are mostly rectangular and square shaped, and the new architecture of the Timurid period has a distinctive "kundal" direction in urban architecture [12], [84]. It should be noted that according to the above-mentioned decision, the works on repairing timbers and towers related to monumental architectural monuments in Bukhara were also specified. Most of them were built and owned in the sixteenth century, and they were built in the city center, mainly at the crossroads of caravan routes. Four of the largest trading facilities in Bukhara, namely Taki Zargaron, Toki Telpakfurushon, Toki Sarrafon and Abdullakhan, have been preserved [13], [1], [2]. It should be noted that the term "arc" is used in the sense of "arc" and "dome" and also for large market buildings with a dome roof. They specialize in commerce and architecturally harmonize highways.

On May 15, 1968, at the third session of the Supreme Soviet of the UzSSR, the Law "On the Protection of Cultural Monuments" was adopted, which established measures for the establishment and systematic protection of cultural and historical monuments. At the same time, it is expedient to analyze the implementation of this law in all regions of the country in the historic Samarkand region. Specifically, this year, 54 national-level monuments (including 23 architectural monuments, 30 archeological and 1 art monuments) and 694 local monuments were under state protection in Samarkand [14], [113].

In order to identify and identify cultural monuments in the districts of Samarkand region departments of the Society for the Preservation of Historical and Cultural Monuments of Uzbekistan have been established. In 1968, the working committees of the Samarkand regional and city councils, the Ministry of Culture, and its Main Department for the Preservation of Monuments and Fine Arts conducted activities to investigate and repair world-renowned monuments, such as the Sherdor, Ulugbek, Tillakori madrasahs, Shakhizinda, Gur Emir's tombs. A comprehensive expedition of the Institute of History and Archeology of the Academy of Sciences of the Republic of Uzbekistan, Institute of Art Studies of the Ministry of Culture of

the Republic of Uzbekistan, Tashkent State University (NUU) and SamSU conducted a survey of Afrosiab town. Also, the Arabata Mausoleum in Tim, the Resurrection Wall, and Kumushkontepa were studied in detail. Specialists from a number of cultural institutions in Moscow, Tashkent and Samarkand were involved in these events.

During the first 10 months of 1968, 428,000 rubles were allocated for the reconstruction and protection of cultural monuments in Samarkand, or 80 percent of the total funds allocated for these purposes. In 1968 and 1969, 65 sections of the Society for the Preservation of Historical and Cultural Monuments of Uzbekistan have identified and registered 65 more architectural and historical monuments. The establishment of a tourist bureau in the region has contributed to an increase in the number of visitors to the cultural sites. For example, as a result of the work done by the bureau, only in 1968 and in the last ten months of 1969, cultural monuments were visited by about 150,000 people, including 22,000 foreigners [15], [114].

On January 15, 1970, the Council of Ministers of the Central Committee of the Communist Party of Uzbekistan and the Cabinet of Ministers of the Republic of Uzbekistan adopted a resolution "On the state of sculptural art in the Republic and measures for its further development" [16], [106]. After the adoption of this decision, chairmen of regional societies for the protection of monuments of the republic, city and district Soviet societies were identified and revised their status on the ground. As a result, it was learned that all the historical and revolutionary art monuments were taken into account, most of them were attached to the leading organizations, and the practical implementation of each monument (improvement and small repairs) was practically done. However, the accomplishment and reconstruction of the monuments were not fully implemented in all regions of the country. For example, in Kuva, Akhunboboev, Baghdad and Ferghana districts, where individual monuments are located, landscaping has not been done and no outreach activities have been carried out. At the same time, little attention has been paid to the acceleration and repair of monuments in Kokand and Rishtan districts [17], [380].

In the early 1970s it was discovered that there are more than 400 unique architectural sites in the country. More than 200 historical and revolutionary monuments were erected during the Soviet era. Unique architectural monuments of the country are considered by such international organizations as UNESCO, such as Gur Amir Mausoleum in Samarkand, Bibikhonim Mosque, magnificent Registan Ensemble, Shahizinda Ensemble, and Kalon Ensemble in Bukhara [18], [14].

In 1970, as a result of increasing the effectiveness of Ya.Gulomov's scientific work, a new



Institute of Archeology of the Academy of Sciences of Uzbekistan was opened in Samarkand. This event has contributed to the development of archeological works and development of scientific researches not only in the city of Samarkand, but also in the country. As a result, in many regions archaeological monuments have been opened in a broad planographic manner, a full and complete study of the openings, and on this basis a complete study of ancient buildings, streets, neighborhoods, craft centers and relics. As a result, there was a problem of preserving the buildings in the open space and transforming them into open-air archeological resorts - museums. Expansion of scientific research topics in this regard led to the conversion of the laboratory in 1971 to the special section of the Institute of Archeology of the Academy of Sciences of Uzbekistan, "Chemical-technological research and repair of historical monuments". One of the main tasks of this department is to create methods for the storage of structures made of raw brick, cauldrons and shapes made of clay.

In accordance with the decision of the Central Committee of the Chamber of Commerce of the Republic of Uzbekistan on August 23, 1972, the issues of sculpture development and further development of the art in the republic and the preservation of monuments in the regions, protection of monuments [19], [107]. In addition, the Permanent Commission for the Protection of Natural and Cultural Monuments, in cooperation with the Republican Society for the Preservation of Monuments, has begun the reconstruction of sculpture. These events gave an opportunity to take into account monumental art installations in cities and districts, and these works were sponsored by local organizations. The Society for the Protection of Monuments has issued a series of illustrative posters and more than 20,000 leaflets. The execution of the above resolution was not implemented satisfactorily in all regions of the country. In particular, the sculpture and sculpture of Altyaryk district of Ferghana region and cities of Ferghana were not registered. Not much attention has been paid to the construction of new monuments on the ground, including no one in the past three years in Ahunbabaev district (there are 32 monuments, 15 of which were built in the 1940s and 1950s) [20], [108].

In 1973, the Council of Ministers of the UzSSR approved a list of 10 ancient cities in order to improve the protection, restoration and repair of cultural heritage in the country and emphasized the need for their protection [21], [3], [4]. The list also focuses on the protection of rare architectural ensembles and monumental monuments in Kokand. In the Ferghana Valley, only a few 19th-century architectural monuments of Andizhan, Namangan and Kokand were under state protection, and shortly thereafter, more than 100 monuments of the 16th-19th-century Ferghana architectural art were located

in various districts of the valley. At the same time, on December 21, 1973, 81 cultural monuments in Ferghana region were taken under state protection. 7 of them are architectural monuments, 8 - historical and artistic monuments, 66 - archaeological monuments. The oldest architectural monuments here are the Kamolkozi Madrasah (1847), the Madyan Khazrat Madrassah (1861), the Norbutabi Madrassah (1799), the Mosque of the House (XVIII century), Dakhmai Shahona (XIX century) and Modarihon (XIX century). After the state protection of these unique architectural buildings, these settlements and the Khudayarkhan Horde (1873) were reconstructed and repaired.

In 1970-1975 the number of cultural institutions in the country increased. In particular, there were 6,300 libraries, 31 museums and 3,700 clubs. By 1985, labor collectives served 1,667 red corners, 25,981 communist labor schools, 939 clubs for 294069, including palaces and houses of culture. The museums, which belong to this category, contain various monuments, material and artifacts, works of art, and sculptures related to the past of the Uzbek people.

It is noteworthy that in February 1975, the Central Committee of the Communist Party of Uzbekistan adopted a special resolution "On measures to further improve the protection, restoration, promotion and promotion of architectural, historical and artistic and architectural monuments in Uzbekistan. According to the resolution, the task is to repair and repair the material and cultural monuments in the republic, including archeological monuments and preserve historical monuments. After the decision, archeological monuments throughout the country were repaired and repaired, large-scale reconstruction works were carried out to restore the ruined cultural sites on the ground.

The reconstruction of historical and cultural monuments, in turn, is inextricably linked with the experience and skills of architects and craftsmen, the educational process. It is important to note that in the second half of the Soviet 1970s, the country lacked specialists in this field. The main reason for this was the lack of attention of the central government to the renovation of the architectural monuments and the neglect of the industry. However, in 1976 the younger generation was taught at the Samarkand Institute of Architecture and Construction and other secondary education institutions for the repair and restoration of historical and cultural monuments and monuments. Unfortunately, the archeological sites in many areas have been destroyed and require a complete overhaul. The funds allocated by the Soviet cultural authorities for the restoration of monuments were insufficient.

A number of measures were taken to preserve, preserve and study archeological monuments in the Republic. The law of the Supreme



Soviet of the UzSSR “On preservation and use of monuments of history and culture” of 1977 and the decision of the Council of Ministers of the Communist Party of Uzbekistan of September 23, 1979 “On measures for further development of archeological research in the Republic” much attention was paid to the scientific study of archeological finds from the past [22], [670]. However, the resolution also states that archeological sites are being destroyed on the ground. In particular, archeological sites in the Romitan district and October 50<sup>th</sup> anniversary of Romitan district of Bukhara region are in ruins. One of the oldest cities in the Kashkadarya region - Kallai Zakhakimaron, Shuluktepa and Erkurgan were destroyed. The ancient city of Turtkul in the Tashkent region has been completely destroyed due to the neglect of the history and culture departments. During the last 6 years Uzkolkhozstroy organizations have destroyed 6 archeological sites in Samarkand region and 10 in Namangan region.

The decision of the Central Committee of the Communist Party of Uzbekistan of February 22, 1977 “On the further improvement of the preservation of monuments in the republic and their use in ideology” entrusted the party, Soviet and cultural departments to use them as a visual weapon for propaganda of the monuments [23], [98]. According to the resolution, tasks on protection of historical and cultural monuments in the republic, their repair and repair at the local level were defined. At the same time, the reconstruction of the memorials was carried out by other organizations as well. In particular, the work of preserving and preserving the centuries-old cultural heritage of the Uzbek people was carried out by the Scientific Center established in Tashkent, the Research and Design Institute of the Monuments of Uzbekistan. This research institute has studied the historical monuments of the republic during the Soviet era. Thanks to the hard work of such masters as Aminjon Salomov and Ochil Bobomurodov in Bukhara, the Madrassahs of Masjidi Kalon, Minorai Kalon, Ulugbek and Kukaldosh were reconstructed.

Capital funds for the reconstruction of mosques and madrassas in the Ferghana region were disbursed and used. In particular, in the plan of repair works of the Republican Society for the Preservation of Historical and Cultural Heritage of Uzbekistan on February 22, 1979, 72,000 rubles were allocated for the reconstruction of the architectural monuments in the Fergana region [24], [15]. It is important to note that as a result of the management's allocation of capital funds to these architectural structures, their condition has improved and changed.

According to the Central Committee of the Communist Party of Uzbekistan, in 1979 the Ministry of Culture of the Republic of Uzbekistan established the Main Department for the Scientific Production of Souvenirs. The department has increased funding for

the conservation and restoration of monuments. During the tenth five years (1976-1980) the volume of these events increased by 2.5 times. In particular, the Registan Ensemble Square in Samarkand, the Labihovuz Ensemble in Bukhara and the Ichanqala Historical Museum in Khiva have been renovated. Famous masters from Samarkand B. Juraev, A. Umarov, K. Jalilov, A. Kuliev, A. Hakkulov, R.Masharipov, T.Yokubov, I.Rajabov from Kokand, S.Muydinov from Kokand, Namangan T.Fozilov, K.Yunusov and T.Ismoilov from Andijan contributed greatly. At the same time, the Law of the Supreme Soviet of the UzSSR “On the preservation and use of monuments of history and culture” emphasized that the promotion of cultural heritage is one of the main tasks of the Society for the Preservation of Historical Monuments. In its outreach, the society used public events and various means.

In 1980, a group of lecturers was established in the city and district centers of the country, bringing together about 2,000 public advocates. Tours and excursions of schoolchildren were held to familiarize with the monuments and historical monuments. The 32 tourist itineraries developed by the LKSM of Uzbekistan include more than 200 of the best national monuments in the country, and more than 10,000 members of the community visit these sites every year.

The Republican Society for the Preservation of Historical and Cultural Monuments has revived its efforts to publish information on the unique monuments of the country. In particular, in the tenth fifteenth year (1976-1980) books on architectural monuments of Khorezm, Shahzinda ensemble, Central Asian architectural monuments, Tashkent architectural center and other cultural monuments were published. These publications contain information about unique architectural structures in Uzbekistan - mosques, madrassas, historical monuments. At the same time, the above works analyzed the issues of reconstruction and repair of cultural buildings in need of repair.

In 1980 special car clubs were created by the Republican Society for the Preservation of Historical and Cultural Monuments. They served in the most remote areas of the country, delivered lectures, film screenings and photographic presentations on ancient architectural structures of Samarkand, Bukhara and Khiva at community farms and field halls and rural schools. In 1980 alone, members of the Society of History and Culture of Uzbekistan gave more than 10,000 lectures, organized over 500 broadcasts on radio and television, film festivals and weeks of memorials. The film “yesterday, today, tomorrow” dedicated to the architectural monuments of the Ferghana Valley cities was prepared and shown by members of the given society. In particular, the film “Restoration” tells about the history of Turkestan, which was shown in stone and bronze, about the Uzbek warriors of World War II, which contains



memorials and monuments of honor that perpetuate their memory.

In the late 1970s archeological excavations were carried out in historic cities of the Republic. In particular, due to the development of the architectural monuments restoration project Ichan Kala in Khiva, the specialists were able to dig a number of ditches and find valuable ceramic items. Having studied these findings, M. Mambetullaev found fragments of ceramic vessels dating from the fourth and third centuries BC, testifying to the ancient Khorezm period. In 1973 - 1975, the same scientist studied the city walls of Ichan Kala. It should be noted that the coins kept in the Khiva Museum in 1969 (according to Treasurer of the Museum T.Sereda, these coins were found in the territory of Ichan Kala) are of ancient and medieval coins [25], [23]. Thus, as a result of archeological excavations in the republic, the opportunity to collect and accumulate material and cultural values was obtained.

#### 4. CONCLUSION

In summary, some work has been done to preserve and preserve historical, cultural monuments in the country during the "advanced socialism" phase and in the 1970s. At the same time, special car clubs of the Republican Society for the Preservation of Historical and Cultural Monuments were organized and delivered lectures. In order to promote the monuments, the members of the community traveled to remote areas and remote areas of the country to present unique lectures, film screenings, and photo exhibitions on collective architects, field halls and rural schools in Samarkand, Bukhara, and Khiva. Numerous broadcasts have been made through radio and television, and festivals and weeks of film about monuments have been made. However, these events unfortunately were carried out in the form and style of Soviet ideology.

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## RESEARCH OF ELECTORAL PROCESSES IN THE INITIAL STAGES OF FORMATION OF ELECTORAL SOCIOLOGY

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### ANNOTATION

*This article discusses a brief history of the first attempts to study electoral processes by the polling method in the initial stages of the development of electoral sociology as an independent science at the turn of the 19th-20th centuries in the USA.*

**KEYWORDS:** *electoral sociology, electoral process, straw polls, selective method*

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### ИССЛЕДОВАНИЯ ИЗБИРАТЕЛЬНЫХ ПРОЦЕССОВ В НАЧАЛЬНЫХ ЭТАПАХ СТАНОВЛЕНИЯ ЭЛЕКТОРАЛЬНОЙ СОЦИОЛОГИИ

**Аннотация.** В данной статье рассматривается краткая история первых попыток изучения электоральных процессов методом опроса в начальных стадиях становления электоральной социологии как самостоятельной науки в на рубеже XIX-XX веков в США.

**Ключевые слова:** электоральная социология, избирательный процесс, соломенные опросы, выборочный метод

Электоральная социология на сегодняшний день является одной из актуальных и важнейших дисциплин для Республики Узбекистан, определившей путь демократического развития. В Национальном университете Узбекистана имени Мирзо Улугбека начиная с 2018-2019 учебного года в

учебный план по подготовке магистров по специальности «5A210101 – Социология» был включен курс «Электоральная социология». В связи с этим изучение истории становления этой науки, истории становления практики изучения избирательных процессов в целом стало



актуальной для системы высшего образования Республики Узбекистан.

Электоральная социология (лат. *eligo* – выбор) или социология выборов – это область социологии, которая изучает ряд вопросов, связанных с поведением населения в избирательных кампаниях, включая изучение социальных сообществ и отдельных граждан, факторов, влияющих на участие в выборах.

В истории становления электоральной социологии как науки, мы, безусловно как и многие исследователи этой проблемы, признаем роль США. США является родиной также основных школ, методов и методик этой дисциплины. Избирательные процессы, особенно электоральное поведение, были предметом социальных исследований в США со второй половины XIX века. В связи с этим стоит отметить, что первый этап в развитии электоральной социологии считается создание специальной системы подсчета голосов в день выборов, с целью прогнозирования результатов голосования. В истории социологии это явление возникло под названием «соломенные опросы». Американское издание «New Political Dictionary» признаёт Джона Селдена автором термина «соломенные опросы» (*straw polls*), который написал следующие строки: «Возьмите солому и подбросьте её в воздух – вы сможете увидеть, куда дует ветер». Этот термин не сразу же был введен в научный оборот, но в 1866 году газета «Cleveland Leader» опубликовала статьи со следующими строками: «...соломенный опрос, проведенный вчера в поезде, показал...» [1, 132].

Исследователь избирательных опросов К.С. Франкович цитирует заметку, опубликованную в американской газете *The American Watchman* и *Delaware Advertiser* в 1824 году: «Мы призываем наших уважаемых граждан принять участие в этой инициативе – выявлении мнений населения. Пусть политики в Вашингтоне и в других местах знают волю людей и, даже если это не решит проблему, люди по крайней мере получают информацию ...» [2, 104-109].

Б.З. Докторов своей книге «От соломенных опросов к постгэллаповским опросным методам» предлагает разделить первый этап становления электоральной социологии на три периода [3]:

- ✓ предыстория соломенных опросов (1789-1824);
- ✓ период становления и расширения системы соломенных опросов (1825-1915);
- ✓ эпоха журнала «*Literary Digest*» (1916-32).

Предыстория соломенных опросов отмечается периодом становления института президентства в США. В этот период только

белые, финансово независимые мужчины, постоянно проживающие в избирательном округе имели право голоса, они отмечали свой выбор в специальных регистрационных книгах, бюллетеней не было. А также стоит отметить, что администрацией Джефферсона на рубеже XVIII-XIX вв. регулярно проводились опросы предпочтений избирателей.

Исследователь истории соломенных опросов Т. Смит обращает внимание на то, что политические группы, заинтересованные в предвыборных прогнозах, переключились на оценку возможных результатов президентских выборов 1824 года уже в начале 1821 года [4, 21-36]. Во время кампании в 1824 года были использованы несколько методов сбора информации. Т. Смит предложил назвать опросы этого периода «протосоломенными опросами», так как в проведении этих опросов не учитывались социальные характеристики электората.

Предполагается, что результаты первых двух «соломенных опросов» были опубликованы в июле 1824 года. Впервые в стране 24 июля 1824 года в газете «*Harrisburg Pennsylvanian*» были опубликованы результаты опроса жителей городка Вилмингтона (*Wilmington*), штат Делавер. В августе того же года газета «*Raleigh Star*» сообщала об итогах опроса в штате Северная Каролина [5, 10]. Поэтому некоторые исследователи приходят к выводу, что электоральная социология возникла как наука при создании института президентских выборов в США.

Первые опросы проводились в основном газетными публикациями, и у журналистов не было достаточных навыков в методике проведения опроса и методе выборки. Основное внимание было уделено максимальному объему информации. Не было четкого контроля над сбором данных в прессе. Заполненные анкеты были в основном возвращены в течение нескольких недель, и поэтому было невозможно определения динамики предвыборных настроений.

Сьюзан Хербст пришла к выводу, что соломенные опросы начались в 20-х годах XIX века, но стали популярным только в середине XIX века. Хербст называет этот период периодом «народных» опросов [6].

Начиная с 1840-х годов клиентам отелей стали предлагать возможность указывать в регистрационной книге, за кого они хотели бы проголосовать в ходе президентской избирательной кампании. В 1851 году один из помощников газеты в Миссисипи провел 800 интервью в 17 округах, где результаты выборов были неопределенными. Газета смогла точно



прогнозировать результаты выборов в 15 избирательных округах.

Ко второй половине XIX века соломенные опросы стали более сложным и многоступенчатым исследованием. В частности, в 1883 году газета «The Boston Globe» использовала инновационный метод сбора данных для прогнозирования результатов выборов, за день до выборов наблюдатели были направлены в отдельные избирательные округа, а затем результаты государственных выборов были предсказаны на основе их отчетов. Другие издания, в том числе Chicago Records, также провели опрос в размере 60 000 долларов за этот период, точно прогнозируя результаты выборов [7]. Позднее количество изданий, проводящих подобные опросы, расширилось. В частности, «Literary Digest» – самый успешный из всех.

«Literary Digest» начал проводить соломенные опросы начиная с 1916 года. В 1920 году журнал раздал 11 млн карт, в 1924 – 16,5 млн, в 1928 – 18 млн карт. И все прогнозы журнала о результатах выборов были точными. Прогноз 1932 года оставался самым точным в истории журнала: между официальной статистикой и прогнозом журнала была разница только лишь на 1,4 % голосов. Таким образом, «Literary Digest» никогда не ошибался в своих прогнозах, предсказывая результаты президентских выборов с 1920 по 1932 год, тем самым увеличивая количество подписок на два миллиона экземпляров [3].

Соломенные опросы стали важным этапом в развитии электоральной социологии и заложили основу для дальнейшего развития научных методов и методик электоральной социологии.

Исследования Клода Робинсона сыграли важную роль в изменении отношения к «соломенным опросам». В 1935 году Джордж Гэллап пригласил Клода Робинсона в институт, который он основал. Президентские выборы 1936 года, стали соревнованием между соломенными опросами журнала «Literary Digest» и выборочным опросом Джорджа Гэллапа. В результате победил Гэллап и начался новый период электоральных исследований Джорджа Гэллапа. Гэллап внес качественные изменения в ряд методов и методик изучения избирательных процессов, в первую очередь он разработал и усовершенствовал методику выборки избирательных опросов.

В конце 30-х годов XIX века электоральная социология вступила в стадию институционализации. Этот этап характеризуется появлением исследовательских центров, проводящих исследования политических взглядов и поведения избирателей. Кроме того, было ускорено формирование профессионального

сообщества, и в университетах США начинается преподавание электоральной социологии как самостоятельной дисциплины. Итак, с этого периода мы можем сделать вывод, что электоральная социология начала проявлять себя как совершенно самостоятельная наука.

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# HEAVY METAL POLLUTION INDEX AND SAFETY CONCERNS OF BOREHOLE WATER LOCATED PROXIMALLY TO DUMP SITES IN YENAGOA, BAYELSA STATE

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## ABSTRACT

*Heavy metals pollution index of borehole water located proximal to dumpsites were investigated in yenagoa metropolis. This was done to determine the degree of heavy metal intrusion into portable waters and its effects on human health. Nine (9) Boreholes (3/area) located proximally to each of the dumpsites were sampled for heavy metals using 50 ml empty plastic bottles. Samples were collected in triplicates and twenty seven (27) plastic bottle samples were collected. Water samples were taken to the Institute of Pollution Studies (IPS) laboratory Port Harcourt and analyzed for Iron (Fe), Chromium (Cr), Cadmium (Cd), Lead (Pb) and Nickel (Ni). The Electro spectrophotometric method was used to detect and determine heavy metal prevalence. Data were analyzed for means, standard deviation and analyses of variance (ANOVA) with the aid of SPSS version 20 software. Heavy metal pollution index (HPI) was also conducted for the borehole water from the sampled locations. Results reveal that Fe content in the sampled ranged from 0.28mg/l - 0.38mg (Tombia>Opolo>Greenville). Cr values ranged between 0.004mg/l – 0.02mg/l (Tombia=Opolo>Greenville). Cd concentration ranged 0.036mg/l -0.50mg/l. Pb concentration ranged between 0.035mg/l – 0.18mg/l and Pb concentration ranged between 0.036mg/l – 0.18mg/l. All parameters exceeded the WHO limit for safe drinking water except Cr which was below limit. Heavy metal pollution index (HPI) reveals that: Tombia (461.23), Greenville (127.84) and Opolo (50.40). Tombia and Greenville exceeded the threshold value of 100. Based on the findings from this research, only borehole water from Opolo was below the threshold (50.40). Therefore the consumption or use of water from Tombia and Greenville for cooking or drinking are hazardous and portends grave danger as it can result in organ or systemic damage to humans.*

**KEY WORDS:** Heavy metal, Pollution index, Borehole, Dumpsite, Water, Yenagoa

## 1. 0 INTRODUCTION

It is paradoxical that about a decade after the United Nations announced its attainment of the millennium developmental goal (MDG) of the provision of safe drinking water to at least 88% of the worlds inhabitants, over three-quarters of Africa are still without access to safe drinking water. Safe drinking water or potable water is water of sufficiently high quality that it can be consumed or used without risk of immediate or long term harm.

In Yenagoa the problem of access to safe drinking water is further compounded by the absence of a waste management policy and a waste containment plan (Alagoa et al, 2020). Waste dumpsites and human

housing compete for space in neighborhoods that are epitomes of slums and lack basic city planning. Heavy metals from dumpsites seep into ground water and present in borehole waters located proximally to these dumpsites.

Heavy metals in drinking water presents a health risk if consumed without treatment, therefore there is a need to monitor heavy metals characteristics of boreholes in Yenagoa. The use of heavy metal pollution index as a tool to gauge the safety of drinking water is gaining increase recognition in environmental research. This will provide useful information for government and other stakeholders for the enactment of statutes and the protection of human life.





## 2.0 MATERIALS AND METHODS

### 2.1 Borehole Sample Collection

Borehole water samples were collected from nine (9) Boreholes in different areas located strategically in Tombia, Opolo and Greenville areas, Yenagoa. Water samples were collected in triplicates with clean empty 50ml table water containers and transported under cool conditions to the Institute of Pollution Studies (IPS) laboratory of the Rivers State University of Science and Technology, Port Harcourt. A total of twenty seven (27) water samples were taken for investigation. Sampling sites were selected based on their closeness to highly populated neighborhoods and high degree of commercial patronage.

### 2.2 Water Analysis for Heavy metals

Water samples were analysed for the Heavy Metals Fe, Cu, Cd, Pb, Cr and Ni using model 210VGP of the Basic Scientific Atomic Absorption Spectrophotometer series with Air Acetylene gas mixture as Oxidant. The results were recorded in mg/L.

### 2.3. Statistical Analysis

Mean and standard deviation were calculated for all the investigated heavy metals. Analysis of Variance (ANOVA) was employed to determine the degree of variability or interrelatedness of the different borehole facilities of all the measured parameters, and the means separated using the Turkey HSD Post HOC test at a probability level of P=0.05 or 95% confidence limit. The weighted arithmetic average of the concentrations was used to calculate HPI values using the equation given by Mohan et al. (1996). Analysis was aided using the SPSS@ Statistical software 20.

## 3.0 RESULT

**Table 1: Location of Sampling sites in Yenagoa**

S/N	Location	LATITUDE	LONGITUDE
1	Tombia TBH1	N4°56'59.92"	E6°21'11.643"
2	Tombia TBH2	N4°56'57.42"	E6°20'8.0682"
3	Tombia TBH3	N4°56'56.85"	E6°20'9.578"
4	Opolo OPBH1	N4°56'43.362"	E6°19'51.58"
5	Opolo OPBH2	N4°56'52.13"	E6°19'59.77"
6	Opolo OPBH3	N4°59'29.00"	E6°19'42.34"
7	Greenville GVBH1	N4°56'38.99"	E6°19'39.67"
8	Greenville GVBH2	N4°56'37.80"	E6°19'38.83"
9	Greenville GVBH3	N4°56'32.88"	E6°19'30.38"

Source: Field work, 2020. TBH –Tombia borehole (1-3), OPBH- Opolo borehole (1-3), GVBH- Greenville borehole (1-3).

**Table 2: Comparison of mean heavy metals in Borehole water with WHO standards**

Heavy metals (mg/l)	Study area/WHO standard.			
	Tombia	Opolo	Greenville	WHO
Fe	0.384 <sup>a</sup> ±0.037	0.34 <sup>ac</sup> ±0.021	0.28 <sup>bc</sup> ±0.027	0.30
Cr	0.004 <sup>b</sup> ±0.0000	0.004 <sup>b</sup> ±0.000	0.020 <sup>b</sup> ±0.026	0.05
Cd	0.502 <sup>c</sup> ±0.409	0.036 <sup>c</sup> ±0.02	0.039 <sup>c</sup> ±0.018	0.003
Pb	0.18 <sup>d</sup> ±0.28	0.035 <sup>d</sup> ±0.01	0.063 <sup>d</sup> ±0.037	0.015
Ni	0.037 <sup>e</sup> ±0.027	0.036 <sup>e</sup> ±0.016	0.056 <sup>e</sup> ±0.006	0.020

Source: Field work, 2020. WHO (2011). Means with the same letter superscript along the same rows are not significantly different (P>0.05).

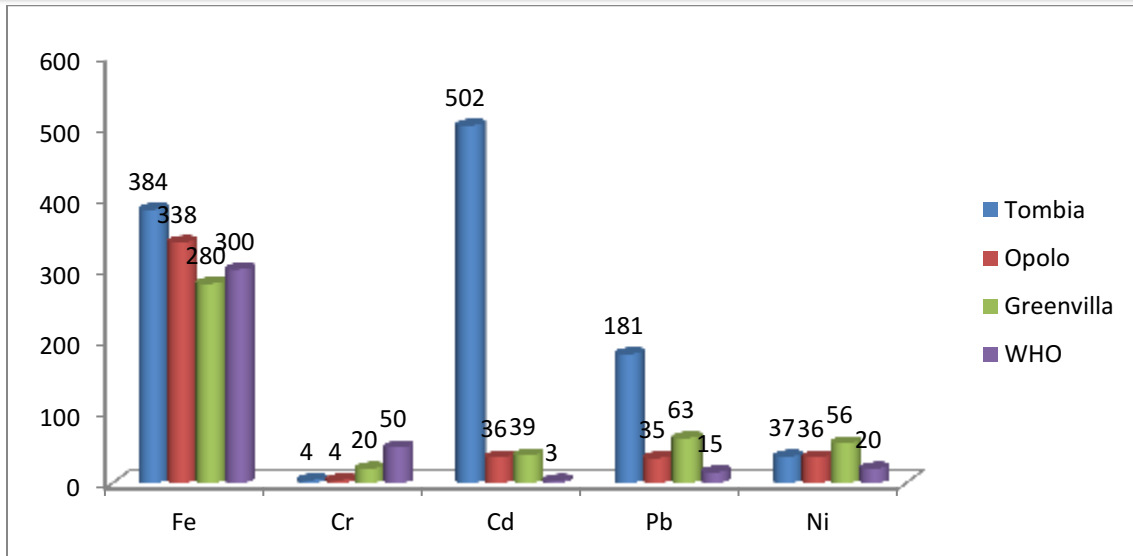


Fig. 1: Mean concentration of heavy metals in all sample stations

Table 3: Heavy metal pollution Index (HPI) for Tombia Borehole water

Heavy Metals	Mean Conc.	Highest permitted value for drinking water ( $S_i$ )	Desirable maximum value ( $I_i$ )	Unit weightage ( $W_i = 1/S_i$ )	Sub index ( $Q_i$ )	$W_i \times Q$
Fe	384	300	300	0.0033	-	-
Cr	4	50	100	0.02	192	3.84
Cd	502	3	3	0.33	-	-
Pb	181	15	20	0.066	3220	212.52
Ni	37	20	20	0.05	-	-
<b>Total</b>	-	-	-	0.469	-	<b>216.32</b>

$W_i = 0.469$ .  $W_i \times Q = 216.32$  HPI = 461.23

Table 4: Heavy metal pollution Index (HPI) for Opolo Borehole water

Heavy Metals	Mean Conc.	Highest permitted value for drinking water ( $S_i$ )	Desirable maximum value ( $I_i$ )	Unit weightage ( $W_i = 1/S_i$ )	Sub index ( $Q_i$ )	$W_i \times Q$
Fe	338	300	300	0.0033	-	-
Cr	4	50	100	0.02	192	3.84
Cd	36	3	3	0.33	-	-
Pb	35	15	20	0.066	300	19.8
Ni	36	20	20	0.05	-	-
<b>Total</b>	-	-	-	0.469	-	<b>23.64</b>

$W_i = 0.469$ .  $W_i \times Q = 23.64$  HPI = 50.40



**Table 5: Heavy metal pollution Index (HPI) for Greenville Borehole water**

Heavy Metals	Mean Conc.	Highest permitted value for drinking water ( <i>Si</i> )	Desirable maximum value ( <i>Ii</i> )	Unit weightage ( <i>Wi = 1/Si</i> )	Sub index ( <i>Qi</i> )	<i>Wi × Qi</i>
Fe	280	300	300	0.0033	-	-
Cr	20	50	100	0.02	160	3.2
Cd	39	3	3	0.33	-	-
Pb	63	15	20	0.066	860	56.76
Ni	56	20	20	0.05	-	-
<b>Total</b>				0.469		<b>59.96</b>

$Wi = 0.469$ .  $Wi \times Qi = 59.96$  HPI = 127.84

**Table 6 : Prescribed limits for heavy metals concentration in drinking water**

Standards	Pb	Fe	Zn	Mn	Cd	Co	Cu	Cr	Ni
ICMR(mg/l)	0.1	0.3	5	0.1	0.01	NA	0.05	0.05	0.02
CPC(mg/l)	0.1	3	5	2	2	NA	2	2	3
WHO(mg/l)	15	300	300	100	3	40	50	50	20
EPA(mg/l)	15	300	300	50	3	-	100	100	-

Source: David et al (2013). WHO - World Health Organization EPA- Environmental Protection Agency ICMR – Indian Council of Medical Research. CPC- Consumer Protection Council

#### 4.0 DISCUSSION

This study observed heavy metal parameters of Fe, Cd, Pb and Ni are above that of threshold limits of WHO (2011) in borehole water in the study stations. Except for Cr which was below the suggested internationally permissible limit. Similar result was obtained by Chika and Prince (2020). They observed heavy metal concentrations of Ni and Pb are above the permissible limit and also noted lower concentrations of Cr as compared to the permissible limit in drinking water from different sources in Ikorodu LGA of Lagos State. In contrast to the findings of this study, David et al, (2013) observed that the concentration of the heavy metals Mg, Ca, Mn, Fe and Cd in samples of drinking water monitored in Ago-Iwoye, Ogun State were significantly lower than the WHO permissible limit. They further observed non-detectable concentration of Zn, Cu, Pb, and Cr in the water samples.

In this study, Fe concentration in borehole water ranged between 0.28mg/l – 0.384mg/l with Tombia having the highest concentration and Greenville having the least concentration (Table 1 and Fig.1). Higher levels of Fe observed in Tombia may be due to deposition of metallic waste waters and leachate coming from the phone and the computer village situated nearby. Milivojec et al (2016) observed increase levels of Fe due industrial waste water and leachate coming from landfills. There is a significant higher concentration of Fe than the permissible limit. Another reason for the significant high concentration of Fe is due to the fact that Fe is easily derived from marshy environment and also from acidic soils

(Imasuen and Egai, 2013). The geology of the areas could probably be the source of Fe in the water from such boreholes. Higher levels of Fe at these borehole sites could be due to the fact that Fe seeped through soil into water aquifers.

Fe is an essential element to the human body therefore high concentrations as observed in this study may not pose a significant threat to human health.

Cr concentrations in this study ranged from 0.0041mg/l – 0.019mg/l with the lowest value at Opolo and the highest at Greenville. There were no significant differences between sampled locations ( $P > 0.05$ ). All sample location displayed lower levels of Cr than the permissible limit. Cr is a trace heavy metal usually found in surface and ground water occasionally. Sources of Cr include discharges from steel and pulp mills; erosion of natural deposits *etc.* One reason for the low level of Cr may be due to the fact that Cr is a metal of low bio-geochemical mobility.

Cd concentration in this study ranged between 0.036mg/l – 0.501mg/l with the highest value in Tombia and the lowest in Opolo boreholes. There is no significant difference ( $P > 0.05$ ) between study locations of borehole water. Cd concentration exceeded the international permissible limit. Cd is usually found in effluents from industries producing batteries, phosphate fertilizers, mining and other inorganic products. Effluents from industries like battery making, dye making, pigment making, alloy making are the major sources of Cd into the water bodies (Rao et al, 2004). The location of dumpsites near residential dwelling, market places and E-waste generating centres may be



the reason for this appreciable rise above the permissible and desirable limits.

Pb concentration in borehole water ranged from 0.034mg/l to 0.181mg/l with maximum value at Tombia and a minimum value at Opolo. There is no significant difference ( $P>0.05$ ) in concentrations between all three borehole locations (Tombia, Opolo and Greenville). The value of Pb in this study exceeds the permissible limits for Pb concentration in drinking water. (WHO, 2011). This result is consistent with the result of Milivojec et al (2016) who also observed higher than permissible concentrations of Pb in water samples.

One reason for this high concentration of Pb may be due to the presence of dumpsites near borehole water sources. Pb gets into the surface and ground water through municipal wastes, mining activities, plumbing, paint residue and burning of coal. Another source of Pb in the water is the very high concentration of Pb in soil which diffuses through the soil solution into ground water and surface water (Hardman et al, 1994).

Ni concentration in borehole water ranged from 0.0361mg/l to 0.056mg/l with a maximum in Greenville and a minimum in Opolo. There is no significant difference ( $P>0.05$ ) in concentrations between all three borehole locations (Tombia, Opolo and Greenville). Ni toxicity sources are cocoa plant foods (nuts) and hydrogenated oils. Stainless steel manufacturing, electroplating, coal and oil combustion also release Ni as their effluents. Industries dealing with electrical equipment and household appliances, catalysts, pigments, batteries (NiCad) are also sources of Ni contamination in the water bodies. In this study, the presence of Ni in quantities above the permissible value may be as a myriad of the diverse kinds of materials found in the dumpsites and waste streams in the study area.

Heavy metal pollution index (HPI) for borehole water in all the sampled locations (Tombia, Opolo and Greenville) indicate that Tombia has 461.23, HPI index for Opolo is 50.40 while the HPI index for Greenville is 127.84. This shows that Tombia>Greenville>Opolo in HPI.

This result is indicative that the HPI of Tombia and Greenville borehole water exceed the critical value of HPI of 100 (Prasad and Singita, 2008; Prasad and Mondal, 2008) which imply that the water is unacceptable for drinking without treatment. On the other hand the HPI of Opolo was below the critical value of 100 suggesting that the water is safe for drinking.

In this study, the HPI values observed in Tombia and Greenville may be due to landfill leachates, domestic sewage and industrial waste waters in the study area.

In conclusion, the findings have revealed that there is a direct correlation between dumpsite and heavy metals in proximal borehole waters in the study area. The HPI also suggest that apart from Opolo area, the borehole waters from Tombia and Greenville area are unacceptable for drinking without treatment.

## 5.0 CONCLUSION

The determination of heavy metals in portable waters such as in borehole water is very critical because of its overriding importance on public health issues. This study has assessed the heavy metals in borehole water located proximally to these dumpsites in Yenagoa. The heavy metals studied are Fe, Cr, Cd, Pb and Ni in borehole water. The heavy metal pollution index (HPI) in all the sampled locations (Tombia, Opolo and Greenville) was calculated. HPI index for Tombia is 461.23. HPI index for Opolo is 50.40 while the HPI index for Greenville is 127.84. This shows that Tombia>Greenville>Opolo. The HPI index of Tombia (461.23) and that of Greenville (127.84) exceeded the internally accepted threshold value of 100, while the HPI value of Opolo (50.40) was lower than the threshold value.

This study therefore concludes that borehole water in Tombia, Opolo and Greenville Yenagoa are greatly affected by heavy metal intrusions from dumpsite. It is unsafe to drink borehole waters from Tombia and Greenville because of the grave consequences of organ or systemic damage from heavy metal poisoning.

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# ISSUES OF JOURNALISTIC SPECIALIZATION AND SKILLS IN COVERING THE ACTIVITIES OF INTERNATIONAL ORGANIZATIONS

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## ABSTRACT

*This article discusses it is necessary for journalists covering international organizations to have in-depth knowledge, skills, flexibility, ability to analyze external relations and, most importantly, a good understanding of the activities of international organizations. It should be noted that a journalist must have a certain creativity in this area. He should take into account that the information he prepares will be sold in other media.*

**KEYWORDS:** *modern mass media, online media, accuracy of the information.*

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## DISCUSSION

We know that journalism needs both universality and specialization. Because the journalist must be flexible in any situation. Universality is essential for a thorough analysis of the situation, and specialization for in-depth analysis. However, just as it is not possible to cover every field at once, a journalist must feel free, and confident in any direction, should know the responsibility for the material he prepares, the secret of the field. So, specialization is also important for a journalist. We see this in the creative work of journalists who regularly cover the activities of international organizations. In our opinion, it is necessary for journalists covering international organizations to have in-depth knowledge, skills, flexibility, ability to analyze external relations and, most importantly, a good understanding of the activities of international organizations. It should be noted that a journalist must have a certain creativity in this area. He should take into account that the information he prepares will be sold in other media. If we look at the work of journalists who report on the activities of international organizations in the leading news agencies of our country, there is more universality than specialization. This is due to the fact that there are almost no materials analyzed with the help of specific examples of the industry. No additional expert opinion will be involved in the preparation of the material. The information is received but translated and transmitted without processing. However, at a time when the information age is evolving, a journalist needs more universality and specialization when the time comes. As noted by Beruniy Alimov, Doctor of Philosophy in Philology, in recent years, a number of

practical measures have been taken by "our major news companies" such as UzA and the "Jakhon" news agency. For example, traditional genres of journalism, such as news, reports, articles, and photographs, are evolving to the level of today's requirements. Serious attention is also paid to their translation into foreign languages. Another important aspect is that in the process of their direct transfer to the countries of the world, new technological skills are included and preliminary results are achieved. Nowadays, in the context of accelerating the informatization of society and the growing influence of globalization, there is a need to pay attention to the dichotomous aspect of the development of international relations, that is, the two unrelated aspects. On the one hand, the acceptance of common values, international rules and principles by the subjects of international politics is growing. On the other hand, there is a struggle between these subjects to preserve their identity, national values and culture. In this struggle against mutual pressure, states are mobilizing all their resources, including the media, NGOs, network organizations, transnational movements, the Internet, SMS and other "gadgets" of the XXI century.<sup>1</sup> It should be noted that, in particular, the active observation and commentary of important events taking place around the world by journalists working in major news agencies necessitates specialization at a modern professional level. In the matter of skill, universality is required. It is not in vain

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<sup>1</sup> B.Alimov - The role of national media in the development of the country's media image: theoretical and practical aspects: Tashkent :. 2015. Scientific Manual



that we have stopped at news agencies to cover the activities of journalists who prepare news and reports on the activities of international organizations. Today, the largest news agencies in the country have well-educated and well-analyzed journalists, but there are no journalists who can accurately comment on the ongoing reforms, events and processes in the activities of international organizations. Journalists working in this area lack skills. A journalist preparing information in this regard requires special skills in working with the text.

To date, the need for effective use of paralinguistic elements as a result of the emergence of electronic texts has been justified. It is worth noting that they now combine not only graphics, but also audio and video materials. They can also easily include modern multimedia tools created in the integration of: images, photographs, tables, formulas, symbols, audio tools, video tools, graphics, sound and dynamics.<sup>2</sup> This means that the fact that part of the journalist's product, which works with these platforms and covers the reforms, is his own, that is, belongs to a news agency, motivates the sale of information to other media. Indeed, experience is also crucial in raising national journalism to a world standard. There is a particular demand today for journalists covering the activities of international organizations. Specialization motivates the journalist to work harder on himself.

It should be noted that today, journalists working in this field are constantly encouraged by international organizations to establish cooperation in the field. We do this every year in cooperation with the Creative Union of Journalists of Uzbekistan and the Center for Retraining Journalists, and as an incentive, we can see it among the incentive prizes at the Golden Pen National Award, which will be held on May 3 - World Press Freedom Day. An example is the awarding of this national prize by international organizations for the nomination "The best material on human rights." In addition, the events to be held by these organizations, seminars and trainings will help the journalist, who covers the work in the field, to get acquainted with the organization, to prepare materials with a correct interpretation of the ideas of the organization. Of course, this requires a strong skill from the journalist. This is because a journalist, who is well aware of the goals and objectives of the organization, the reforms being carried out, can confidently make bold and relevant proposals in the field. A journalist with an independent opinion, the ability to analyze the achievements and shortcomings, the existing problems, does not deviate in any direction, and serves the people with a clear conscience, even when presenting specific facts.

<sup>2</sup> Kompantseva L.F. The specificity of norms and standards in Internet discourse // [technology.ru/public/uzus/html/](http://technology.ru/public/uzus/html/)

The issues of cooperation of the Republic of Uzbekistan with the UNO, the world's largest international organization, and its achievements in this area have played an important role in the recent history of Uzbekistan and further enriched it. Today, the cooperation between the UNO and Uzbekistan has also had a positive impact on the external image of Uzbekistan. An example of this is the practical work of the UNO in Uzbekistan. Of course, the role of the mass media, in particular, the information service of the organization is invaluable. The interaction of international organizations with news agencies, the classification of information services of international organizations in the UNO system UNICEF, WHO in Uzbekistan were considered in the research. The study of the level of cooperation with UN news agencies operating in Uzbekistan, as well as the coverage of the UNO, WHO and UNICEF in foreign and national news agencies, shows the following achievements in the study of the object:

- ✓ The official website of the UNO in Uzbekistan covers news on social, economic and cultural spheres of the country;

- ✓ The information service of the UNO in Uzbekistan will study and cover the social, economic and cultural problems of the country;

- ✓ Frequent public opinion polls on economic stability and social protection are conducted, and existing problems are analyzed in the media;

- ✓ In order to realize human potential, regular contests, seminars and trainings are held, which are carried out directly by the information service;

- ✓ The work on good governance and the rule of law will be covered on the official website of the UNO in Uzbekistan and recommendations will be made;

- ✓ New information genres of journalism are used in the coverage of news, not in the "mold" forms;

- ✓ News of the organization's activities, as well as news from agencies that do not have a representative office in the country, including the United Nations Industrial Development Organization, the Environmental Protection Program and the UN Economic Commission for Europe, are provided directly through the organization's information services;

- ✓ It is worth noting that the Information Service has and operates official pages and channels on social networks and messengers;

It is also necessary to point out the existing shortcomings on the selected object:

- There is no cooperation between the Information Service of the UNO in Uzbekistan and the Information Service of Uzbekistan (UzA), in which case the activity is not visible in practice;

- The Uzbek News Agency does not cover the activities of international organizations;

- Events held by the UNO in Uzbekistan (beauty contests, seminars-trainings) in the Uzbek



News Agency are posted only on the official website of the organization with materials translated;

- One-sided coverage of the materials submitted by the Agency on cooperation between Uzbekistan and international organizations, which undermines the principles of objectivity, impartiality and fairness of journalism;

- The Information Office of the UNO in Uzbekistan needs experienced and qualified journalists;

- Although the information service of the organization has pages and channels on social networks and messengers, but their periodicity is low;

- The Information Service of the UNO in Uzbekistan does not regularly exchange information and cooperate with representatives of the national media;

- In addition, the role of news agencies in shaping the image of Uzbekistan through international organizations, as well as the specialization and skills of journalists in covering the activities of international organizations can be seen in the lack of practical work in this area;

Taking into account the above, the conclusions, suggestions and recommendations on the selected object:

- Establishment of cooperation between the information services of organizations in Uzbekistan and foreign organizations;

- Regular, complete and timely information on the activities of the Uzbek News Agency and other national media and the information service of the UNO in Uzbekistan through the media, social networks and other information resources;

- Participation of experts from both sides in the formation of information policy in accordance with modern requirements, the development and implementation of its directions in the national media coverage of the organization;

- Organization of events to inform the media about foreign organizations in Uzbekistan at least once every two months or to periodicals, such as press conferences, briefings, media tours;

- Posting and timely updating of information on the official website of the Information Office of the UNO in Uzbekistan, social networks, mobile messengers;

- Monitoring and analysis of coverage of international organizations by the Uzbek News Agency or other national information resources;

- Understanding the role of international organizations in shaping the image of Uzbekistan abroad;

- Providing information services of international organizations with internal information resources in the formation of the image of Uzbekistan abroad without allowing them to rely on external sources of information;

- Study of the opinion of international organizations on Uzbekistan, the position of the organization's information services;

- Development of necessary proposals for permanent cooperation between the media of Uzbekistan and international organizations;

In conclusion, the coverage of information services of foreign and international organizations is weak. Mistakes and shortcomings in this regard should be addressed in a timely manner. Of course, we must not forget the role and importance of international organizations in shaping the external image of Uzbekistan.

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## SUPER SYNTACTIC INTEGRITY

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### ABSTRACT

*This article focuses on textual linguistics, which focuses on the components of the text. Separately, the term super-syntactic integrity has been studied and given a detailed description.*

**KEYWORDS:** *text, super-syntactic integrity, paragraph, sentence, phrase, freedom of speech, pragmatic purpose of the text.*

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### DISCUSSION

Naturally, coherence and integrity arise between sentences and on the basis of the semantic-grammatical unity of sentences. Almost all text researchers have never lost sight of these two characters. In particular, the definitions given to the text by Western linguists regularly emphasize the consistency of sentences, the fact that the sentence chain is a key aspect of the text and that the text cannot exist without it. For example, the Dutch linguist S. Dick sees "the highest form of coordination in the textual chain of speech." In other words, the text is formed as a product of a high degree of coordination of independent speech (of course, in order to express certain information). A high level of coordination is, of course, the consistency of all aspects that make up the whole, semantic, syntactic, communicative, aesthetic and so on. As a result of this harmony, a text appears. From these one or two considerations, we can conclude that the basic unit of text is speech. But evaluating a sentence as a unit of text is not so common in linguistics. On the contrary, there are many conflicting approaches in this regard. Most linguists believe that a sentence is not a unit of text. For example, I.R. Halperin argues that a relatively large whole that combines a series of sentences, rather than a sentence, can be a text unit larger than the phrase ("superphrase unity"). He claims that the sentence participates as a whole in such a whole that the sentence, which is an integral part of the whole, larger than the phrase, cannot simultaneously be part of the whole text.

It is from this phrase that we can say that the assessment of the whole as the main unit of text is common in almost all linguistic studies. The concept expressed by this term is called different linguists in different ways, i.e., this term has several synonyms. For example: "the integrity of the text from the phrase" - "super-phrasal unity" (O.S. Aksmanova), "complex syntactic integrity" - "the complex syntactic whole" (A.M. Peshkovsky, N.S. - "component of the text" (I.A. Figurovsky), "Prose stanza" - "Prose stanza" (G. Ya. Solganik), "Syntactic complex" - "Syntactic complex" (A.I. Ovsyannikova), "Monological sentence" - "Monological statement", "Communicative block" - "Communicative block" and others.

In Uzbek linguistics, a number of different terms are used to express this concept. For example, A. Mamadzhonov first used the term "large syntactic unit", and later regularly uses the term "superphrasal syntactic unit". I. Rasulov and H. Rustamov, who pay special attention to the stylistic problems of the text, prefer the term "complex syntactic integrity". M. Abdupattoev, who monographed such units in the Uzbek text, considers it appropriate to use the term "super-syntactic units". We also prefer the term "super-syntactic integrity" as a term that more accurately and objectively reflects the nature of the phenomenon. In this dissertation, M. Abdupattoev scientifically demonstrated the essence, syntagmatic and semantic-methodological features of supersyntactic units in the Uzbek text. It should also be noted that the researcher developed the principles (semantic, grammatical and compositional-stylistic) of determining the boundaries of super-syntactic



units in the text. On this basis, the completion of a small topic in the text and the transition to a new topic is one of the factors that determine the structure of super-syntactic integrity, the presence of a strong semantic-grammatical relationship between relatively independent sentences that make up this whole, which ensures the semantic-structural integrity of super-syntactic integrity. correctly indicated. Naturally, speech is involved in the formation of super-syntactic integrity, which no one denies. But the combination of two or more sentences into a single whole is not just a process, but an extremely complex and complex phenomenon. There are a number of factors that supplement such statements. Most researchers who think about this problem (I.R. Halperin, O.I. Maskalskaya, Z.Ya. Turaeva, L.L. Moseva, A. Mamadzhanov, M. Tukhsanov, M. Abdupatov and many others) that there is only one small topic. as such factors, such factors as generality and consistency of the content of sentences, semantic-grammatical and communicative integrity are mentioned. For example, the following passage contains all of these factors, so it can be called a separate supersyntactic integer: When a person is overly frightened, he becomes embarrassed, motionless, and experiences the pain that we know from fear. Indeed, if we face a tiger, we are horrified, because death awaits us, and there is nothing more terrible than the death of a person in the world. So the bottom line is that we are really looking forward to it. But the interesting thing is why, when the world is waiting for happiness, when we are given a prophecy about happiness, why we are waiting for death, and our membership organization is faced with the first situation (A. Kadyri, "The Last Days"). It can be said that there is no debate as to whether super-syntactic units are text units. They are undoubtedly the basic unit of text. Some linguists say that there are separate sentences in the text that are not part of super-syntactic units, and consider them as "free" sentences, on the basis of which free sentences are considered as text units along with super-syntactic units. A. Mamadzhanov and M. Abdupatov agree. They support and analyze such free expressions in the Uzbek text, citing the following example from Said Ahmad's novel "Horizon":

This sinister mulberry tree that hid the heat of cancer that burned a wild stone in his chest was a dream that fell on the hero's chest ...

At that time, Dildor was promised great happiness and a sweet life. The deceived girl was still tormented by moments when she forgot about her dream.

Many people still do not know how much it costs to be faithful to a woman.

Dildor could not blame anyone. He was the only one who knew that I was guilty. These days would not have happened if he had not been unfaithful to Nizamjan. The authors emphasize that

the underlined sentence does not apply to the first supersyntactic whole, consisting of two paragraphs, and, therefore, to the second supersyntactic whole in the form of the last paragraph. We can say that the author's commentary on the content of such free sentences resembles a close subject, serves to express a lyrical digression, and so on. Some linguists consider the sentence "the minimum unit of text." In this regard, the comments of M.Ya. The block is especially noteworthy. In his opinion, the direct element of the structure of the whole text is not only the unity of the phrase (in our opinion, super-syntactic integrity), that is, the addition of sentences, but also individual sentences that give the compiler the importance of content. The very status of such statements requires that they be divided into separate paragraphs in monological written language. Comparing supersyntactic integrity and paragraphs, O.I. Maskalskaya argues that super-syntactic integrity is a phenomenon of syntactic significance and that the paragraph is a unit of compositional level.

There are many studies in the field of linguistics on the topic of super-syntactic unity (a common alternative in Russian linguistics), and it has been shown that paragraphs have different meanings. But among them, two articles deserve special attention. In particular, the Russian-language material N.A. Levkovskaya and the French material material of E.V. Referovskaya uniquely approach this problem and try to identify specific differences in the nature of the problem. Levkovskaya shows that the separation of the text into parts is a complex process in many respects, this process is usually twofold, that is, firstly, it is associated with the functional direction of the text - the pragmatic purpose of the text. The objective process. Secondly, this is the subjective process of the author of the text, a subjective process that depends on the pragmatic goal of the author. This is how the text is divided, that is, the pragmatic goal of the text - a kind of dichotomy in the form of the pragmatic goal of the author. A super-syntactic unit is formed as a result of the separation of the text in accordance with the pragmatic purpose of the text. The paragraph is a product of the pragmatic division of the author's text. Accordingly, the researcher claims that the super-syntactic unit is a unit of objective separation of the text, that it has intellectual completeness, logical integrity. The paragraph, on the other hand, emphasizes that the text is not always subjective because it is a unit of subjective fragmentation, and that the paragraph is often seen as a purely decisive means of influencing the reader. The author of the article emphasizes that, although the paragraph has the status of structural, semantic and communicative integrity in a scientific text, it participates in a literary text mainly as a means of performing an expressive function. Of course, it is known that the specific goals and objectives,



especially this literary text, in general, are associated with the pragmatic goal of the writer, which is to have an aesthetic effect on the reader. In a literary text, of course, the aesthetic intention of the writer is crucial. The scientific observations of E. A. Referovskaya are also aimed at subjectivity in the essence of the paragraph, in which "the paragraph focuses on the semantic development of the subject in accordance with the individual style of the author, and the super-syntactic unity - on the structural formation of the expression." Obviously, when determining the difference between a super-syntactic unit and a paragraph, an objective solution to the problem based on objective and subjective factors of text fragmentation can be achieved. Indeed, in dividing the text into paragraphs, the decisive role is played by the subjective goal of the author: what, how and how the idea is emphasized. True, it is important to naturally express the logical flow of thoughts in a scientific text, so super-syntactic units and paragraphs are largely compatible. But even in a scientific text, in some cases, a super-syntactic unit can be expressed in several paragraphs in order to emphasize the researcher's opinion one after another, "embarrassingly", which does not complicate the understanding of the author's opinion. It just makes it easier. For example, consider the following scientific excerpt on linguistics:

From the point of view of the semantic field, we come across interesting information about the functional-semantic properties of words with opposite meanings.

The range of contradictions between members of the semantic field is wider and more multifaceted than the range of antonyms.

In this sense, antonyms can be considered as a form of conflict between members of the field. In the semantic field, in addition to the contradictions between lexemes, there are groups, microfields and even large inter-instrument conflicts (A. Sobirov. Study of the lexical level of the Uzbek language based on the principle of systems. Tashkent: Manaviyat, 2004, p. 152). The passage consists of three paragraphs, but there is one super-syntactic unit. This is evidenced by common words and connecting devices that provide a semantic-logical and logical connection between sentences in all three paragraphs, as well as intellectual completeness.

The famous linguist J. Tojiev also expresses his views on text units in his article "Approaching the text": "In our opinion, speech and super-syntactic integrity can be parallel text units. Of course, it is wrong to say that a text unit is either a sentence or a super-syntactic whole. "Supersyntactic integrity, if interpreted from the point of view of M. Yuldashev (he seems to have correctly defined it), can also consist of paragraphs." Based on these considerations, we can say that it is advisable to

consider the super-syntactic unit and sentence as the main units of the text.

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## COMMON PROBLEMS AND LEARNING THE TERMS OF NATIONAL CULTURE IN EDUCATION PROCESS

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### ANNOTATION

*In this article author points that, common problems and learning the terms of national culture in education process, giving some examples in Uzbek works, and in education process how it can appear to teach, critical thoughts for mistakes and contrarily achievements in the translation of some fictions.*

**KEY WORDS:** *expressions, proverbs, culture, syntactic knowledge, flective and agglutinative languages, medicine, agriculture.*

### DISCUSSION

Learning the terms which express our culture and tradition is one of the most effective and important process that hardly any people dealt with this branch and in the following scientific research we tried to observe them in some Uzbek works.

When it comes to clarify them, the first one is the basic rule that if the translators' level is good enough and his or her vocabulary is wide translation process may seem to him or her easy and enjoyable. Cause is that, by translating they acquire their knowledge about various fields or spheres. For instance, let's take the word "kolxozchi". To translate this word, the meaning of the word should be clear to us. It is a fact that, at the present time this is an archaic word as no one uses it. However, people who lived in the XX century "kolxozchi" used a lot. At that time a lot of people worked as a group and this group called "Коллективное хозяйство". It is translated into English "Farmer". For that reason, translators should be keen on translating lexemes.

Uzbek writer-translators lived in the XX century defined their work well and readers can get much pleasure by reading their works. There is a question here again: "Did those translation variants of Uzbek literature relating to the XX century attracted readers enough or not?". In my point of view, they could do their purpose in front of themselves, they could show the origin of the works in other languages as they are.

Here we can see some plays translated into English by specialists such as "Days Gone By"

("O'tkan kunlar"), "Night and Day" ("Kecha va kunduz"), "Scorpion from the Altar" ("Mehrobdan chayon") and etc. In contrast, their translation verses are not well enough, you cannot enjoy by translation verses so much as original text. For instance, in "Days Gone By", according to the specialists, translation was done technically and colorfulness is not enough, less attractive. This means that world readers are not being able to enjoy our masterpieces and cannot feel the atmosphere.

Let's take another work "Pomegranate" ("Anor") written by Abdulla Kahhor. As we know well, Abdulla Kahhor has his role in Uzbek Literature as his works are meaningful and attract the readers all the time. He saved the words, using less words, but managed to keep meaningful works. One of them is "Pomegranate" and it describes pure Uzbek nationality, their life style, economical system of that period, its language is totally national and it receives the nationalism. Translation version was done by Shuhrat Sattorov and he utilized various colorful words to express the reality of the story. However, there are some confusions and wrong usage of words in the translation version of this book. Both English and Uzbek versions are given to analyze or comparing the meaning:

- "Turobjonning bu so'zlari xotining qulog'iga notayin bir g'oldirash bo'lib kirar edi. Uning Turobjon bilan uy qilganiga uch yil bo'lib kelayotir, nazarida, bu odam shu uch yildan beri g'oldirabkelgan, hozirgisi go'yo shuning davomiday edi".



- “Turobjon’s words seemed to his wife like pointless mumbling. They had been married for three years and during this time her husband had done nothing but mumble. This mumble was a continuation of those mumbles” (2).

From this example, Turobjon never mumbles and had not mumbled by that time. The translation version refers to that Turobjon always mumbles. In this situation readers may misunderstand the real meaning. In the woman’s thinking her husband had always mumbled since they got married and at that time the wife heard as if her husband had been continuing his mumbles.

On the whole, we can say that national terms which express our nation and culture can be appeared in various plays that can give us a chance to observe deeply and effectively. And this process can go with the help of literary translation and it requires an interpreter particular diligence and scholarship as it was mentioned above. The translator must have knowledge in all spheres such as medicine, literature, geography, history. In addition to this, one of the common ways to improve translating watching movies, reading historical books or science fictions or other books that can be handy for them. One thing that is really important is finding correct version of proverbs from one language into another if there is no chance to translate them accurately. What is more, translator should feel his or her work as a participant or main character in the work, and terms related to different fields such as medical, economy, biology, politics and so on so forth should be known or masters of those branches should work together as a team.

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## PROSPECTS OF APPLICATION OF THE METHOD OF "MILL" IN TEACHING THE TOPIC "EVALUATION OF DEVELOPMENT OF EDUCATIONAL TECHNOLOGIES"

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### ANNOTATION

*This article discusses the evolution of educational technology in the educational process, its early stages and prospects to date, the application of the method of "Mill", one of the modern and effective methods of teaching in the classroom, all its components. Demonstration and mobility are issues that are understandable and interesting for students*

**KEYWORDS:** *evolution, technology, educational process, method, oral communication, teaching aids, written teaching aids, video and radio technologies, computer technology, digital technologies*

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### DISCUSSION

The development of the education system is one of the key factors determining the future of this country, because the knowledge and skills that will build the future of the country will be developed in educational institutions. For this reason, if we pay attention to the policies of many developed and developing countries, we can see that the field of education is developing rapidly. As President Islam Karimov said, "If a state pays more attention to education and youth, its future will be great." One of the major steps in this direction is the development of the concept of development of public education, in which Uzbekistan, like many developed countries, pays great attention to education. The decree "On approval of the Concept of development of the public education system of the Republic of Uzbekistan until 2030"<sup>1</sup> provides for the following:

- Qualitative updating of the content of the system of continuing education, as well as training, retraining and advanced training of professionals;

- Improving teaching methods, gradual implementation of the principles of individualization in the educational process;
- introduction of modern information and communication technologies and innovative projects in the field of public education;

Ensuring the implementation of the above tasks imposes a high level of recognition and responsibility on the work of teachers, and more work on them requires the introduction of new methods and technologies. In the following article, we will look at the topic of "Evolution of Educational Technologies Development" in a demonstration and effective "Mill" method used in education.

#### Application of the method "Mill" in the classroom

**Scientific and technical base required for the organization of the method:** pre-drawn mill drawings, sticky small pieces of paper, markers and pens for writing, etc.

**Step 1.** At the same time, the teacher explains the topic to the students and forms the basic concepts and knowledge on the topic. For example, in order to explain the topic of "Evolution of educational technologies" in this article, we can give the following information:

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<sup>1</sup> On April 29, 2019, he signed the Decree "On approval of the Concept of development of the public education system of the Republic of Uzbekistan until 2030",



The development of educational technology goes back a long way, people's interest in nature and their desire to study it led to the development of educational technology, including the evolution of which can be divided into the following periods:

- Verbal communication (word of mouth). In ancient times, verbal communication was the only form of communication. So the study was oral and remains so in some countries today. There are reports that education was done orally in ancient Greece.

- Writing as a learning tool. The written messages date back to earlier days of the Bible. The story of Moses tells the story of how Moses used the Ten Commandments to deliver written commands to the Israelites.

In the fifteenth century, European publishing created the written information of today; ready and accessible. The increase in demand for written information by businesses and government agencies in Europe, the decline in formal education has led to an increase in the number of people in Europe who want to learn to increase their literacy rate.

- Video and radio technologies. The British Broadcasting Corporation began broadcasting educational-based radio broadcasts to educational institutions in the 1920s. In 1924, the BBC launched its first adult education program, Human Insects.

Educational television programs, on the other hand, emerged in the 1960s. In 1968, the British government created the Open University Program in partnership with the BBC, which was designed specifically to show TV series designed for university students.

- Computer systems technology. Computers appeared in the early 1930s, but the first portable computer appeared in 1981. Since its inception, everyone has known that all quality computers become part of the basic computer in search. Also, rightly so, the laptop has become a valuable learning tool.

In 1986, Toshiba launched the T1100 laptop for consumers around the world. The following year, Apple launched the Mac Pro laptop, which was later renamed the Powerbook.

It was ice on the cake. In 1990, with the development of the Text Markup language, the World Wide Web (www) became more active. This computer language program (HTML) makes it easy for Internet users to browse.

In 1993, Apple Inc. developed the first personal digital assistants (PDA's) used in classrooms. By 1998, almost every educational institution in the United States had a computer and a stable Internet connection. Computer machines make life easier for educational institutions.

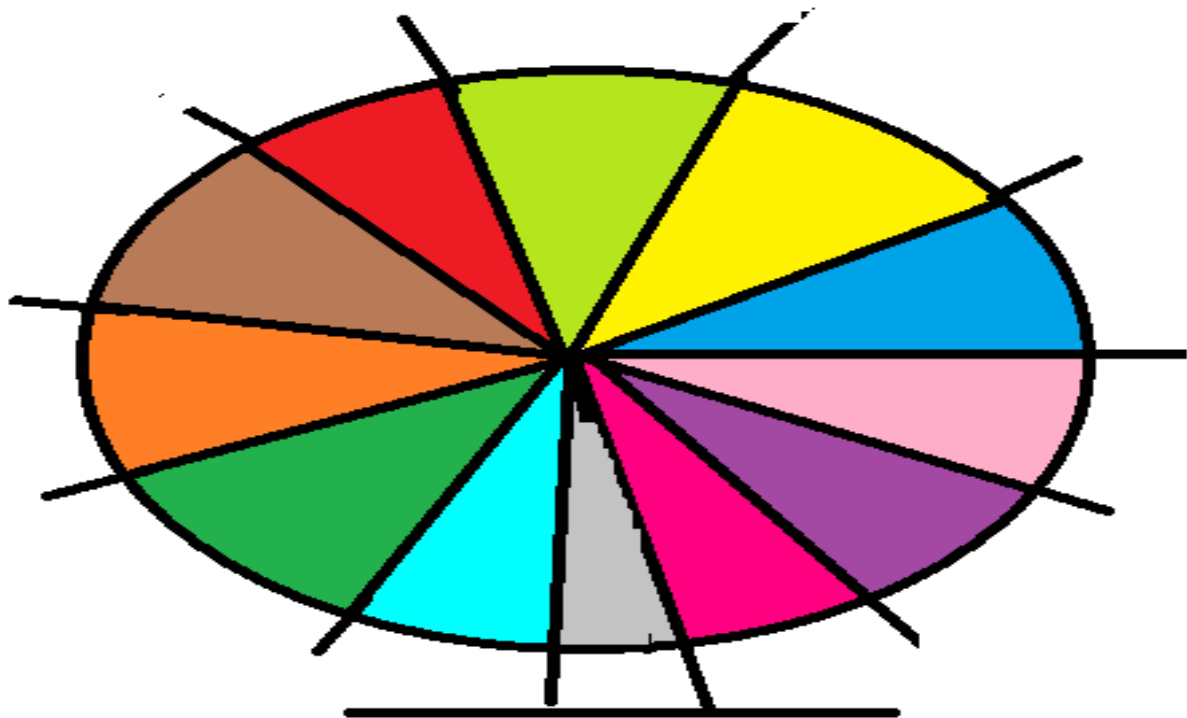
- The future of education. The future of education looks bright. Nowadays, almost everyone is stuck on the internet. The advent of social media platforms like Twitter and Facebook has made learning easier to some extent.

Social media is evolving as a new form of communication between teachers and students. Teachers use social media to communicate with students individually or to engage students to communicate with each other through social media groups.

The Internet has made it possible to develop new ways of communication, such as webcams and Skype. For example, students can now do research on the Internet using Google search.

Giving this and other information will give you an idea of the topic.

**Step 2.** Information is provided on the process of consolidating the knowledge gained on the topic and helping to preserve it in the memory for a long time, in which students are divided into groups and distributed pre-prepared national pictures for them (Figure 1). They are explained to students the process of working with the method and the tasks to be performed in it. For example, this means that each group will have to place the given mill in a certain sequence, writing the information on small pieces of paper around the circle, starting from the bottom. For example, in this article, the development of educational technologies is moved up from the initial stage, and the data are arranged in this order, with examples.

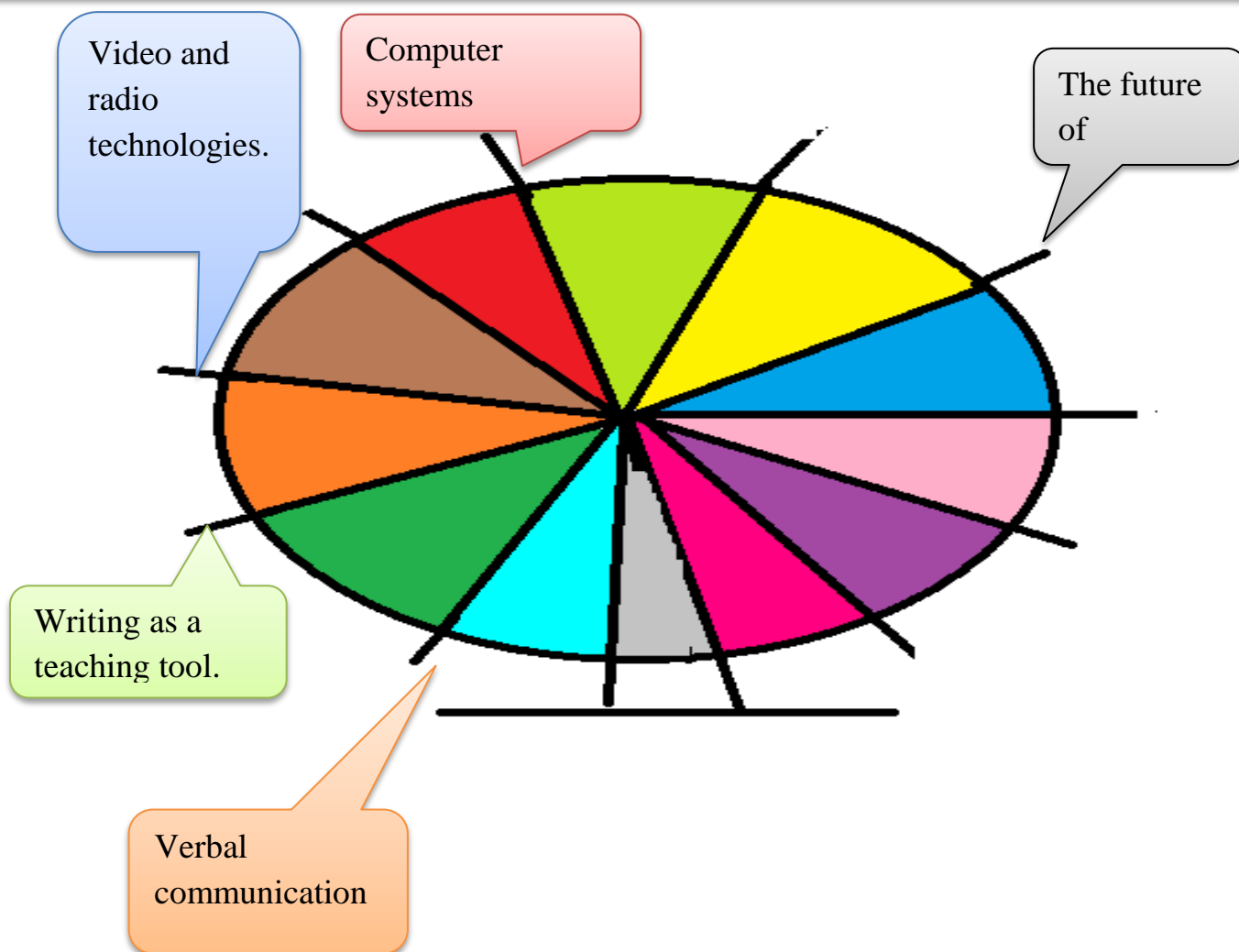


**Figure 1. Sample drawing for the Mill method**

*Step 3* In this case, students begin the process of developing the method, and this process is monitored and evaluated by the teacher. This process requires students to be smart, resourceful, and have the ability to think logically. In this process, students will need

to move quickly in agreement with the group and try to finish first. It will be possible for students to complete the national as shown in Figure 2.





**Figure 2 Example of Mill filling**

**Step 4.** In the final stage, all the work done is summarized, students analyze the topic, commenting on their work, and the groups that can show the best work are encouraged.

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## PEA POD FOR COAGULATION OF TURBID WATER

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### ABSTRACT

Affordable and efficient Natural coagulants are considered substitutes to chemical coagulants for use in developing countries where raw materials such as *Cicer arietinum* (green pea) are readily available. The research aims to determine the effectiveness of Pea pod extract as coagulants in water treatment. Pea pod powder was prepared, Stock solution of pea pod coagulants of 10% concentration was also prepared, the stock solution was diluted and was used to prepare water samples of high and medium turbidities of high (416 NTU) and medium (162 NTU) and low (40 NTU) turbid waters While the untreated water was collected from Kura Open channel surface water and well water (Underground water) at Zoo road of initial turbidity of (297NTU) and (29NTU) respectively and Jar test procedure for coagulation was conducted for the different water samples. The result The Optimum Dose was 1600mg/L corresponding to the Highest Turbidity Removal Efficiency of High Turbid water, Medium turbid water, Low turbid water, Kura Surface water (96.63, 82.7, 67.5, and 81.5% respectively) and Optimum Dose for Zoo road well water was 1200mg/L at Turbidity removal efficiency of 50%. At optimum doses (1600mg/l for high, medium, low and Kura surface turbid waters and 1200mg/L for Zoo road well water), pH reduced drastically as Turbidity Removal Efficiency increases ranging from 5.5-6.7 the Optimum pH values after treatment were 5.9, 6.1, 6.65, 6.2 and 6.0 respectively which were within the range set by WHO 2018 standard for drinking water i.e. (6.5-8.5). The Optimum Residual turbidities were 14, 28, 13, 55 and 10NTU for Synthetic High Turbid water, Medium turbid water, Low turbid water, Kura Surface water and Zoo road well waters respectively. High Turbid water, Low turbid water and Zoo road well waters were below 25NTU Max. Residual turbidity for Standard Drinking Water Quality WHO (2018).

For Temperature variation with Turbidity removal efficiencies; Turbidity removal initially varies directly with temperature from 0.5°C to 20°C and the maximum turbidity removal from high, medium, low and Kura surface turbid waters of 96.2 %, 82.7 %, 67.5 % and 81.5% were recorded at 30°C for the optimum dose of 1600mg/l respectively and the maximum turbidity removal from Zoo road water of 50% was recorded at 20°C for the optimum dose of 1200mg/L. It was recommended that The mixing and settling time of water treated with Pea pod should be studied to observe their impacts on turbidity removal. Study should be done on pea pod as coagulant aids with alum and other coagulants. Also, research should be done on the efficiency of Pea pod as an adsorbent and heavy metal removal in waste water treatment.

**KEYWORDS:** Pea Pod, Coagulant, Hard Water

### 1. INTRODUCTION

In rural and semi-urban communities in developing countries, people living in extreme poverty are presently drinking highly turbid and microbiologically contaminated water as they lack the knowledge of proper drinking water treatment and also cannot afford the high cost of chemical coagulants. Natural coagulants have bright future and are concerned by many researchers because of their abundant source, low price, environment friendly, multifunction, and biodegradable nature in water

purification (Madhavi et al., 2013) and (Kawamura, 1991).

*Cicer arietinum* (green pea) is a legume of the subfamily Faboideae of the flowering plant family (Saha et al., 2014). It is known as gram or Bengal gram or Egyptian pea. Ancient people associated pea with medical uses. It is widely grown in India, Turkey, and Nigeria. It is an annual plant with a life cycle of one year. The immature peas are used for vegetable. Fresh, canned or frozen matured peas are used as dry peas or slit peas. It is starchy, high in fiber, vitamins, minerals, proteins and lutein. Various researches on the nutritional value of pea were



conducted by a number of researchers including Meenakshi (2015), and on its coagulating characteristics by Marina *et al.*, (2005). In addition, Saha *et al.*, (2014) reported that the presence of bioactive compounds in pea pod is equal to that present in pea cotyledon or seed. As such, this research focuses on the effectiveness of Pea pod extract as coagulants in water treatment.

## 2. METHODOLOGY

### 2.1 PEA (CICER ARIETINUM) POD SAMPLES

Good quality fresh Pod of the Peas will be selected manually and randomly (in accordance with Kwaji *et al.*, (2010) from the market, and will be authenticated from the Department of Botany and dried under room temperature for two weeks.

### 2.2 PREPARATION OF PEA POD POWDERS AND CRUDE EXTRACTS

The dried leaves were separately grounded to fine powder using domestic blender. The ground powders were then sieved through a 210µm sieve. The extraction was in accordance with Aweng *et al.*, (2012), but was mixed with a different mixer: Crude extracts was prepared by using 500ml of distilled water to 50g of the prepared powder, which was mixed by a British made (RPM=1400, HP=1/86, watt=8.6) stirrer for 60min and left to settle for 20 minutes to make 10% stock solution of the Pea pod extract. The crude extracts were finally filtered through Whatman filter paper. The filtrates were prepared at the time of conducting the tests, since deterioration sets in, with delay (Muyibi *et al.*, 1995). The filtrates were used within 48 hours.

### 2.3 PREPARATION OF SYNTHETIC WATER

Synthetic raw water was prepared to guarantee the homogeneity of raw water to be used with specific concentrations.

### 2.4 PREPARATION OF STOCK SOLUTION OF PEA POD

The stock suspension was prepared as described by Chidinand Patil *et al.*, (2015). Ten grams (50g) of bentonite, kaolin was added to 500ml of water and then was allowed to soak for 24 hours that was used as stock solution. The stock solution was diluted and was used to prepare water samples of high and medium turbidities of high (416 NTU) and medium (162 NTU) and low (40 NTU) turbid waters. While the untreated water was collected from Kura Open channel surface water and well water (Underground water) at Zoo road, Kano then tested to have an initial turbidity of (297NTU) and (29NTU) respectively.

## 2.5 PHYTOCHEMICAL ANALYSES OF PEA POD

Complete proximate standard procedure analyses of the pea seed and pod were done in department of animal science and also in biochemistry department Bayero University Kano.

### 2.6 TURBIDITY TEST

Coagulation/flocculation test was carried out in 'Jar Test' (with PEF Flocculation Test Unit), using three beakers for a dose. 0.25ml of the Pea pod filtrate was added to 300ml of synthesized water. The mixture was stirred at 95 rpm for 3 min. Thereafter, the beakers were left to rest for 120 min. The procedure was repeated using 0.5, 1.0, 2.0, 3.0, 5.0 and 7.0ml of the filtrate (Karina *et al.*, 2013 and Aweng, 2012).

100ml of the sample was taken from the top of each beaker for the tests using a turbidity meter (SGE-200BS). Coagulation activity was calculated using (BUK Civil Engineering Laboratory Manual for 500L):

$$\text{Coagulation activity (\%)} = \frac{T_s - T_b}{T_b} \times 100$$

.....Equ. 2

Where:

T<sub>s</sub> – Turbidity concentration after treatment (NTU)

T<sub>b</sub> – Turbidity concentration of blank (NTU)

### JAR TESTS

Jar tests was performed using six paddles PEF Flocculation Test Unit (Serial No. PEF 0031/11). Coagulant doses were used respectively for high, medium and low turbidities. The pH values of the samples were taken using PHS-25 pH meter (Ahamed *et al.*, 2010).

### 2.7 TEMPERATURE VARIATION WITH TURBIDITY

Jar tests was completed for optimum doses for high turbidity, medium and low turbidity of Pea pod extract at 40, 30, 20, 10, 5 and 0.5°C (Larry *et al.*, 2001) but with slight variation starting from 0°C to 50°C. The procedure for the jar test was stated already in Section above. Gallenkamp water bath and a controlled fridge were used to control temperature (and they were different from instruments used in the referenced method).

### 2.8 VALIDITY OF RESULTS

Raw water a sample was collected and the above tests were conducted on them for validity in accordance with the procedure outlined above.

## STATISTICAL DATA ANALYSIS

The following statistical data analysis software was used in;

1. Microsoft Excel
2. R- Programmer

### 3. RESULT AND DISCUSSION

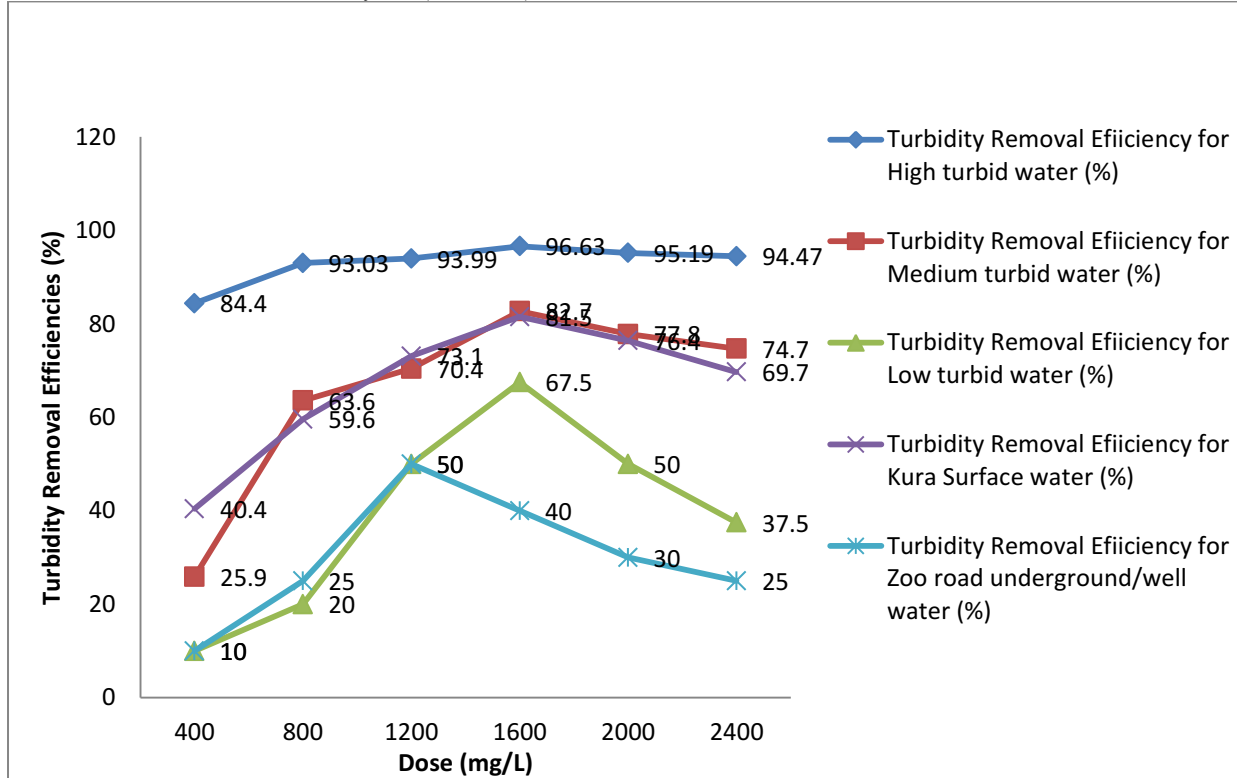
#### 3.1 VARIATION OF DOSE ON TURBIDITY REMOVAL EFFICIENCIES

**TABLE 3.1: COMPARISON OF RESIDUAL TURBIDITY (NTU) WITH COAGULANT DOSE IN (MG/L) FOR PEA POD UNSTORED**

SOURCE		DOSES (mg/L)						
		Initial Turbidity (NTU)	400	800	1200	1600	2000	2400
		Residual Turbidity (NTU)						
Synthetic Turbid waters (NTU)	High turbid water	416	65	29	25	14	20	23
	Medium turbid water	162	120	59	48	28	36	41
	Low turbid water	40	36	32	20	13	20	25
Kura Open Channel Surface Water (NTU)		297	177	120	80	55	70	90
Zoo road Underground (Well) water (NTU)		20	18	15	10	12	14	15

Synthetic water was prepared at high turbidity (416NTU), medium turbidity (162NTU) and low turbidity (40NTU). Untreated water was collected from Kura Open channel surface water and well water (Underground water) at Zoo road, Kano then tested to have an initial turbidity of (297NTU) and

(29NTU) respectively. Figure 3.1 shows the effects of doses on turbidity removal efficiencies for High turbid water, Medium turbid water, Low turbid water, Kura Surface Water and zoo road Underground/Well Water for Pea Pod not stored.



**Figure 3.1: The Effects of Doses on Turbidity Removal Efficiencies for Different Water Samples for Pea Pod unstored**



### From Figure 3.1;

The Turbidity Removal Efficiencies of the water samples; High Turbid water, Medium turbid water, Low turbid water, Kura Surface water and Zoo road well water values started from (84.4-94.47%), (25.90-74.70%), (10-37.5%), (40-69.70%) and (10-25%) respectively for 400-2400mg/L Dose. The Turbidity removal efficiency increases with increase in Dose at the beginning, until it gradually tends to reach its Optimum Dose at 1600mg/L corresponding to the Highest Turbidity Removal Efficiency of High Turbid water, Medium turbid water, Low turbid water, Kura Surface water (96.63, 82.7, 67.5, 81.5% respectively) and Optimum Dose for Zoo road well water was 1200mg/L at Turbidity removal efficiency of 50%. Then the Turbidity removal Efficiencies decreases after optimum doses were reached.

There was, therefore, a notable decrease in turbidity of the synthetic high and medium turbid waters. This can be compared with Pea nut of 92% (Birima *et al.*, 2013), Pea seed of 84.7% and 65.9% (Choubey *et al.*, 2012) *Cassia alata* with coagulation activity of 93.33% (Aweng *et al.*, 2012), water melon seed of 88% (Muhammad *et al.*, 2015), *Bosica senegalensis* at optimum dose of 50mg/l reduces turbidity from 160NTU to 15-NTU, 23.8 to 2.7NTU for High and Medium Turbid Water respectively (Osama 2001), *Cicer arietinum* 95.89% (Azfaruzzaman 2011) and *Moringa oleifera* seed extract of 92.99% (Mustapha, 2013)

The fall in the coagulation activity in doses above 1600mg/l for high turbid and medium turbid waters could be attributed to the coagulants that remained in excess of the optimum coagulant dose.

The increase in residual turbidity after the optimum point could also be due to increase in plant chlorophyll concentration in water (Kihampa *et al.*, 2011). In that work, turbidity removal, using *Solanum incunum*, was 96, 97 and 75% for raw water with turbidity of 450, 300 and 105 NTU respectively.

For the Kura surface water and Zoo road well water treated separately with Pea pod extract, the coagulants appeared much less effective with, having only 81.5% and 50% Turbidity Removal efficiency at optimum dose respectively. It is worth mentioning that turbidity is caused by chemical, biological or

physical factors and its removal depends on the type and size of the impurities present. In fact, Ahamed *et al.*, (2010) emphasized that there were many parameters that affect coagulation performance (and hence turbidity removal) and that include the amount and type of particulate material, the amount and composition of natural organic matter (NOM), and chemical and physical properties of the water. The common parameters are: coagulant type, dose and pH (Yan *et al.*, 2008 and Uyak, 2007). Coagulation process is usually dependent on a multitude of factors: initial turbidity, pH-value, composition of water, temperature, intensity and duration of stirring, du ring mixing and nature and dose of the coagulant. Besides, the coagulation process depends on the extraction mode (Okuda *et al.*, 1999).

Many researches, they said, have shown that natural organic matter reacts or binds with metal ion coagulants and that coagulant dosage is determined by NOM-metal ion interaction and not particle-metal ion interaction (Matilainen *et al.*, 2002).

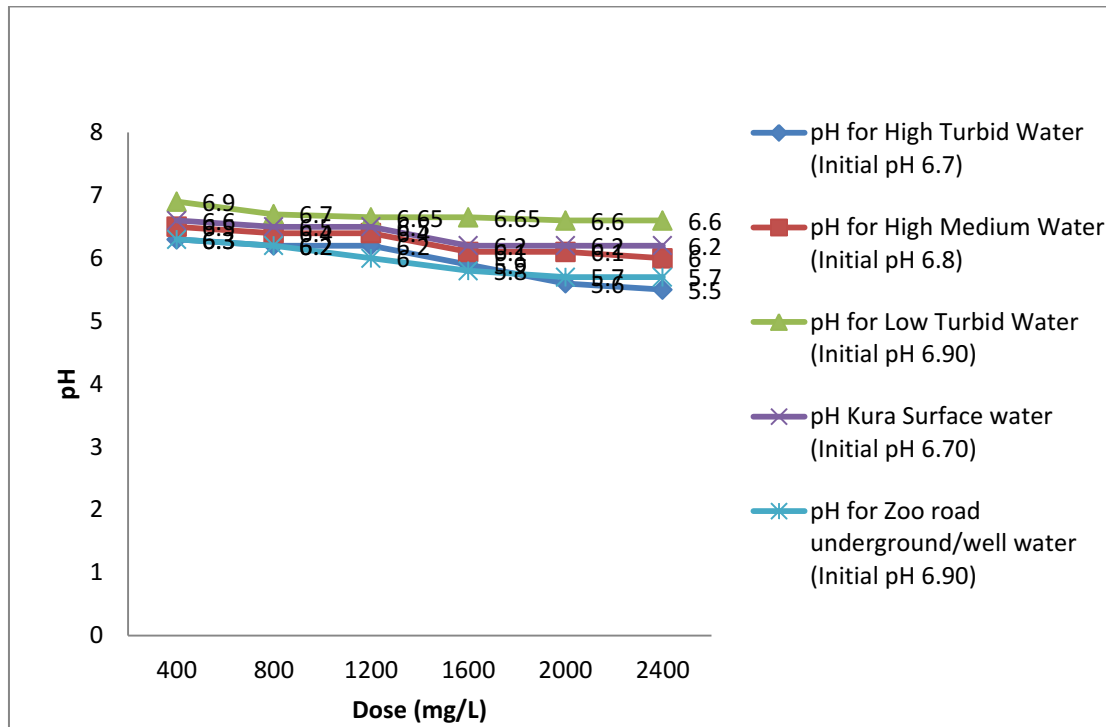
The much difference in effectiveness of the two coagulants in the treatment of synthetic and natural turbid waters could be attributed to these factors. The natural turbid water used (Kura Open Surface channels and Zoo road well water) could have contained NOM and other substances that the coagulants used did not have effect on.

Appendix A, gives the variation of residual turbidities with the doses. It can be observed from the table that, although, the turbidity of the raw water was drastically reduced, the residual turbidity was still higher than 5NTU specified by WHO 2018 standard for Drinking Water Quality.

### 3.2 EFFECT OF THE PEA POD EXTRACT ON pH OF WATER

The initial pH values of the water samples were 6.7, 6.8, 6.9, 6.7 and 6.9 respectively for high, medium and low, Kura Open Channel Surface Water and Zoo road underground (Well) water turbidities, and the initial pH of the Pea Pod Extract was 3.5.

However, when the high, medium and low, Kura Open Channel Surface Water and Zoo road Underground (Well) waters were treated with various doses of the Pea pod extract, the pH values changed (towards alkalinity) as shown.



**Figure 3.2: The Effects of Doses On pH for Different Water Samples for Pea Pod unstored**

At optimum doses (1600mg/l for high, medium, low and Kura surface turbid waters and 1200mg/L for Zoo road well water), the Optimum pH values after treatment were 5.9, 6.1, 6.65, 6.2 and 6.0 respectively.

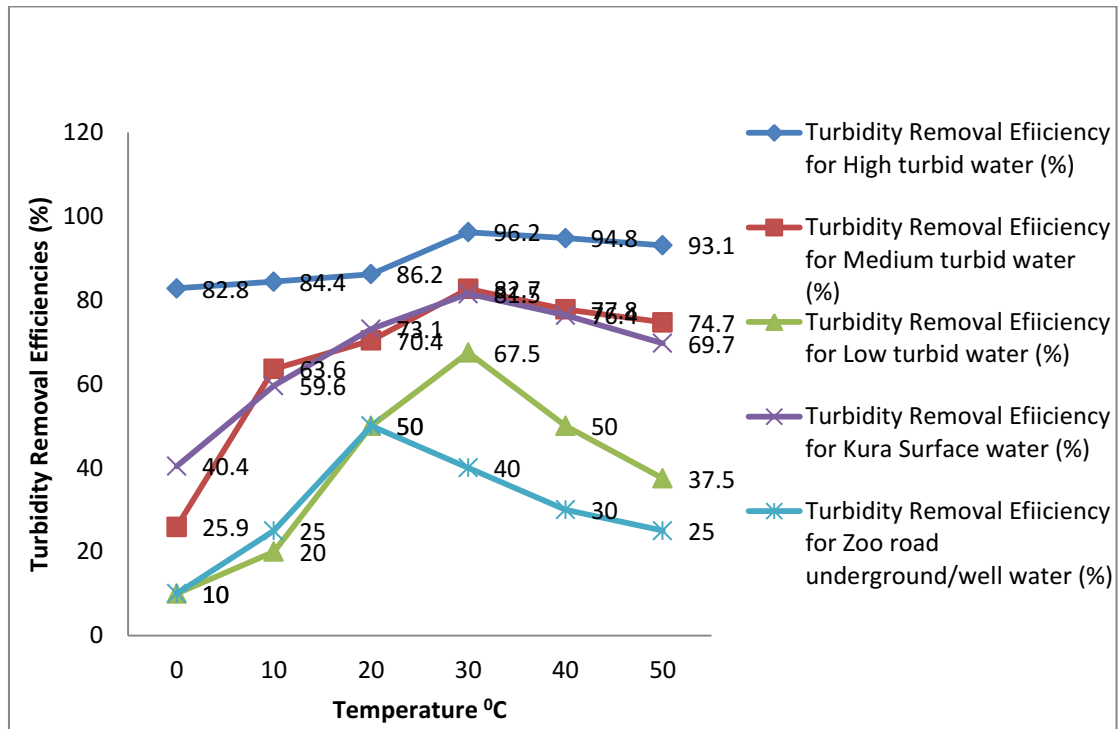
In a similar research on water treatment, the pH was observed in alkaline nature after treatment with Moringa seed powder, confirmed by the work of Jodi *et al.*, (2012). Musa (2016) in his work discovered a similar pH reduction while treating water with *Poliostigma thonningischum* and *Tamarinds india L.* leaves extracts. Sethupathy (2015), in his work, discovered a similar pH reduction while treating water with *Moringa oleifera* seed powder. Also Chidanand and Manika (2015)

observed pH shift to slightly alkaline nature after treatment with Pea seed powder.

Although the pH of the water varied as a result of the introduction of the plant extracts, it was within the range set by WHO 2018 standard for drinking water i.e. (6.5-8.5).

### 3.3 EFFECT OF TEMPERATURE ON TURBIDITY REMOVAL

Figure 3.3 shows the variation of Temperature on turbidity removal efficiencies for High, medium, low synthetic turbid water, Kura surface water and Zoo road well water.



**Figure 3.3: Effect of Temperature °C on Turbidity Removal Different Water Samples for Pea pod unstored**

Figure 3.3 shows that, turbidity removal initially varies directly with temperature from 0.5°C to 20°C, with some little deviations at 5°C, until it reached maximum at 30°C for high, medium, low and Kura surface turbid waters and 20°C for Zoo road well water. It then began to vary indirectly. The maximum turbidity removal from high, medium, low and Kura surface turbid waters of 96.2 %, 82.7 %, 67.5 % and 81.5% were recorded at 30°C for the optimum dose of 1600mg/l respectively and the maximum turbidity removal from Zoo road water of 50% was recorded at 20°C for the optimum dose of 1200mg/l.

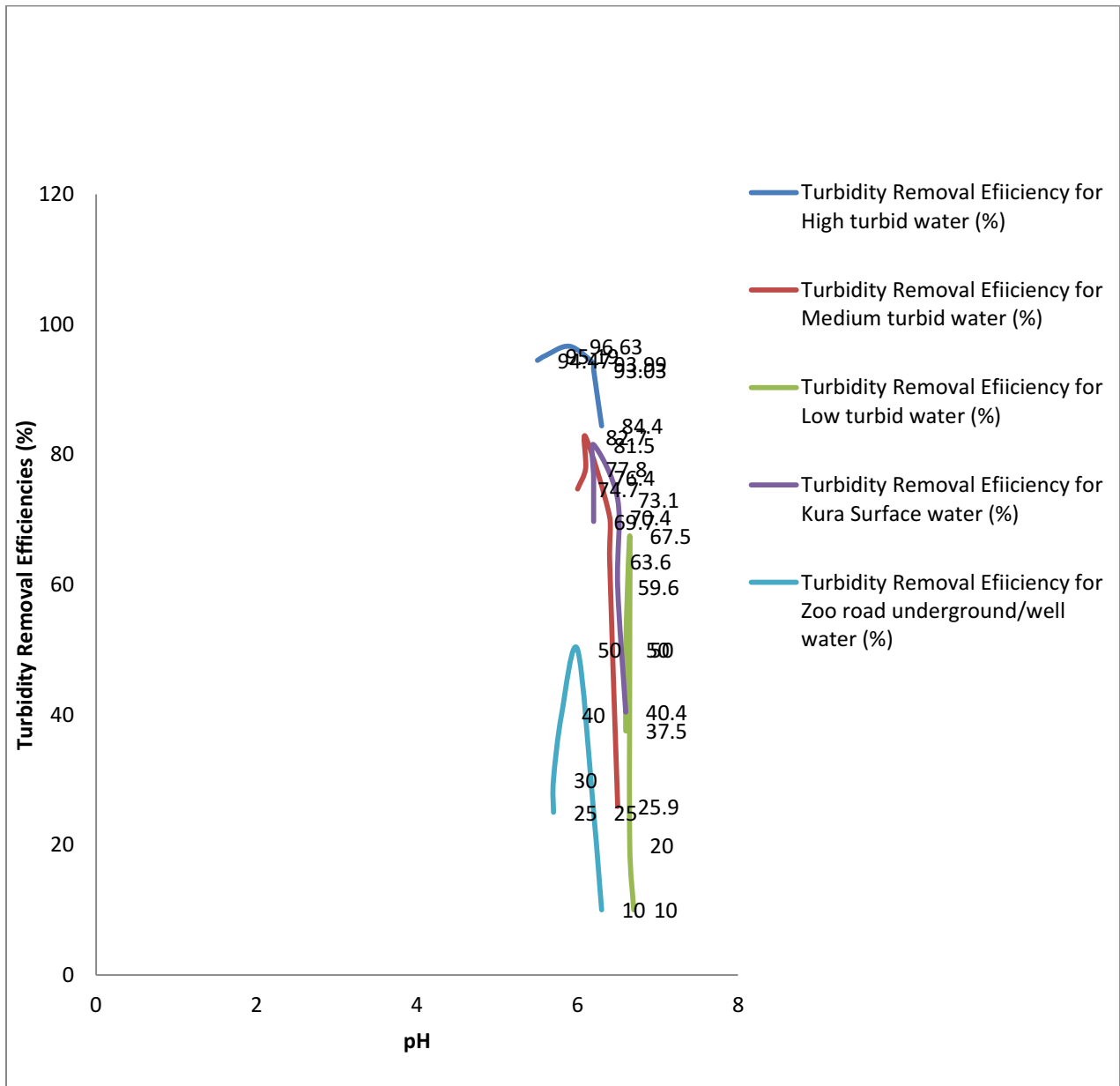
The deviation of the graph at 5°C could be due to anomalous change in density of water as the temperature varied from 0.5°C to 40°C. At temperatures higher than 30°C, the suspended particles in the water might have gained enough kinetic energy to resist the effect of the coagulants, resulting in lesser turbidity removal.

Udaya *et al.*, (2013) revealed almost the same findings that turbidity reduction's best temperature ranges from 20-30 °C.

Also this finding is supported by Madhavi *et al.*, (2013) that turbidity reduction is mostly affected by cold temperatures. Rasha (2014) even argued that low temperatures would impair floc formation because of increased shear stress due to higher water viscosity. According to them, the effect of temperature on the best flocculation time required for efficient sedimentation becomes less when temperature increased to 25°C, and little difference in flocculation times at temperature range from 10 to 25°C, while much higher differences at temperatures less than 10°C.

### 3.4 VARIATION OF TURBIDITY WITH pH

Figure 3.4 shows the variation of Turbidity Removal Efficiencies with for High, medium, low synthetic turbid water, Kura surface water and Zoo road well water.



**Figure 3.4: The Effects of Turbidity Removal Efficiencies on pH for Different Water Samples for Pea Pod Unstored**

It can be seen from Figure 3.4 that pH reduced drastically as Turbidity Removal Efficiency increases ranging from 5.5-6.7. It then changed a bit at optimum dose, and then continues to lower for all the water samples.

A wider difference was observed in pH reduction for synthetic high turbid water sample from 6.3-5.5 compared to that of Medium, low, Kura surface and Zoo road well water samples reductions from pH of 6.6-6, 6.7-6, 6.6-6.2 and 6.3-5.7 respectively, indicating the much impact of Turbidity variation with pH with High Turbid water followed by Low turbid water, Underground water, Medium turbid water and surface water.

Musa (2016) in his work discovered a similar much pH reduction with high turbid water while

treating water with *Poliostigma thonningis* and *Tamarinds india L.* leaves extracts. Also, Osama (2001) finds much pH reduction with increase in Turbidity removal for high turbid water treated with *Bosica senegalensis* extract.

Researchers like Udaya *et al.*, (2013), Chidanand *et al.*, (2015) reported similar observations.

Ahamed *et al.*, (2010) in Yan *et al.*, (2008) said that the pH at which coagulation occurs is the most important parameter for proper coagulation performance as it affects the surface charge of colloids, the charge of NOM functional group and the charge of the dissolved phase solubility. They pointed out the need for controlling the pH of high turbid water for effective turbidity removal and found





that the best turbidity removal is achieved between pH 5 and 6. They, however, showed that for NOM, higher coagulant doses would be required at higher pH values.

Harashit Kumar Mandal (2014), on his part, argued that there was no direct influence of pH on turbidity, although his research was specific on wastewater.

#### 4. CONCLUSION AND RECOMMENDATION

The Optimum Dose was 1600mg/L corresponding to the Highest Turbidity Removal Efficiency of High Turbid water, Medium turbid water, Low turbid water, Kura Surface water (96.63, 82.7, 67.5, and 81.5% respectively) and Optimum Dose for Zoo road well water was 1200mg/L at Turbidity removal efficiency of 50%.

At optimum doses (1600mg/l for high, medium, low and Kura surface turbid waters and 1200mg/L for Zoo road well water), pH reduced drastically as Turbidity Removal Efficiency increases ranging from 5.5-6.7 the Optimum pH values after treatment were 5.9, 6.1, 6.65, 6.2 and 6.0 respectively which were within the range set by WHO 2018 standard for drinking water i.e. (6.5-8.5). The Optimum Residual turbidities were 14, 28, 13, 55 and 10NTU for Synthetic High Turbid water, Medium turbid water, Low turbid water, Kura Surface water and Zoo road well waters respectively. High Turbid water, Low turbid water and Zoo road well waters were below 25NTU Max. Residual turbidity for Standard drinking water WHO (2018).

For Temperature variation with Turbidity removal efficiencies; Turbidity removal initially varies directly with temperature from 0.5°C to 20°C and the maximum turbidity removal from high, medium, low and Kura surface turbid waters of 96.2 %, 82.7 %, 67.5 % and 81.5% were recorded at 30°C for the optimum dose of 1600mg/l respectively and the maximum turbidity removal from Zoo road water of 50% was recorded at 20°C for the optimum dose of 1200mg/l.

It was recommended that The mixing and settling time of water treated with Pea pod should be studied to observe their impacts on turbidity removal. Study should be done on pea pod as coagulant aids with alum and other coagulants. Also, research should be done on the efficiency of Pea pod as an adsorbent and heavy metal removal in waste water treatment.

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## FUNDING TERTIARY EDUCATION FOR ECONOMIC DEVELOPMENT: NIGERIAN SCORE CARD

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### ABSTRACT

*This study examines funding tertiary education for economic development: Nigerian score card for the period 1999-2018. The empirical result of the multiple regressions (OLS) revealed that all employed explanatory variables have marginal effect on economic development. Results show that recurrent expenditure on education and TET-Fund exert positive influences on economic development while capital expenditure on education exerts negative influence on economic development. The study concludes that Nigeria witnessed backwardness in economic development following poor funding and misappropriation of fund for tertiary education in the country. The study therefore recommends an increase of more than 18% in government budgetary allocation to the educational sector; shun the unhealthy interference of government or its agency in the utilization of allocated funds; an improvement in the facilities and welfare of educational staff, alongside regular monitoring of the level of fund utilization in the educational sector to enhance literacy rate, standard of living and employment level in Nigeria.*

**KEYWORDS:** *Funding, Tertiary Education, Human Development Index, Nigeria*

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### 1. INTRODUCTION

With rapid population growth in Nigeria, economic development has become a thing of great concern to enlightened individuals, organizations as well as the government, considering the ills of social crimes, security challenges, corruption, low standard of living, low productivity, among others which are associated with unmanaged population

growth (Gbarato, Visan, Eguru & Pamogho, 2019). This calls for quality education which does not only sharpens the human mind but also increases human capital, a pre-requisite for economic development amidst social, cultural as well as political development of the society (Akinsanya, 2007; Michael & Wumi, 2017). However, quality



education can only be assured by adequate funding (Ekankumo & Kemebaradikumo, 2014).

Tertiary institutions are well funded when they have the financial ability to meet up their infrastructural demands such as good road network, proper staffing, conducive and well-furnished staff offices and classrooms with stable electricity power supply, state-of-the-art instructional facilities, commensurate remuneration and allowances for personnel, research demands and conducive atmosphere capable of turning learners to qualified human capital needed for national productivity.

Although tertiary education in Nigeria has experienced a significant growth in terms of population expansion through increase in enrolment and establishment of additional institutions in the country (Erhieyovwe & Andrew, 2019), tertiary institutions in Nigeria suffers serious under funding which culminates to weak intellectuals (Nwangwu, 2005). Ndujihe (2019) attributed poor funding to the cause of the decay in the Nigerian education sector, especially tertiary education, which has resulted to frequent strikes by both academic and non-academic staff since the early 1990s. The UN on the basis of the Human Development Index (HDI) rated Nigeria as the 26<sup>th</sup> amidst the 54 African countries and 13<sup>th</sup> among the 16 West African countries in education. The infrastructural decay in our institutions of learning is quite alarming as the phenomenal expansion in the number of students enrolled in Nigerian tertiary institutions are mismatched in terms of inadequate class room and learning environment, ill-equipped library and laboratories for research; overcrowded hostel space and lack of funding for staff training and development (Nagbi & Micah, 2019), thereby turning in of half-baked graduates with low potentials and unemployable attributes.

In spite of the conscientious effort of the Government and its agency to resuscitate and sustain the educational level, the status quo has not attracted global commendations. The percent of fund budgeted for education in Nigeria has been small, irregular and marginal over the years, thus inhibits the significant role education plays in manpower development and economic growth and development of the nation at large. It is against this background that this paper seeks to investigate the nexus between the funding of tertiary education and economic development in Nigeria for the democratic period between 1999 and 2018. The objectives of this study are to:

- i) Examine the nature of relationship between recurrent expenditure on education and human development index in Nigeria.
- ii) Investigate the nature of relationship between capital expenditure on education and human development index in Nigeria.
- iii) Evaluate the nature of relationship between special TET-Fund intervention and human Development index in Nigeria.

To achieve the above objective, the paper is organized as follows. Section one provides background to the study; section reviews some related literature; section three deals with data sources and methodology; section four discuss on the empirical result while section contains the conclusion remarks.

## 2. CONCEPTUAL ISSUES

Education is defined as the formal process by which the society deliberately spread its accumulated knowledge, skills, habits, customs and values from one generation to the other (Mohammed, Rufai & Azeez, 2016). Fafunwa (1994) defines education as an aggregate of all the processes by which a child or young adult develops abilities, attitudes and other forms of behavior which are of positive value to the society in which he lives. Education irrespective of the level is tailored to the attainment of nominative objectives of the nation. Tertiary education is conceived as the level of education acquired after secondary school in higher institutions of learning such as Universities, Polytechnics, Colleges of education, monotechnics and other institutions of higher learning offering or awarding correspondence courses, diplomas and certificates (Famade, Omiyale & Adebola, 2015). Mubashiru, Musiliu and Rasheed (2016) assert that tertiary education is a great leap towards maintaining human capital development in a country as well achieving global competitiveness. Abdulkareem, Fakasi and Akinubi (2011) re-iterate that higher institutions are established to help a nation meet her global demand to produce relevant manpower to serve in different capacities as well as contribute positively to the socio –economic and political development of the nation's economy.

Famade et al., (2015) allude that public funding of education aims to equip people with the requisite knowledge; skills and capacity to enhance the quality of life, productivity and enable them participate actively in developmental process.



The number of tertiary institutions in Nigeria has proliferated from 1 University as at 1948 to 636 (Adeyemi, 2019). As observed below, while 299 of

them are privately owned, 337 are government owned tertiary institutions.

**Table 1.1 Approved Tertiary Institutions in Nigeria**

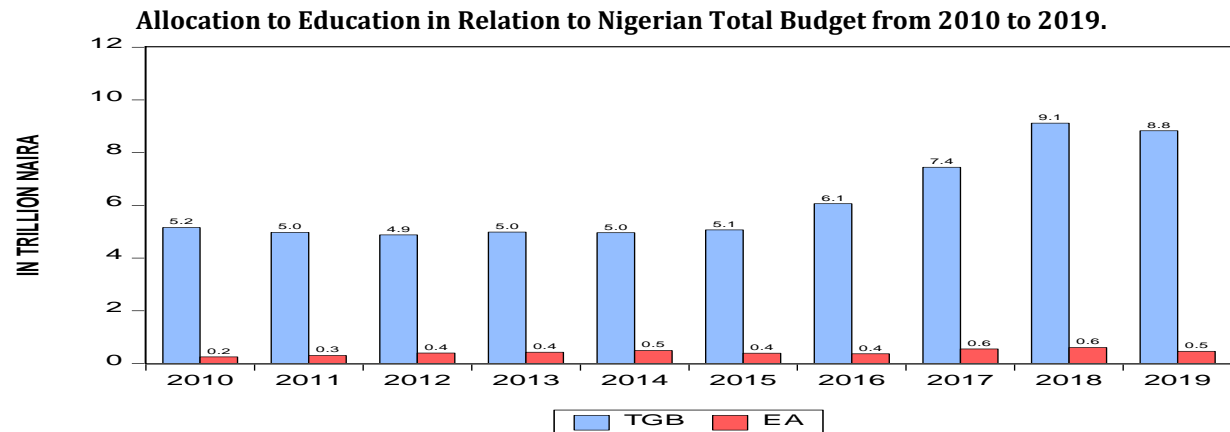
Institutions	Federal	State	Private	Total
Universities	43	48	79	170
Polytechnics	29	48	55	132
Monotechnics/Specialised Institutions	23	2	2	27
Colleges of Health and Technology	19	11	6	36
Vocation/Innovation Enterprise Institutions	6	4	143	153
Colleges of Education	22	46	14	82
Colleges of Agriculture	17	19	0	36
<b>Total</b>	<b>159</b>	<b>178</b>	<b>299</b>	<b>636</b>

Source: National Universities Commission, 2019; National Commission for Colleges of Education, 2018; National Board for Technical Education, 2018.

### 2.1 Trend of Funding Tertiary Institutions in Nigeria

Financing Western education in Nigeria has been viewed under two categories: pre-independence (1842 - 1959) and post-independence (1960 – to date). During the pre-independence era, education funding was mostly done by missionaries and colonial administrators

primarily to ease communication, religious assignments; facilitate the discharge of menial tasks and other administrative activities (Mathew, 2016). However, in the post-independence era, funding tertiary education has been majorly made through government annual budgeted expenditure and other sources like grants, special interventions, and tuition fees, etc.



Source: E-view Output on National Bureau of Statistics Data 2010 to 2019.

**Figure 1.1: Showing Annual Total Government Budgetary (TGB) Trend and Allocations to the Education (EA) Sector in Nigeria from 2010 to 2019, all in trillion naira.**

Budgetary allocation to the education sector from 2010 to 2019 has been very marginal compared to the annual total budget. This suggests that federal government fund committed to the educational sector has not been proportional to her financial resources needed for the growth of economic, social and community services. A

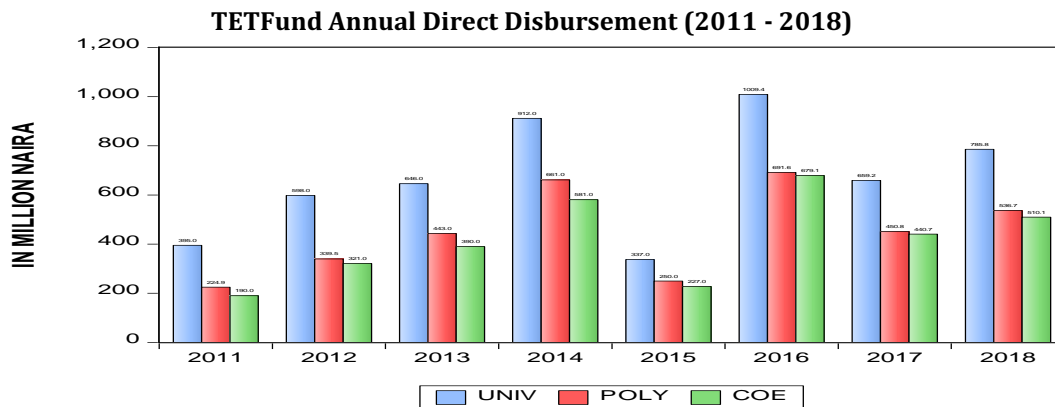
cursory look at the international scene suggests that Nigeria’s concern and commitment to education vis-a-vis economic development is far behind developmental strides as many counterparts. See appendix 2.



### 2.2 Tertiary Education Trust Fund (TETFund)

TETFund was borne out of the burden and decay of the incessant deceleration of the education condition in Nigeria as an intervention agency under the Tertiary Education Trust Fund Act, 2011 which repealed the ‘Education Tax Fund’ under Decree 7 1993 and ‘Education Trust Fund’ under Decree 40 1998 at the then military administration (Bogoro, 2019). The TETFund is vested the responsibility of managing, disbursing and monitoring the education tax in public tertiary institutions in Nigeria (Bogoro, 2019; Nagbi & Micah, 2019). The fund is mandated to disbursed for the general improvement of education in the Federal and State tertiary institutions specially for the provisions and maintenance of essential physical infrastructures for teaching and learning, instructional material and

equipment, research and publications, academic staff training and development and any other need which is considered critical and essential for the improvement and maintenance of standards in higher education institutions. The administration ,management and disbursement of TETFund is under the oversight of an eleven member board of trustees which are drawn from the six geo-political zones of the country and ably represented by the Federal Ministry of Education, Federal Ministry of Education, Federal Ministry of Finance and the Federal Inland Revenue Service (FIRS). Today, as the case may be, 81 universities, 64 polytechnics and 74 colleges of education are beneficiaries of the TETFund (Bogoro, 2019). See appendix 1 showing various TETFund (formerly Education Trust Fund) collections as well as allocations from 1999 to 2018.



Source: E-view output on Tertiary Education Trust Fund Data on Disbursement 2011 to 2018

**Figure 1.2: Showing TETFund Annual Direct Disbursement to Universities, Polytechnics and Colleges of Education from 2011 to 2018 expressed in Million Naira.**

Since the inauguration of the TETFund intervention in 2011, there has been an accelerated disbursement of fund to the respective beneficiaries – the Universities, Polytechnics and Colleges of Education until 2015 during government transition that lead to a sharp fall of about 63%, 62% and 60% change in the allocations to the Universities, Polytechnics and Colleges of Education respectively. However, a high disbursement was made in 2016 that amounted to 199%, 177% and 199% change in the respective tertiary institutions with a slight fall in 2017, which was sustained between 2017 and 2018.

### 2.3 Role of Tertiary Education in Economic Development

Economic development can be conceived as a multi-dimensional process involving changes in the structures, attitudes, institutions as well as the increase in the level of national income or output of

goods and services in a country in a manner that efficiently bring rapid improvement in the living standard and general well being of the people in a country over a given period of time especially in terms of reduction in inequality and rate of poverty, increase in health conditions and services, rate of literacy and schooling as well as housing provision , etc. Agarwal (2019) asserts that quality



of life is measured using the Human development Index with emphasis on intrinsic personal factors such as literacy rates, life expectancy and poverty rates. Specifically, economic development indicators focuses on:

- i) Increase in real income per head – GDP per capita income;
- ii) Increased in the levels of literacy and education standards;
- iii) Improvement in the quality and availability of housing facilities;
- iv) Increased life expectancy.

Afolayan (2015) added that the overall goal of Nigerian tertiary education is the production of community of Nigerians that are highly skilled and who will be well prepared to work towards sustainable national development and global competitiveness in terms of expertise. However, Adetula, Adesina, Owolabi and Ojeka (2017) argue that education is not only significant in providing the much human resources required in the country but acts as an agent in developing the necessary technological tools and know-how for economic take-off in a country.

#### **2.4 Challenges to Funding Tertiary Education in Nigeria**

Despite government effort, TETFund and grants to the tertiary institutions, increasing students' enrollment, institutions' infrastructural needs and building a sustainable education standard, call for more fund amidst certain challenges. These challenges include:

- i) State governments' interference in the utilization of funds for proposed projects constitutes a crucial problem.
- ii) Under-utilization of disbursements by some of the beneficiary institutions;
- iii) Overdependence on oil and gas as major source of income affects budgeted allocation and tax to the education sector especially when there is drop in oil price;
- iv) The frequency of establishing tertiary public institutions by Government at all levels put enormous pressure on the Fund in the ace of dwindling an competitive available resource;
- v) Tax evasion and inconsistency contribute to low education fund collection and disbursement.

#### **2.5 Theoretical Framework**

##### **(i) New Institutional Economic theory**

New Institutional Economic Theory proposes that funding of public higher education

institutions should be the priority of the politics of the state (Tandberg, 2010). New institutionalism advocates that "institutions define the goals, meaning, and actions of individuals who are interacting within the governments, within a particular subsystem, or within other social settings" (Tandberg, 2010). Therefore, public education institutions can be impacted upon based on the goals defined for them and resources invested in them.

##### **(ii) Big Push Theory**

The big push theory proposed by Rosenstein-Rodan advocates that large size or minimum quantum of co-ordinated investment in infrastructure and education is required to lift an underdeveloped economy from the position of backwardness or stagnation to a path of progress. This means that underdeveloped nations will be unable to achieve self-generating and pervasive sustainable growth and development if they fail to make big initial momentum of investment in their economy. The crux of this theory is that bit by bit investment program dissipates resources and inhibits the growth process required for the development of a country. The theory hinges on the assumption of three indivisibilities such as indivisibility in production function, indivisibility of demand and indivisibility in savings.

##### **2.6 Empirical Review**

Udu and Nkwedi (2014) examined the impact of tertiary education trust fund (TETFund) intervention in Nigerian Universities and its implication for sustainable development of Ebonyi State University. Results show that TETFund intervention in Nigerian Universities particularly EBSU impact positively on the infrastructural and human development of the institution. The study recommends among others a reduction and or total elimination of unhealthy bureaucratic bottlenecks involved in TETFund as well as the use of honest and competent contractors in executing TETFund project and involvement of donor agencies to assist government in the funding of tertiary education in Nigeria.

Onyeike and Eseyin (2014) carried out a study to examine the relationship between tertiary education trust (TETFUND) and the management of University education in Nigeria. They concluded that TETFund will boost the structure of University education in Nigeria if the funds are well co-ordinated. The study suggested that various private organizations should contribute towards the empowerment of TETFund and that appropriate



legislation should be made to assist the agency to execute its activities effectively.

Mubashiru, Musiliu and Rasheed (2016) employing the ex-post facto research design and a sample of 200 academic staff of Lagos State University to evaluate the implication of tertiary education on human capital and national development in Nigeria found that tertiary education have a positive and significant relationship with national development in Nigeria and that tertiary education has a positive and significant relationship with human capital development. The study recommends that Nigerian tertiary education should be funded and equipped with modern learning facilities so as make our student function and compete globally.

Ogungbebe and Edohiawerie (2016) in attempt to examine whether Federal government budgetary allocation has significant effect on the development of tertiary institutions in Nigeria for the period 2000 to 2014 find that inadequate funding deters growth in the tertiary institutions. The study recommends that alternative channels of funding should be adopted to ensure qualitative education and standard growth in Nigerian tertiary institutions in the face of the declining financial resource allocation to the education sector.

Adetula, Adesina, Owalabi and Ojeka (2017) examined the nexus between investment in education and economic development of Nigeria. Using the ordinary least square (OLS) regression analysis, the study revealed that education sector contributes significantly to economic development of Nigeria although the sector is underfunded in terms of infrastructural facilities.

By adopting regression analysis and time series data for the period 1999 - 2014, Oraka, Ogbodo and Ezejiofor (2017) evaluate the effect of Tertiary Education Tax Fund on the management of Nigerian tertiary institutions. The study showed that ETF fund allocations to Nigerian Tertiary Institutions have no correlation with the enrollment ratio of Nigerian Tertiary Institutions. It recommends that intervention agency should allow fund allocations to be commensurate with enrolment ratio of tertiary institutions in Nigeria in order to achieve its constituents result in the country.

Eravwoke and Ukavwe (2019) examined the relationship between funding of tertiary institutions and Nigerian growth prospects for the period 1980 to 2015. Using the ordinary least squares (OLS) estimation technique, the study showed that

government capital expenditure funding is not statistically significant in the growth process of Nigeria during the study period. The study concludes that funding of higher education should be improved upon especially in the area of capital expenditures funding.

Nagbi and Micah (2019) by applying basic descriptive, Pearson product moment correlation and simple regression model investigated the relationship between tertiary education trust fund and development of tertiary institutions in Nigeria from 2009 – 2017. The findings showed that tertiary education trust fund depict positive and significant relationship with staff training. It also revealed that Tertiary education trust fund positively correlates with project development, research and journal publications while library development but did not have any significant relationship.

Employing descriptive survey research design and ANOVA to analyzed data, Agha and Udu (2019) explored the impact of Tertiary Education Trust Fund (TETFund) intervention on quality and relevant educational research (2010-2015). The study concludes that TETFund intervention has no significant impact on quality and relevant research by employees of state owned universities in south East Nigeria. This was attributed to the fact that funds allocated to these institutions overtime were under accessed as well as the fact that many academics that access research grants use part of them to take care of their personal needs leaving a paltry sum for research.

From the accessed extant reviewed empirical works, it is evident that tertiary education in Nigeria has suffered because of poor funding as most studies reveal that government budgetary allocations to tertiary education in Nigeria were negative and some positive but insignificant. However, while Nagbi and Micah (2019); Ogungbebe and Edohiawerie (2016); Oraka, Ogbodo and Ezejiofor (2017) focus on the relationship between tertiary education funding and the development of higher institutions in Nigeria, Eravwoke and Ukavwe (2019) explores the effect of funding tertiary institutions on Nigerian growth prospects. None of these studies looked at the effect of tertiary education funding on economic development of Nigeria. Also, most of the studies' study period ended in 2015 with exception to Nagbi and Micah (2019) which ended in 2017. All these create a lacuna that needed to be filled. On these premise, motivated the essence of this study to





empirically examine the relationship that prevails between funding tertiary education and economic development in Nigeria for the period 1999 to 2018.

### 3. RESEARCH METHOD

This paper hinges on hypothetical ex-post facto research design as it relied on annual time series data set over the period 1999-2018 to analyze the funding of tertiary institutions' indices on economic development in Nigeria. The absolute values of the annual data on human development index, the dependent variable and proxy for economic development was regressed on recurrent expenditure on education, capital expenditure on education, and tertiary education trust fund, being the explanatory variables and proxies for funding tertiary education. The time series data sets for the study were drawn from Central Bank of Nigeria Statistical Bulletin and National Bureau of Statistics. Human development index (HDI) is used to measure economic development (ED) in this study since HDI reflects the quality of life such as literacy rates, life expectancy, poverty rates (Agarwal, 2019). The study relied on multiple regressions of the ordinary least square (OLS) to capture the short-run estimates of the predictive regression equation being the best linear unbiased

estimator (Hansen, 2018). The significance of the associated t-statistics of the explanatory variable is expected to be at least 0.05, if the null hypothesis of no significance is to be rejected.

To empirically analyze the influence of funding tertiary education on economic development in Nigeria within the study period, the model for this study is specified in line with that of Eravwoke and Ukavwe (2019) with slight modification on the dependent variable as well as an additional variable of TETFund. The functional notation of this model is implicitly specified as follows:

$$HDI = f(REE, CEE, TETF)$$

Where;

HDI = Human Development Index;

REE = Recurrent Expenditure on Education;

CEE = Capital Expenditure on Education;

TETF = Tertiary Education Trust Fund

By linearizing the model from its functional form is given as:

$$HDI = \alpha_0 + \alpha_1 REE + \alpha_2 CEE + \alpha_3 TETF + e$$

Where;

$\alpha_0$  = Regression constant

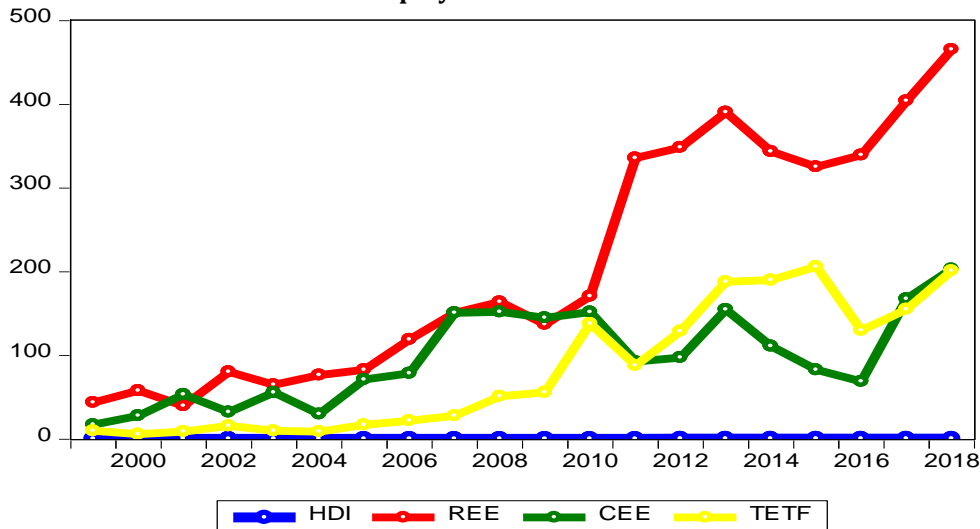
$\alpha_1 - \alpha_3$  = Regression coefficient

e = Stochastic error term

$\alpha_1, \alpha_2, \alpha_3 > 0$

## 4. RESULTS AND FINDINGS

### 4.1 Graphical behavioural trend of the employed variables



Source: E-view (Version 10) Output on 1999 to 2018 Data  
**Figure 4.1: Showing Graphical Trend of the behaviour of HDI in relation to REE, CEE and TETF in Nigeria for the period 1999 to 2018**



Figure 4.1 above reveals irregular movements in recurrent expenditure on education (REE), capital expenditure on education (CEE) and tertiary education trust fund (TETF), all as sources of fund to Nigerian education from 1999 to 2018. A careful observation of the trend shows that REE recorded rapid skyrocket improvement from equilibrium point with CEE and TETF from 2010 to 2018 which suggests government support and awakening in sponsoring education. However, CEE and TETF seem to be on a competitive ground with TETF

moving more promisingly than CEE. This suggests a relaxation in public capital allocation to the education sector during the study period. Meanwhile, human development index has been on a horizontal movement from 1999 to 2018. This is an indication that economic development experienced marginal trend over the years

#### 4.2 Multiple Regression (OLS) Results

The multiple regression least square was conducted in the study to ascertain the short-run relationship amongst the employed variables.

**Table 4.1: Showing Multiple Regression Results**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.423718	0.011691	36.24164	0.0000
REE	0.000178	8.77E-05	2.034316	0.0613
CEE	-0.000106	0.000124	-0.852412	0.4083
TETF	0.000248	0.000161	1.543468	0.1450
U(-1)	0.320759	0.253220	1.266719	0.2259
R-squared	0.824641	Mean dependent var		0.472895
Adjusted R-squared	0.774538	S.D. dependent var		0.044647
S.E. of regression	0.021199	Akaike info criterion		-4.648745
Sum squared resid	0.006292	Schwarz criterion		-4.400208
Log likelihood	49.16307	Hannan-Quinn criter.		-4.606682
F-statistic	16.45901	Durbin-Watson stat		1.989976
Prob(F-statistic)	0.000035			

Source: E-view (Version 10) Output on 1999 to 2018 Data

Table 4.1 shows a coefficient of determination ( $R^2$ ) of 0.824641, which suggests that 82 % of the variation in human development index (HDI) is jointly explained by the changes in the explanatory variables (recurrent expenditure on education, capital expenditure on education, and tertiary education trust fund) while the remaining 18% of the variations is attributed to other variables not captured in the study. That is to say that, about 18% of the variation in human development index is caused by other factors not included in the model. The robustness of this result is further buttressed by an F-statistics of 16.45901. Similarly, the Durbin-Watson statistic of 1.989976 clearly indicates that there is no effect of serial correlation problem among the variables in the

study since it falls within the acceptable region (1.5 – 2.5). With the Probability of F-statistic of 0.000035, it is significant enough to conclude that the model has a good fit.

Employing the results of OLS estimate, and judging by the t-statistic values of 2.034316, -0.852412 and 1.543468 for REE, CEE and TETF respectively with their probability levels of 0.0613, 0.4083 and 0.1450 which are more than the significant level at 0.05, we therefore, reject the alternative hypotheses and accept their null, implying that REE, CEE and TETF have not significantly influence HDI in Nigeria. This indicates that government financial efforts as well as taxed fund allocated to the tertiary education have marginal effect on economic development in



terms of level of literacy, employment level, poverty reduction amongst others. However, it worth remarking that while REE and TETF exert a positive influence that of CEE is negative. This suggests that even though the effect of funding tertiary education is nominal, funds raised from REE and TETF favour economic development unlike CEE where its increase retards economic development, insinuating scenario of fund misappropriation or embezzlement of CEE. With exception to CEE, the findings agree with a priori expectations and support the empirical submission of Eravwoke and Ukavwe(2019); Ogungbebe and Edohiawerie (2016) that government expenditure on education is not statistically significant in stimulating the growth process of Nigerian economy.

## 5. CONCLUSION AND RECOMMENDATIONS

From the aforementioned findings, it can be established that economic development in Nigeria has witness backwardness as a result of poor appropriation of fund and it's used on tertiary education. Government recurrent expenditure on education and TETFund although have the tendency of promoting economic development, even though the situation has been very marginal. However, it is so sadden that Government capital expenditure that would have raise the hope of economic development by its impact on tertiary education is a disappointment, suggesting that misappropriation and underutilization of budgetary allocations within the period of study. The study, therefore, recommend an increase of more than 18% in government budgetary allocation to the education sector, shun unhealthy interference of government and its agency in the utilization of allocated funds; improvement in the facilities and welfare of educational staff, alongside regular monitoring of level of fund utilization to ensure improved standard in the education sector as a panacea for enhancing the standard of living, employment rate and poverty reduction in Nigeria.

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## APPENDICES

### Appendix 1: Data on Employed Variables

YEAR	REE N' B	CEE N' B	TETF N' B	HDI %
1999	43.61	17.25	10	0.455
2000	57.96	27.97	6	0.462
2001	39.88	53.34	9	0.463
2002	80.53	32.47	16	0.4
2003	64.78	55.74	10	0.4
2004	76.53	30.03	9	0.428
2005	82.80	71.36	17	0.434
2006	119.02	78.68	22	0.444
2007	150.78	150.90	28	0.448
2008	163.98	152.17	51	0.453
2009	137.12	144.93	56	0.457
2010	170.80	151.77	138	0.462
2011	335.80	92.85	88	0.467
2012	348.40	97.40	129	0.512
2013	390.42	154.71	188	0.501
2014	343.75	111.29	190	0.524
2015	325.19	82.98	206	0.527
2016	339.28	68.80	130	0.53
2017	403.96	167.66	155	0.532
2018	465.30	203.42	201	0.541



**Appendix 2: Allocation to Education as a Percentage of GDP in Selected Countries from 2010 to 2018**

Countries	Government expenditure on education, total (% of GDP)								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Australia	5.55917	5.08313	4.87765	5.23801	5.17368	5.32175	5.28031	N/A	N/A
Brazil	5.6488	5.73741	5.8551	5.83885	5.94848	6.24106	N/A	N/A	N/A
Cameroon	2.99366	2.76677	2.69718	2.76802	2.68713	2.76805	2.65423	3.06699	N/A
Germany	4.91368	4.8078	4.93331	4.93497	4.92086	4.80518	4.80093	N/A	N/A
Ethiopia	4.49659	5.48576	5.56678	4.49855	4.60202	4.73792	N/A	N/A	N/A
France	5.69251	5.5183	5.45642	5.50028	5.51206	5.46424	5.43259	N/A	N/A
UK	5.77046	5.6462	N/A	5.58823	5.66499	5.60939	5.48697	N/A	N/A
Ghana	5.5406	8.14097	7.91914	4.6071	4.49182	4.51089	4.48683	3.61798	N/A
Indonesia	2.81228	3.18944	3.40748	3.35904	3.28801	3.5836	N/A	N/A	N/A
Israel	5.54157	5.5616	5.69417	5.87925	5.78425	5.85445	5.8493	N/A	N/A
Japan	3.6395	3.64258	3.69226	3.66538	3.59059	N/A	N/A	N/A	N/A
Kenya	5.50822	5.33529	5.50904	5.41138	5.28021	5.27134	5.36267	5.23898	N/A
Nigeria	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Senegal	5.18252	4.87895	4.73316	5.6725	5.72021	5.45638	5.12751	4.81492	N/A
Togo	4.09646	4.3093	4.7192	4.42365	4.78455	5.1086	4.9847	N/A	N/A
Uganda	2.38901	3.03767	2.48314	2.20876	2.25068	2.77376	2.55882	2.63501	N/A
South Africa	5.72174	5.96275	6.37164	6.01354	6.04662	5.95619	5.94059	6.12535	6.16137

*Source: World Bank Development Indicator, 2018*



## THE IMPORTANCE OF DEMOCRACY AND DEMOCRATIC DEVELOPMENT IN UZBEKISTAN

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### ANNOTATION

*This article examines democracy and democratic development in the social life in Uzbekistan. Their various interpretations have been given in the scientific and social philosophical literature. Some interpretations are artificially abstracted, while others do not take into account ethno-political and ethno-social traditions, territorial features. Although democracy and democratic development are becoming universal values, they are manifested in the life of every people, nation and state as a reality with its own, differentiated features. Ignoring these features makes the idea of democracy and democratic development a tool for the formation of a totalitarian system of government.*

**KEY WORDS:** *democracy and democratic development, social life, people's receptions*

### DISCUSSION

The article describes the democratic changes taking place in Uzbekistan today, the reasons for calling it a "new stage", the political and philosophical essence of the Action Strategy. It is obvious that the idea of public service is based on the goal of increasing the social activity of the people, ensuring their active participation in the ongoing reforms in the socio-political life of the country and ensuring a high level of human rights and freedoms.

Today, the topic of democracy is widely discussed in scientific and philosophical research. This is not in vain, because humanity connects its development, its future with the spread of democracy, liberal democratic ideas. After the French explorer Alexis de Tocqueville traveled to America and published "Democracy" in America, the European continent also embraced democracy as its ideal. The author of the work himself was a supporter of the constitutional monarchy. But he faces Americans who value freedom, free thinking, and self-confidence above all else. These qualities exaggerated "government paternalism."

The French researcher, who saw the activism of American citizens and their desire to determine their own destiny, concluded that "the individual, society, city, people must determine their own interests, and no one can interfere in their affairs until these interests harm others." At the same time, Alexis de Tocqueville sees that American democracy,

freedom, is associated with making a lot of money. The pursuit of money and wealth was at the heart of American pragmatism, he said.

It is well known that pragmatism leaves no room for metaphysical or speculative observations. Therefore, in American democracy, it is the priority of the individual to pursue his own interests rather than theoretical observations. "Americans look for philosophy in themselves, they don't take it from the margins or from books." This personalism could not fail to arouse certain problems in social existence, because the absoluteness of personalism is dangerous, first and foremost, for the individual himself.

Only when the individual and society, the interests of the individual and the social interest are aligned around the goal of democratic development, and achieve a balanced unity, will both parties be satisfied with their actions and lives. If personalistic aspirations take precedence and run counter to the interests of society, even if a person fully satisfies his material needs, he will sometimes feel that he is dissatisfied with his life, that his life, which is a divine blessing, has been wasted. The essence of human life is that it can be spent by others, as well as for the future and development of society.

That is why personalism, egoism, which is inherent in American democracy, is criticized in the scientific literature. D. Dewey, one of the founders of the philosophy of pragmatism, also points out the



negative aspects of American democratic development. He writes that democratic change removes barriers in the areas of commerce and communication, removes the things that make people hostile to each other on earth, binds them together, and in turn guarantees a lasting peace. Revolutions in science lead to progress, make the scientific worldview a reality in people, social life is built on reason, people communicate freely with each other, establish democratic institutions and live in accordance with the requirements of freedom and equality, which are the basis of the political system. With the eradication of illiteracy and the leading influence of enlightenment, despotic, repressive state administrations will be abolished, the political power of the state will gradually diminish with the spread of knowledge and democratic institutions, and the pursuit of freedom in human nature will establish legal order.

The increase in labor productivity, the introduction of new technologies will absolutely eradicate poverty on earth, everyone will have the things they need to live a full life, the comforts, the types of housing and labor. "But the events of recent years have clearly shown," Dewey writes, "that those who lived with these high hopes have been severely deceived. Contrary to the hopes of those who believed in peace on earth, two world wars of unprecedented, global, destructive power took place. Demonstrate freedom of conscience and identity instead of the continuous rise of democratic freedom and equality we see the flourishing of powerful totalitarian states that will completely destroy the world, surpassing all despotic regimes in history. In the field of lawmaking and jurisdiction, which is the most important tool created to ensure the freedom of the majority, government arbitrariness is constantly increasing today. Instead of approaching victory over economic stability and poverty, we are today facing the horrific complications and depths of the industrial crisis, in which many employees are barely finding a job. Social instability has reached such a point that if this tradition is not eradicated, it could be the beginning of a revolution.

The revolution the philosopher predicted did not take place, but the anxieties he identified persisted in both the United States and Europe. "Today, more than ever, we know that the whole problem is where we are going: backwards or forwards, or the harmony of humanity and nature, both in theory and in practice."

D. Dewey himself seeks an answer to this question and admits that deciding democracy is not an easy task. "Democracy is not an easy path to accept," he wrote. On the contrary, if we talk about its introduction in the current complex conditions, this path will not be absolutely smooth. In general,

we need to be inspired by the success of our journey. "

It can be said that democracy comes from the law, and eventually returns to the law. Positively assessed law makes democracy a reality, while negatively assessed law discredits democracy. So which normative norms are positive and which laws are negative? Lawyers know that there is no negative law, that any law serves this or that purpose, the fulfillment of a duty. Yes, there is no absolute negative law, but there may be norms, norms that lag behind the requirements of the time, the dynamism of social life, which negatively affects this or that area.

In conclusion, we must not forget that democracy is a social ideal, and law is a means and a mechanism to achieve this ideal. Just as democracy requires law, so law requires democracy. If democracy seeks self-determination without rights (it is difficult to imagine such a situation), it becomes a dry utopia, a raw fantasy. Therefore, democracy can become a reality only when it is based on the rule of law. If, from this approach, the law seeks to self-determination without democracy, it becomes a means of totalitarian rule that seeks human rights and freedoms. Therefore, just as democracy and democratic development are based on the phenomenon of law, so is law bound to rely on the requirements of democracy. The dialectical connection between democracy and the phenomenon of law must be studied in order to know what values are a priority in the life of society and what are the foundations of development.

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# FEATURES OF THE QUALIFICATION OF CRIMES IN THE FIELD OF ECONOMICS BY OBJECT OF CRIME

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## ABSTRACT

*The concept of the object of crime is central to the theory of criminal law, while its content has been at the forefront of scientific debate for more than a century. The problem is that this category is multifaceted and has various aspects: philosophical, axiological, social and legal. In order to determine the content of this concept in the modern doctrine of criminal law, the author sets the task to identify the essence of the object of the crime as a social and legal phenomenon, to delimit its concept from another, similar in meaning to the concept of the object of criminal law protection and to clarify the meaning of the scientific term "object of crime".*

**KEY WORDS:** *object of crime, act, corpus delicti, signs of corpus delicti.*

## INTRODUCTION

In law enforcement, when qualifying socially dangerous acts in the economic sphere, sometimes difficulties arise in delimiting infringements. This is due to the fact that various types of crime are characterized by the presence of a number of common features for them, and on the other hand, by distinctive features that allow you to distinguish them from each other. Such crimes are usually referred to in the doctrine of criminal law as crimes with similar offenses.

For the accurate and clear application of the norms provided for in chapter X of the Special Part of the Criminal Code, it is necessary to clearly define the features that allow distinguish between crimes with the similar structures available in this chapter. Undoubtedly, the distinction between the signs of the crimes in question and those of other socially dangerous acts is a prerequisite for the proper qualification of the act.

## METHODS

As is the case with other elements of the corpus deficit, the object of encroachment is one of the criteria to distinguish a crime from other offenses.

A correct understanding of the subject of the violation serves as the basis for solving various issues of the practical application of criminal law in criminal matters in the field of economics [1]. In particular, the identification of the subject of a crime takes place when considering the presence or absence of signs of theft of property, as well as to distinguish between the following: a) theft of another's property from other crimes against property; b) attacks in the economic sphere from crimes in other sections; c) economic crimes from administrative offenses in this field.

## RESULTS AND DISCUSSIONS

So, let us consider how the signs of the subject of a crime affect the differentiation of socially dangerous acts of property acts. The object and subject of the crime provided for in article 170 of the Criminal Code are of a certain nature. In the event of property damage to the owner, public relations regarding the use of property are violated. For example, an entity does not transfer mandatory payments for utilities, heat, and electricity to the owner's fund. Thus, he encroaches on public relations regarding the formation of the fund and causes damage to the owner of the property. The



subject (matter) of this crime is inventory items that were not made available to the owner as a result of the commission of this crime, but if property damage to the owner by fraud or breach of trust were not committed, they should have arrived.

Consequently, the subject of the crime referred to in Article 170 of the Criminal Code is different in that the perpetrator appropriates property that came out of the possession of one owner or another owner, but should have been placed at the disposal of another owner or owner.

The problem of differentiating crimes against property and environmental crimes related to the illegal taking of natural resources (wild animals, fish, trees, etc.) is one of the most difficult problems in forensic investigative practice.

Currently, according to the approach put forward in criminal law literature, natural resources are transformed into objects of encroachment against property only after a person separates them from their natural habitat. Material objects of the environment that are not exposed to human labor do not have monetary value, therefore, are not considered property and cannot be the subject of theft of another's property [2].

In accordance with applicable law, real estate includes land, subsoil, separate water bodies and other individual natural resources. Therefore, natural resources are property and are included in the civil turnover as property in the manner prescribed by law, that is, they can belong to various entities as such.

Therefore, there are no factors against the fact that these natural objects can be considered the subject (matter) of crimes against property.

In the literature, various points of view are set forth regarding the criteria for delimiting infringement of property against environmental crimes. For example, A. Khabarov believes that legislation on natural resources should follow the path of differentiation of natural resources excluded from civil circulation ("common property") and included in it [3]. It is such natural resources that are the subject of property rights and the subject of crimes specified in chapter X of the Special Part of the Criminal Code.

I. Klepitsky recommends, as an important criterion for distinguishing an environmental offense from a crime against property, to use the separability of the subject from the natural environment, that is, the presence of the owner of this property [4].

According to A. Tuzlukov, "natural resources inherently have an economic attribute, and therefore, can be recognized as a subject of theft" [5]. The author substantiates this opinion by the fact that the value of the property (as an economic sign) is determined not only by the invested funds, but also by its value, that is, the ability to satisfy certain needs.

In our opinion, the value of a thing should be determined by its characteristics and qualities that are useful to meet the specific needs of the individual. Therefore, the fact that human labor has been invested in a specific natural resource may not affect its nature, but the size of its value. When criminal qualification of crimes against property should take into account the rules of civil circulation of property. According to article 82 of the Civil Code, all objects of civil rights are divided into objects that are excluded from circulation, are in limited circulation, and are in free circulation.

Civil law relations with respect to objects excluded from circulation cannot arise (since they are not recognized as objects of property rights). Most of these things cannot be directed in the interests of a limited circle of persons, so that they can benefit. In this regard, we can agree with the opinion of G.A. Krieger that "the types of property that another person cannot possess or acquire cannot be the subject (matter) of a crime related to the theft of another's property" [6].

According to V.P. Revin, the following are excluded from general civil circulation: a) only objects, objects and property that are state property (for example, state diamond and currency reserves, historical and cultural values of national importance, etc.); b) objects excluded from the general circulation due to the danger to others (for example, radioactive, toxic substances and narcotic drugs); c) objects, objects and property belonging to municipal property (for example, funds of the municipal budget, municipal enterprises) [7].

In our opinion, since the regime of property excluded from circulation implies the impossibility of being in someone else's possession, these objects cannot be the subject of crimes against property. Violations of objects in limited circulation and subject to special registration when transferring rights to another person (including state registration) may qualify as crimes against property (for example, registered shares, non-cash money).

Cash value is one of the most important attributes of a property crime. It should be noted that the legal consequences of the offense, and in particular the legal nature of liability, depend on the value of the property that has become the subject of the infringement. In addition, based on the value of the property that has become the subject of a socially dangerous act, the cost of damage caused by the crime is determined, this is crucial for the proper qualification of the act.

In criminal law literature it is customary to determine the size of stolen property in terms of damage caused. According to Yu.I. Lyapunov, the amount of material damage will depend on the economic value of the object of encroachment. This assessment is expressed in the value and monetary value of the item - the price. In the current criminal



law, a similar economic assessment of the severity of the consequences for differentiating responsibility for the theft of another's property and, accordingly, penalties for their commission are determined [8]. The interdependence of the consequences and the value of stolen property of others is also emphasized in the works of other scientists [9].

P.S. Yani notes that in most cases the qualification of crimes against property is not determined by the "damage" caused by the crime, but by the "size" of the theft of another's property (extortion, destruction of property). Moreover, the size should be understood as the value of the corresponding property [10].

The conclusion that the amount of theft of property should be assessed in terms of its value, on the one hand, does not allow for taking into account other signs (weight, volume, quantity, etc.) when qualifying crimes against property, and on the other hand, does not prevent compensation for damage caused by a crime in order to satisfy a civil claim.

Analysis of the materials of criminal cases shows that the material costs associated with the theft of another's property, when qualifying a crime, are not included in its size. Such costs include, for example, the cost of repairing or restoring damaged items, as well as the cost of repairing doors, windows, and locking devices that were torn down during the commission of the crime.

Thus, property damage caused by the theft of another's property is determined only by the value of the seized property, other expenses and income not received are not taken into account when qualifying a crime.

A.I. Boytsov believes that if the destruction or damage to property was committed after the seizure of the property, while it was not intended to be seized in anyone's interests, but was done to destroy or damage the property, this action does not require additional qualification in accordance with the norms of the Criminal Code (Art. 173 of the Criminal Code), which provides for liability for the intentional destruction or damage to property. Destruction or damage to property committed during the theft, that is, committed during the seizure of another's property or to conceal the traces of a crime is qualified by the totality of crimes for the theft of another's property and intentional destruction or damage to property [11].

Identifying the real value of stolen property is one of the most serious problems in the practice of law enforcement agencies. Sometimes the victim indicates one value of the property in the theft statement, and the expert's conclusion indicates the other value, which cannot exceed one minimum wage established by law at the time the crime was committed. That is why criminal cases are terminated due to the insignificance of the act.

We believe that when assessing the value of stolen property, it is necessary to take into account the cost of similar goods in this region. This complies with civil law standards, which provides for the following rules: in cases where the price is not provided for and cannot be determined on the basis of the terms of the contract, the execution of the contract must be paid at a price that, in comparable circumstances, is usually charged for similar goods, work or services (article 356 of the Civil Code). The literature draws attention to the fact that there are contradictions in the administrative and criminal legislation regarding the prosecution of theft of another's property [12].

According to article 36 of the Criminal Code, "an act or omission is not a crime, although it falls under the signs of an act provided for by this Code as a crime, but does not have public danger because of its insignificance." According to this definition, the insignificance of an act consists in the fact that an action (inaction) with signs of a crime exists without public danger (for example, a box of matches is stolen). Such acts, in fact, do no harm to property relations, in addition, this type of minor acts is rare, and it is not difficult to find out because of the clarity and accuracy of the statement.

V. Maltsev distinguishes another type of insignificance of the act, taking into account the content of the criminal law: "In this case, the act is recognized as socially dangerous, but its level does not exceed the level of civil, administrative or disciplinary offense, therefore, the act cannot be considered criminal" [13].

In this regard, a natural question arises: how to distinguish an administrative offense from a crime, by what criteria should be distinguished insignificant act and petty theft?

For example, this problem is resolved in the Criminal Code of the Federal Republic of Germany as follows: According to § 248a, the theft and misappropriation of items of little value is prosecuted only on the basis of a complaint from the victim. In the legislation of the Republic of Uzbekistan, the issue of the ratio of petty theft as an administrative offense and the insignificance of the act has not yet been resolved.

In criminal law, there is another criterion for determining damage - its significant size. It is used as an aggravating feature in a number of rules providing for liability for crimes related to the theft of another's property, and as part of a crime in the form of intentional destruction or damage to property (part 1 of Article 173 of the Criminal Code) is a mandatory feature.

The eighth section of the Special Part of the Criminal Code, called the "Legal Meaning of Terms", states that significant damage is recognized in the amount of one hundred to three hundred minimum wages.



## CONCLUSION

All in all, a sign of damage on a large scale can be applied only when committing the theft of property belonging to a citizen. It should be noted that the priority of the ownership of individuals in the protection of property relations does not comply with the principle of equality of protection of all forms of ownership, proclaimed in the Constitution of the Republic of Uzbekistan. In addition, when a criminal assault is committed against the property of a legal entity, this often entails a significant deterioration in their financial condition, sometimes threatening the very existence of an enterprise, institution or organization.

Taking into account the above, in our opinion, it is advisable to extend the aggravating feature of certain forms of theft of another's property - causing significant damage not only to citizens, but also to property of legal entities.

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# CHALLENGES AND PROSPECTS OF CHILD CARE INSTITUTIONS WITH SPECIAL REFERENCE TO GOVERNMENT CHILD CARE INSTITUTIONS IN KOZHIKODE

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## ABSTRACT

*As per Juvenile Justice Act 2015 JJ Model Rules 2016 it is the responsibility of state government to make sure that the prescribed standards of care is provided in the functioning of CCIs in Kerala. Even if the successive JJ Acts brought in many changes in most of the states it is not up to the level. This article focuses on the prospects and challenges faced by CCIs while providing protective care to 'Child in Need of Care and Protection'. The study focuses on two government Child Care Institutions in Kozhikode (Government Children's Home for Boys and Girls), and After Care Home for Boys and Girls.*

**KEY WORDS:** Juvenile Justice Act, Child Care Institutions, Child in Need of Care and Protection, Juvenile Justice Model Rules, Ministry of Women and Child Development, Integrated Child Protection Scheme

## INTRODUCTION

Children constitute principal assets of the country. They are the most vulnerable section in the society. As per 2011 census of India, India is the country which has the highest number of children in the world that is approximately 40 percent of nation's population is children. More than 1/3<sup>rd</sup> of country's population, i.e. 440 million is below 18 years. As a country's future lies in the healthy growth of children, they have to be protected, educated and well developed, so that they will grow as a productive citizen of the country.

So, the issues related to childcare, child welfare, and child development have always been the increasing attention of Govt. of India. Constitution of India also was fully aware of the responsibility towards children. A lot of legislative enactments have been passed to give effect to the constitutional mandates and International Covenants.

At times children face certain unfavourable condition and became victims of many types of abuse. There is increasing disintegration of joint family system leading to weakening of traditional

support to these children. Poverty, family problem, lack of opportunities, pushes children to margins. Social conflict and both natural and manmade disaster not only make children homeless but also inflict on them psycho-social trauma. These children need special care and protection. In this regard Child Care Institution plays an important role in the holistic development of 'Children in Difficult Circumstances'.

## Child Care Institutions and Child in Need of Care and Protection

According to section 1(14) of JJ Act Child in Need of Care and Protection includes all vulnerable children such as orphan, runaway children, children from family at risk, incapacitated parents, mentally and physically challenged children, children who are victims of abuse, child labour, trafficked child, exploited child, child affected by armed conflict, civil unrest, and natural calamities (JJ Act, 2015).

Child Care Institutions is defined the section 2 (21) JJ Act 2015 means Children's Home, Open Shelter, Observation Home, Special Home, Place of



Safety, Specialized Adoption Agency and a Fit Facility under this Act for providing care and protection to children who are in need of such services (MWCD - CIF Report, 2018).

Section 41 of JJ Act 2015 provides for the registration of CCIs. Under the law, all kinds of Institutions, whether run by state, voluntary or non-governmental organizations that provide housing facilities and services for CNCP or CCL (Child in Conflict with Law) have to be registered under the act within a period of 6 months from the date of commencement of this Act. The Act promotes both Institutional and Non- Institutional care of these children. But it considers Institutionalization as the 'last resort' and it should be in the 'best interest of the child'. It should be aimed at educating, rehabilitating and preparing children for their re-integration into society (JJ Act, 2015).

### OBJECTIVE OF THE STUDY

The objective of the study is based on the relevance and the prospects and challenges faced by CCIs under JJ Act while providing care and protection to CNCP.

### BACKGROUND OF THE STUDY

As per 2011 Census, India has a total population of 1.21 billion and its 39 percentage is child population. Often children face certain unfavourable conditions and are victims of different kinds of abuses, both mental and physical. All these children are 'Children in need of care and protection', and they need full time care and protection. But providing institutional support to these vulnerable children is not an easy task. The JJ Act, 2015 and the Juvenile Justice (Care and Protection of Children) Model Rules, 2016 were passed to ensure justice, aiming at rehabilitation and reintegration of children back to society. So, Child Care Institutions have an important role in the overall development of children by providing a child friendly environment for these children (CIF Report, 2016).

Even if several JJ Acts in the country brought in many changes, in several states the CCIs are not keeping the standards of procedure prescribed by the Act. As a result, children in institutional care do not receive the type of care and protection, nurturing and stimulating environment needed for normal and healthy growth of the child. Besides this S 41 of JJ Act provides for the compulsory registration of CCIs. The children residing in the non-registered institutions have no place to go and as a result they have to be accommodated in the existing registered institutions. The overcrowding will make the problem more severe. In this context what are the challenges facing these institutions is to be analysed, as this situation

will surely adversely affect the fundamental rights of children.

### METHODOLOGY

The study focuses on Govt CCIs in Kozhikode. The 2 Children's Home and 2 After Care Home<sup>1</sup> is selected for the study. It includes one Boy's Home and one Girl's Home, one After Care Home for girls and one After Care Home for Boys. Information is collected from primary and secondary sources.

Primary data source is children gone out of CCIs for the last 5 years. (2012- 2017). Questionnaire and interview schedule are used to collect data which include questions related with rehabilitation facilities in these institutions. To check the reliability of the response of CNCP, questions almost related with this questionnaire is prepared for the officers of CCI.

Primary data is also collected from important offices related with JJ system. It includes District Child Protection Officer, superintendent of Boy's Home, Girls Home, ACH for boys ACH for girls, Child Welfare Committee chairperson, co-ordinator of Childline and Free Birds.

Secondary data sources are official records of these institutions, website of MWCD, ICPS office Trivandrum, and District Child Protection Office Kozhikode.

### PROSPECTS AND CHALLENGES

Child care institutions under JJ Act meant for full time care and protection, holistic development and is preparing for social re-integration. The findings of the study are discussed under the following heads.

In Kozhikode both governmental and NGOs are working for the care and protection of CNCP. Out of the total 64 CCIs, only six CCIs are under government and 58 under NGO. All government CCIs are registered. Out of the total 58 CCIs, working under NGOs 25 are registered and 33 is not registered under JJ Act.

### STANDARD OF CHILD CARE FACILITIES

#### I Lack of infrastructural facilities

<sup>1</sup> Even if the age of the inmates of ACH are above eighteen years and it is not coming under CCIs, it is included in the study because at the age of eighteen at which the child leaves CCIs, he/she may be continuing education and still needs care and protection. To know the challenges faced by ACH while providing rehabilitation and reintegration facilities these two are included in the study



In both children's home and ACHs, the main problem facing is lack of proper and adequate infrastructural facilities. Security provisions are also not there. No boundary wall or fencing, No CC TV and permanent watchman. No separate space for outdoor games and activities. Inadequate library and internet facility.

**2 Absence of adequate and professional staff**  
Most of the posts are vacant or filled on temporary or contract basis. As CCIs are 'home away from home' for a child, it is expected that the care taker or other staff of the institutions are keeping intimacy with the children by knowing them personally. But due to transfer and other such matters they cannot keep contact with the children. Children are often not ready to hear and obey the authority. Due to legal and other problems, the staff are reluctant to impose pressure on them. Most of the important posts like counsellor, medical staff, special instructor for children with special needs, watchman, vocational trainer and office staff are vacant. The services of them make available when needed. But often it is delayed or not at all available.

**3 Low rate of non-institutional care**  
Biological family is the right of the child and institutionalisation is the last resort for a child. But in the case of CCIs of Kozhikode, it can be seen that for the period 2012-17, the child sent for non-institutional care such as adoption, foster care, sponsorship and after care is very low. Children are admitted to the CCIs without making due enquiry about the possibilities of non-institutional care.

**4 Limitation of vocational training and absence of placement services**  
Absence of vocational training or job placement services is an important problem in both government CCIs of Kozhikode, and this seriously affect their social reintegration after they leave the institution. If there is such programme it is limited to few days or a week, which is no use for the children. There is no special trainer or instructor in both CCIs and ACHs. There is also no provision for job placement who completes professional or other courses and leave the institutions.

**5. Grievance Redressal Mechanism**  
In both children's Homes complaint box is kept in a safe and private place. Children utilise it, and involved in various committees. Adequate follow-up is there. But in both ACHs there is no complaint box and management committee is not functioning properly. Often inmates have no opportunity to express their views and concerns.

**6. Education only in government schools.**  
Even if these institutions give most important attention for the education of all children admitted, the main issue facing is there is provision only for studying in government schools. When there is

children from outside the state they cannot follow the medium of instruction of Kerala government schools. Result is that child cannot temporarily go to school. This may affect child's expectation and potential.

**7. Inadequacy of training and classes**  
All staff of the institutions are supposed to be familiar with the provisions of JJ Act and other laws related with the children to provide quality service to them. But in all these institutions these types of classes are often insufficient which adversely affect the working of the inmates of the institutions.

**8 Absence of special care for children of different types**  
Emotional support, special care for the exceptional child with strange behaviour is almost absent in all these child care institutions, as their needs are different. They are from different background with different experiences. They need love, care and attention. Often due to various reasons, these cannot be provided. This has various types of implications in their future life.

**9 No separate places for different types of children**  
Even if CCIs are meant for CNCP, often child released by Juvenile Justice Board is also placed in children's home for boys and girls. They may have criminal tendency and other such strange behaviour. This may affect other children and they may also be disturbed. There are street children, orphan and abused children. Due to lack of facilities they are placed in the same home. This will result in various types of problems among them.

**10 Medical care**  
Even if there is provision in the JJ Act for fulltime doctor, staff nurse and paramedical staff there is no permanent appointment. There is also first aid facilities. But all staff available is not trained to use these facilities.

**11 Recreational facility**  
Facilities are available in all these institutions for the mental, emotional and intellectual enhancement of children. CCIs promotes and encourages sports and games, music and cultural activities. The main problem for all these institutions are, there is no separate ground or courtyard for the outdoor games.

**12 Documents related with the child.**  
When the child is admitted to the institution, a case file related with the child is to be made. It includes all matters related with the child and is to be updated accordingly. In both CCIs these documents are keeping properly. But in ACH for boys and girls, it is not so easy to make all these documents, as the personal information of inmates is often not available.

**13 Adherence to the JJ Act**  
Both children's homes working according to the provisions of JJ Act. They are trying their level best



to provide the children the best opportunities and facilities within the limitation. But in ACH for boys and girls, due to inadequate staff and infrastructural facility, often they cannot provide the quality service directed by JJ Act.

14 Lack of awareness among inmates and public  
Most of the people are not aware of the facilities of CCIs. This staff and inmates are also ignored about many of the provisions which is meant for the rehabilitation of CNCP.

15 Lack of after care and follow-up  
The child should leave the CCI at 18 years. At this age he/she does not attain self-sufficiency. They may be studying. They cannot find a job at this age. Most of them go back home (often may not be a safe place). Another option is shift to ACH. But the situation of ACHs are very pathetic. In Kozhikode ACH there is lacking of everything. No vocational programme, no orientation programme, lack of staff, cannot control the inmates etc aggravates the problem. There is not much provisions in the JJ Act about the follow-up of these helpless children. Open the cycle starts again.

## SUGGESTIONS

The successive JJ Act brought in many changes. But in several terms, related with the intellectual and emotional growth of the child is not up to the level.

The staff and ministry is dedicated. But in the implementation stage, problems arise. On the basis of the above study, there are some suggestions to overcome the challenges faced by these rehabilitation institutions.

1. The main problem facing these institutions are lack of adequate infrastructure facilities. Separate library and reading room, counselling room, adequate wash and toilet room, boundary wall, separate space for outdoor games, quarantine rooms are not seen. Provision for this is to be made.
2. Lack of adequate, trained and qualified staff adversely affect the entire system. The staff closes to the children must be carefully appointed and some mandatory training programme should be attended.
3. Children in institutional care do not receive the type of nurturing and encouraging environment for the healthy and psychological development. There is no long-term vision for the children. They need something more than mere food, shelter and education. Each child is unique. More arrangements should be made to know and encourage the taste and potential of each child.
4. Information about what happens to these children after they leave the institution is needed. After care system is almost a failure. It fails to

arrange programmes for the social re-integration with society. Most of the inmates gone out of CCIs and ACH is not at all attained the desired goals.

5. CCI should make facilities for vocational training, job-oriented course and life skill training with the help of trained instructor and certificate should be given on the course completed which will be useful to them in future.
6. The department should organise classes for the public regarding the importance of non-institutional care like adoption, Foster care, sponsorship and after care. Efforts should be made for family based institutional care. Department of Social Justice can make sure that there is no procedural delay for non-institutional care.
7. Grievance redressal mechanism like functioning of management committee and children's committee should be strengthened, so that children get opportunity to express their views and opinions.
8. There should be separate homes for different types of children, so that proper care and attention according to their need can be given.
9. Properly monitor the functioning of CCIs. so that the problem facing by these institutions can be addressed time bound and appropriate action can be taken against those CCIs who are not following the norms of JJ system.
10. Funds should be utilised for sending them to private schools and other institutions if the child requires so.

## CONCLUSION

'Children In Difficult Circumstances' deprive many of the necessities of life. They need special care and protection. Even if biological family is the right of the child, sometimes it may not be a safe place for the child. Here comes the relevance of Child Care Institutions. Staying long period in institutions cause mental problems like 'institutional syndrome' in children. So only when there is no other options of non-institutional care, placing in CCI is to be considered. It is also understood that CCIs can give the desired level of protection to these helpless children. The main problem of many of the CCIs is the lack of infrastructural facilities and adequate staff. But by giving special attention and proper intervention by the authority, the facilities of these institutions can be improved. It will help for the rehabilitation and re- integration of CNCP as directed by JJ Act.

On the basis of the study of Govt CCIs in Kozhikode, some suggestions have been made. There may also other issues concerning these institutions. But the present study confined to these aspects.





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# COLLISION OF GST ON HIGHER EDUCATION IN INDIA

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## ABSTRACT

*Education plays an important role in the advancement of a progressive economy. How a country nurtures its generations with comprehensive education decides the progress of that country. In India, public and private, both sectors are engaged in providing education to enhance productivity and creativity of its population. Now a day's education is run by organised industry with huge revenues. The educational institutions that have been granted the exemption from GST are pre-schools and higher secondary educational institutes both private and Government. To clarify the applicability of GST on Educational Sector, we have to differentiate between core and ancillary education since core educational services is exempted from GST and other education services are subject to GST @18%. The government has a constitutional obligation to provide free and compulsory elementary education to every child. Thus, to promote education, it would be beneficial if educational services are exempted from tax. However, commercialization of education is also a reality.*

**KEYWORDS:** Goods and Service Tax (GST), Education, Industry, Institution.

## ➤ INTRODUCTION

Education is one of the major sector for an economy. The education of country's youth will decide how the economy of that country will flourish. Education promotes understanding, vision, creativity and productivity of people which helps in advancement of a country. In India, education is provided both by public sector education institutions as well as private sectors education institutions. Indian government's foremost priority is to provide low cost education every child. That's why education sector enjoy lots of tax exemption as they are not taxed or comes in negative list. The educational institutions that have been granted the exemption from GST are pre-schools and higher secondary educational institutes – both private and Government.

## ➤ GST LAWS RELATING TO EDUCATIONAL INSTITUTIONS

Services provided by an educational institution to its students or faculty or staff were exempt. (Mega Exemption -Notification Number ST-25/2012 dated 20/06/2012)

Later the exemption in relation to services provided to educational institutions was modified with effect from 01-04-2014 and scope of the exemption

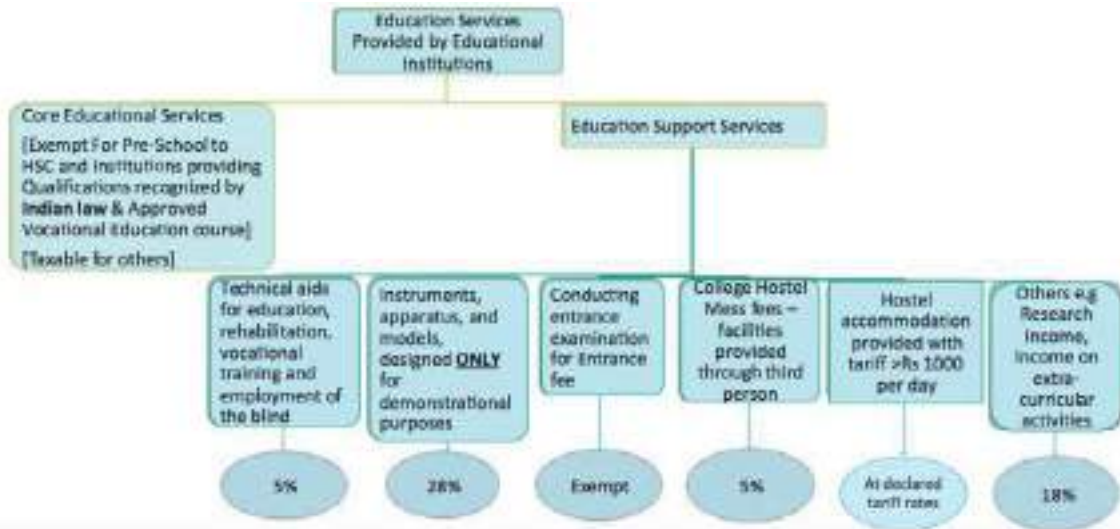
for services provided to the Educational Institutions (Institution providing pre-school education and education up to higher secondary school or equivalent) was restricted to some specified services namely-

1. Transportation of students, faculty and staff
2. Catering, including any mid-day meals scheme sponsored by the Government;
3. Security services performed in such educational institution
4. Cleaning services performed in such educational institution
5. House-keeping services performed in such educational institution
6. Services relating to admission to, or conduct of examination by, such institution

Any other service provided apart from those mentioned above to educational institution (Institution providing pre-school education and education up to higher secondary school or equivalent) was taxable.

Also, any service provided to an institution other than Institution providing pre-school education and education up to higher secondary school or equivalent was taxable.

➤ **GST PROVISIONS ON EDUCATIONS SERVICES**



➤ **EDUCATIONAL INSTITUTION UNDER GST**

Under GST, “educational institution” is defined as an institution providing services by way of:

- Pre-school education and education up to higher secondary school or equivalent;
- Education as a part of a curriculum for obtaining a qualification recognized by any law for the time being in force;
- Education as a part of an approved vocational education course;

➤ **REGISTRATION OF EDUCATIONAL INSTITUTIONS UNDER GST**

- Where the educational institution is providing only education as a service then such fees are chargeable at NIL rate and such educational institutions are not required to be registered.
- Where educational institutions are also providing other supplies or other services, i.e., providing books to students, providing shoes or uniforms etc. to students then in such cases such institutions are liable to get themselves registered.

➤ **EDUCATIONAL INSTITUTIONS EXEMPTED UNDER GST**

1. Income from education is wholly exempt from GST if a charitable trust is running a school, college or education institution for abandoned, orphans, homeless children, physically or mentally abused persons,

prisoners or persons over the age of 65 years or above residing in a rural area.

2. Government or local authority or governmental authority carrying on the activity of education is exempted from GST as this is not included in the ambit of supply of services. For Example – Government schools / Municipal schools.
3. Education provided by below are also Exempted Under GST:
  - a. National skill development corporation set up by the Indian government
  - b. National skill development corporation approved sector skill councils
  - c. National skill development corporation approved assessment agencies
  - d. The national skill development programs approved by NSDC Vocational skill development program approved under national skill certification and monetary reward scheme
  - e. Any scheme implemented by NSDC with training partners
4. Exemption has also been granted to the services provided by the IIM–a. 2 year full-time residential PG programs in Management for Post Graduate Diploma in Management, admission in which is granted via CAT
  - b. Fellowship programs in Management
  - c. 5 Year Integrated Programs in management studies (but excludes the Executive Development Program).



### ➤ **NON-EXEMPTED EDUCATIONAL SERVICES UNDER GST**

The educational services that are not exempted from GST are after school activities offered directly by third parties, food and accommodation supplied for excursion, supplies provided by third parties like musical instrument, computers, sports equipment, and uniform, stationery, and other non-academic related supplies. The educational services led by training and coaching foundations are also not exempted from GST.

#### **1. Higher Education Institutions and Private Institutions**

The exemption under GST has been granted for pre-schools till higher secondary education. Since universities and other advanced educational institutions have not been mentioned in the exception list, 18% GST is expected to be levied on this.

Higher education in the private segment will end up being more costly and in turn, competition for admissions in government schools/colleges/foundations will increase. There will be a 3 to 5% of the obligation jump on the administration costs that will over the long haul impact the common man. The middle class families who obtain education loans or put their life-long savings into educating their wards at reputed institutions will be facing the inconvenience.

#### **2. Coaching Institutes**

As clearing competitive exams and entrance exams seems impossible without taking professional coaching, coaching institutes form an integral part of education. GST has raised the tax rate to 18% from 14% for these coaching institutes. The parents whose children are about to start coaching for IITs and other competitive examinations will be facing the inconvenience.

#### **3. Cost of Organizing Events**

When foreign entities organize any educational or training events in India which are attended by professionals, individuals and overseas participants would be taxed under GST.

Apart from the exemption, the private education is likely to get expensive up to 2 or 3% after GST rolled out in India. Even if the lowest tax slab of 5% is applied, the chances are high to get it expensive according to the research and analysis of all the provisions of the bills introduced.

The GST slab rate of 5% is considered as lowest and thus, the government is requested to frame the laws in such a manner that the tax rate and input tax credit allowed in the education industry can share a load of taxation further improving the conditions.

### ➤ **APPLICABILITY OF GST ON HIGHER EDUCATIONAL INSTITUTIONS**

Services provided to higher educational institutions are taxable. While services provided by an educational institution are out of the GST ambit, the same is not the case with services provided to an educational institution.

The GST exemption on procurements is available only to schools (from pre-school up to higher secondary school or its equivalent). Hence, the 'input' or supply of services such as transportation, catering, housekeeping, services relating to admission or conduct of examination to higher educational institutions will bear GST levy. This will have to be borne by the higher educational institution.

### ➤ **APPLICABILITY OF GST ON TRAINING PROGRAMS, CAMPS, YOGA PROGRAMS AND OTHER EVENTS.**

Training programs, camps, yoga programs and other events would be considered a commercial activity, liable for GST.

#### **Whether books or stationery distributed to students covered under GST?**

Uniform, stationery, and other non-academic related supplies are taxable under GST. Supplies provided by third parties like the musical instrument, computers, sports equipment and after-school activities offered directly by third parties are also taxable. Supply of books is exempt under GST.

### ➤ **CHARGEABILITY OF GST ON PRIVATE COACHING CENTRES AND DISTANCE EDUCATION.**

1. Private institution and coaching centres do not have any specific curriculum and do not conduct any examination or award any qualification. Hence taxable at the rate of 18 percent.
2. Distance Education is taken up generally for higher education and hence taxable at the rate of 18 percent.

The importance of education in India can't be undermined due to the majority of the population below 25 years of age. Due to the large population and poverty, Education should easily be available at less cost. Implementation of GST has led to rise in the cost of the higher education and Distance Education.

When schools were considered and exempted from GST, the government had to give the same consideration to HEIs as well, which would have avoided such a situation.



### ➤ CONCLUSION

Education institutions play an important role in fulfilling the objectives of various students as well as parents, It is important that Educational institutions and the educationists should aim to build the capacities of the spirit of creativity, entrepreneurial and moral leadership among students and become their role model. Being a developing country, it is mandatory for the government to put a lesser burden of tax on the education sector. Indirectly, the taxes levied on coaching centers and training institutes will be burdened on students and their parents. Hence, a seamless credit should be allowed in the education chain to keep the cost of education lower in today's scenario.

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# THE INFLUENCE FACTORS ON URBAN POPULATION PROBLEM IN THE CITY AREA IN BANGLADESH

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## ABSTRACT

Urban Population has an important role in increasing a country's economic growth and its development. Urban population has a tremendous contribution on national growth then the rural sector. Even though in agricultural based country also get much earning revenue by urban population. Urban population may effect by several factors, responsible for rural-urban migration, influence the migrant's migration status. This study will try to identify the main reason for migrating people towards to the major cities. The paper will analyse the data of Urban Area Population Growth, Number of population, Literacy rate (%), GDP per capita growth, Average of per capita expenditure, Labour Force from 1988-2017 by building a regression model. This will clarify the confusion and draw a clear picture to understand the reason of urbanisation. This study will help all of the government and city planning bureau to identify the situation and can also predict the future of the major city of Bangladesh. Moreover, it will also help to identify the government influences along with various problem of the urban planning.

**KEY WORDS:** GDP, Urban expansion, Population growth. Migration, Labour forces.

## INTRODUCTION

Urbanization is a prime process among in the developing countries, as this influences directly to the economic and social development. In the Asian countries average economic growth has been increased rather than wealth and opportunities, which became more and more unequal. In the most cases the objectives of rural and regional development have not materialised because the needs, preferences and attitudes of the rural population were not properly incorporated into the programmes. All the developed countries focused on to the cities and set an outstation for extract primary products, expand the market for their manufactured goods and finally

secure the local political power in their favour (Friedmann & Wuilff, 1976; Frank, 1976; Castells, 1977). In the 21<sup>st</sup> century urbanization increasingly in large number as the main driver is considered rural-urban migration. Beside rural-urban migration, increasing population in cities and town development also influence the increase of the level of urbanisation. As in the report of United Nations (2008) around 3.3 billion people is living in the cities and major town. According to the report within 2050 around 68% of people will live in to the cities, whereas 90% of this population increase taking place in Asia and Africa.

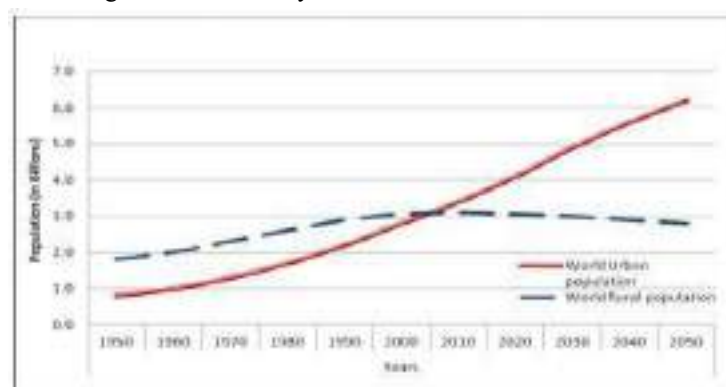


Figure 1: The UN projected Urban and Rural Population of the world.



The capital city of Bangladesh is Dhaka city which is one of the most populated cities in the world. The population of the city increased at a rate of 6.9 from 1975 to 2000 which was recorded as the highest growing population in the world, it increases from 2.2 million in 1975 to 12.3 million in 2000 (Hossain, 2013). As various problem like - immense population, many risky infrastructure, unplanned urbanisation and a geographical location that makes not only the capital but also the major cities facing very susceptible to climatic disasters. Beside that city resources and services such as water and sanitation are also creating immense pressure to the city life. As the city receives a large influx of migrants from rural parts of Bangladesh which affecting the city life as the number indicating around 0.4 million/year

(Ishtiaque and Ullah 2013). The migrants come to the city area for work and to lead better life, where as they don't have the intention to securing livelihood at their village home. Their battle for spending life in Dhaka proceeds as they manage to work hard and poor living conditions, ordinarily in ghettos or squatter settlements with extremely poor or no water and sanitation where there might likewise be the danger of removals as their residency status is tricky. As indicated by a report from the Asian Development Bank (ADB, 2008:2), the effects of environmental change will be increasingly extreme amid times of exceptional precipitation in urban zones where 'waste is as of now a major issue, as sewers much of the time reinforcement in the wet storm.

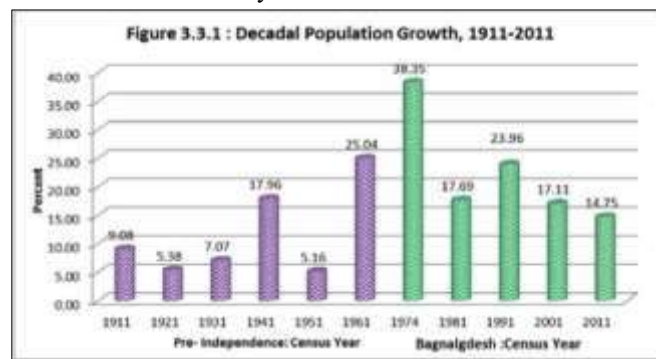


Figure 2: A Census Year Population Growth (1911-2011). Source: Bangladesh Bureau of Statistics 2011.

## LITERATURE REVIEW

Within 2030 more than 1.1 billion Asian people will be shifted to the urban areas as the population of Asia is growing very rapidly (Asian Development Bank, 2008). As growing physical growth of metropolitan and city boundaries is the cause of Urbanization and rapid urban development in most of the Asian countries (Hugo, 2006; McGee and Robinson, 1995). According to Islam & Shafi (2010) physical, economic and social pattern influences the urbanisation the cities as the private sector has assumed a prominent position in those sectors.

Nasreen et.al (2006) argued that the modern cities are canters of employment, education and culture, but they are also canters of poverty, delinquency, crime, prostitution, alcoholism and drug abuse. As a rule, cities offer less space, less daylight, less fresh air, less greenery and more noise. Urbanization is the percentage of population living in cities and urban growth is the process of increasing this percentage. The urban expansion in Dhaka megacity has a significant impact on the local and global environment. Efforts to control urban expansion must start from a clear understanding of their various local, regional, and global driving

forces. Studies of the interdependencies between the driving forces in the local spatial relationship in emerging Asian megacities are still limited. This study hypothesize that the local driving forces that affect urban expansion in the Dhaka megacity vary spatially. It was supposed that the local variation of demographic, infrastructural, and natural elements driving forces in the region are significantly affecting the urban expansion process in Dhaka megacity and are not spatially uniform. A clear picture and more specific about the existence of spatial variation of local elements driving-forces can facilitate planners and policy makers to manage and control urban expansion in the region.

## METHODOLOGY

### Data and Variables

To understand the factors which are driving urbanisation in Bangladesh various variables were included in the study. The study have used linear regression model to determine the connection between the independent and dependent variables. The multiple linear regression will helps to identify the ratio between regression coefficients and independent variables. Urban area was mentioned as



the dependent variable (Y) as this the alternative for urban expansion in Bangladesh.

Variable	Variable Code	Detail Explanation
Y	URB	Urban Area Population
X1	POPGR	Population Growth
X2	POP	Number of population
X3	LTR	Literacy rate (%)
X4	GDP	GDP per capita growth
X5	EXPEND	Average of per capita expenditure
X6	LF	Labor Force

The analysis based on the time series indicators which also focused on the demographic determinants that are linked with the urbanisation. For error free data its being constantly check through, update and edit for analysis. Even the data places on GRETL, the figures are checked on a few times to make it Error free. This is how it further improves the accuracy of the data before the conduction of the analysing step. GRETL will be used for measuring the variables and also time series plot will be used to make for the graph. Regression analysis will be used to identify the significant value of the variables.

### Multiple Linear Regressions

Multiple linear regressions model is used to ensure that the estimated result does not divert from the actual results. There are six variables have been considered in the estimated model and economic model will be formed as:

$$URB = \beta_0 + \beta_1 POPGR + \beta_2 POP + \beta_3 LTR + \beta_4 GDP + \beta_5 EXPEND + \beta_6 LF + \epsilon$$

### Hypotheses and Conceptual Framework

The independent variables and dependent variable are used to investigate the relationship and affecting determinants among the factors which influence Urban Area Population growth of Bangladesh. The independent variables will be used to explain the behaviour of dependent variable of Bangladesh in which the study is focused on to real scenario of urban area population increase. In view of this literature review, the hypotheses and conceptual framework are formulated in this section.

H1: Population growth has a significant positive relationship with the increase of urban area population growth.

H2: Population density has a significantly expanding urban population growth.

H3: Literacy rate growth has a significant positive relationship with the increase of urban area population growth.

H4: GDP consumption has a positive relationship with the increase urban area population growth.

H5: Expenditure has a significant relationship with the increase urban area population growth.

H6: Labour Force influence the population to move towards to the urban area.

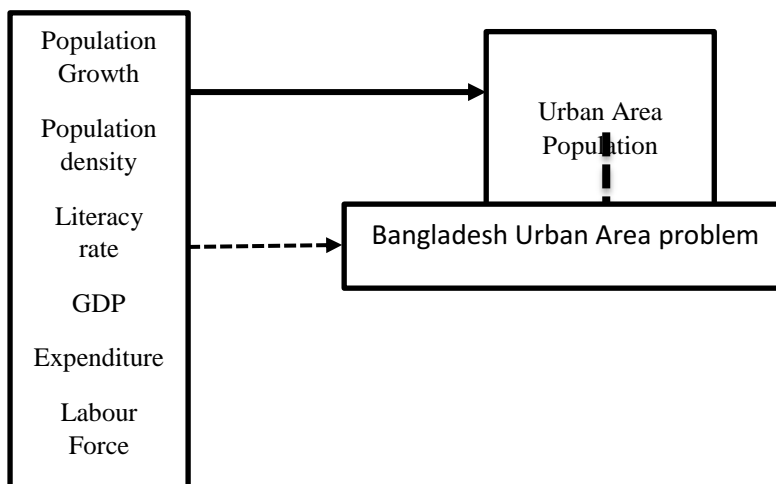


Figure 3: Conceptual Framework of variables.

### Stationarity test – Time-series and Correlogram

A stationary time arrangement would ordinarily be made on the supposition that the factual





properties of the factors would be accepted to be the same later on as the past. The direct of the stationarity test is acquiring a significant example insights alongside different factors as the portrayal of such measurements later on might be valuable if the arrangement is stationary (Shalit 2012). The vast majority business and financial time arrangement that are made accessible need aid as a rule a wide margin starting with stationary. The formal test including time-arrangement plot would investigate the patterns and diagram developments nearby its reference to the three classifications: test without consistent, test with steady and test with steady and pattern. The casual technique including the Correlogram would investigate the downwards pattern of the diagram and graph by signifying any decay to the zero value or below negative values, in order to satisfy for stationarity.

#### Augmented-Dickey Fuller (ADF) Test

In the ADF test, the trial of the null hypothesis of a unit root displayed in a period arrangement test as the option theory would more often than not be stationary relying upon which adaptation of test did.

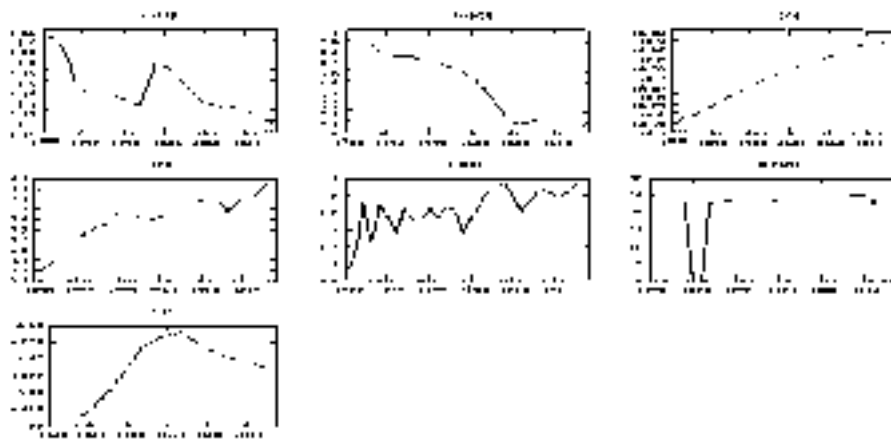
#### Ordinary Least Square

Linear least square used to evaluate the obscure parameters in a multi relapse demonstrate by means of limiting the aggregate of the squares of contrasts between the adjusted information and those created by the direct capacity of an arrangement of logical factors. The outcome would can be communicated in a few structures which in this perspective the different relapse show. The p-value would be generally used to decide the importance of the individual factors however to a specific degree depending of cases (Weber and Monarchi 2008).

### DATA ANALYSIS

#### Time series plot

According to the Figure: 3 it will be stated that the variables based on the time series plot can be identified as the category of Constant with trend. In Figure: 3 it is showing that there is a significant trend with the observation of the variables tremendously from 1988 to 2017 in the time series plot. The constant with trend which have a relation to the presence of an intercept on the vertical axis beside the attended of the trend.

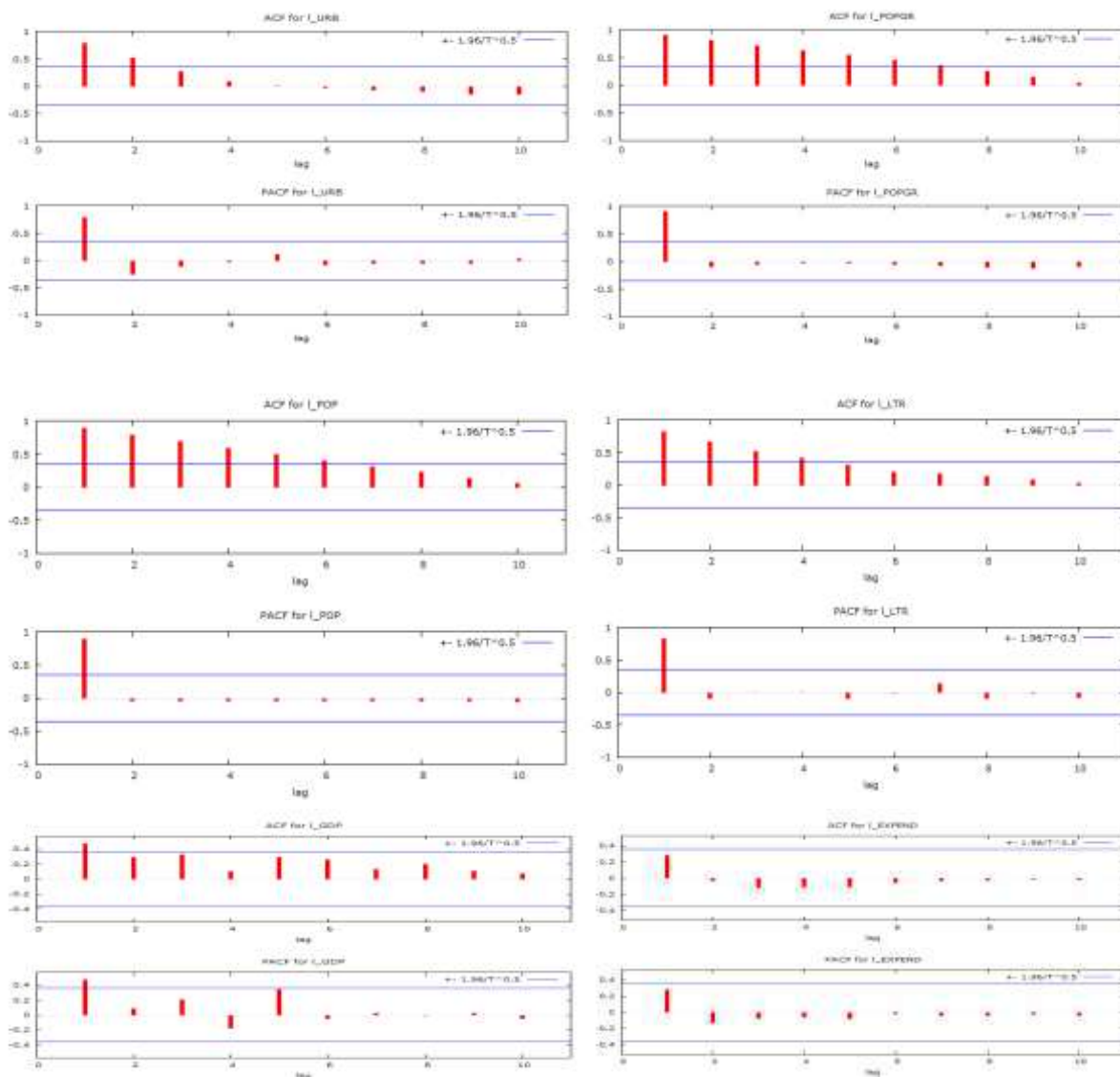


**Figure 3: Time Series Plot for Urban Area Population, Population Growth, Number of population, Literacy rate (%), GDP per capita growth, Average of per capita expenditure, Labour Force (1988-2017).**

#### Correlogram Plot

The Correlogram test ACF to Urban Area Population, Population Growth, Number of population, Literacy rate (%), GDP per capita growth, Average of per capita expenditure and Labour Force. It showed that the stationarity for inflation cannot be claimed on this variable at level

data downwards trend in the beginning of the Correlogram which indicates the variable is declining to zero level. The variables continued a trend downwards after beyond the zero value in the end. The figure shows that there are some frequent moves over the ten lags.



**Figure 4: Correlogram Plot for Urban Area Population, Population Growth, Number of population, Literacy rate (%), GDP per capita growth, Average of per capita expenditure and Labour Force (1988-2017).**

#### Augmented-Dickey Fuller (ADF)

To understand that the data is stationary or not stationary Augmented Dickey-Fuller (ADF) test will be needed to analyse. Augmented Dickey-Fuller (ADF) test have three categories without constant,

with constant, with constant and trend which can be denoted as stationary if the P value shows as below 0.05 (5% significance level).



Variable	P-value		
	Without constant	With constant	With constant & trend
URB	0.1321	0.1858	0.0861s
POPGR	0.1803	0.9998	0.5911
POP	0.1004	0.01909	0.9144
LTR	0.999	0.3951	0.3971
GDP	0.9837	0.01139	1.614e-005
EXPEND	0.3127	0.01126	1
LF	0.8584	0.001169	0.004702

### Correlation Matrix

To study the relation between the effects of independent and dependent variables, correlation matrix have been used. Correlation matrix would be

used to measure the existence of relationship between the independent variables via a range of values against the standard average.

Correlation coefficients, using the observations 1988 - 2017					
5% critical value (two-tailed) = 0.3610 for n = 30					
<b>1_URB</b>	<b>1_POPGR</b>	<b>1_POP</b>	<b>1_LTR</b>	<b>1_GDP</b>	<b>1_URB</b>
<b>1.0000</b>	<b>0.7182</b>	<b>-0.7487</b>	<b>-0.8506</b>	<b>-0.7332</b>	<b>1_POPGR</b>
	<b>1.0000</b>	<b>-0.9549</b>	<b>-0.8753</b>	<b>-0.7581</b>	<b>1_POP</b>
		<b>1.0000</b>	<b>0.9516</b>	<b>0.7776</b>	<b>1_LTR</b>
			<b>1.0000</b>	<b>0.7760</b>	<b>1_GDP</b>
				<b>1.0000</b>	
			<b>1_EXPEND</b>	<b>1_LF</b>	
			<b>0.1833</b>	<b>-0.3937</b>	<b>1_URB</b>
			<b>-0.0595</b>	<b>-0.6165</b>	<b>1_POPGR</b>
			<b>0.0843</b>	<b>0.7617</b>	<b>1_POP</b>
			<b>-0.0123</b>	<b>0.7395</b>	<b>1_LTR</b>
			<b>0.0193</b>	<b>0.5369</b>	<b>1_GDP</b>
			<b>1.0000</b>	<b>0.2820</b>	<b>1_EXPEND</b>
				<b>1.0000</b>	<b>1_LF</b>

**Table 1: Correlation Matrix between Urban Area Population, Population Growth, Number of population, Literacy rate (%), GDP per capita growth, Average of per capita expenditure and Labour Force (1988-2017).**

### Multicollinearity

To determining the multicollinearity this research paper follow the correlation coefficient method. The test will conduct if there is a multicollinearity present in the correlation coefficient if it will be more than 0.8/80%. In the test table 1 it shows that there is no multicollinearity and all the variable is under 0.8/80%.

### Ordinary Least Square Results

Ordinary Least Square used to evaluate the obscure parameters in a multi relapse demonstrate by means of limiting the aggregate of the squares of contrasts between the adjusted information and those created by the direct capacity of an arrangement of logical factors. The p-value would be generally used to decide the importance of the individual factors however to a specific degree depending of cases (Weber and Monarchi 2008). Beside that to examine the robustness, OLS would be conducted for the test.



Model 1: OLS, using observations 1988-2017 (T = 29)					
Missing or incomplete observations dropped: 1					
Dependent variable: I_URB					
Constant	Coefficient	Std. Error	t-ratio	p-value	
	-28.0736	6.97512	-4.025	0.0006	***
I_POPGR (X1)	-0.0245945	0.118534	-0.2075	0.8375	
I_POP (X2)	0.246017	0.415573	0.5920	0.5599	
I_LTR (X3)	-0.744570	0.134827	-5.522	<0.0001	***
I_GDP (X4)	-0.0842549	0.0521778	-1.615	0.1206	
I_EXPEND (X5)	0.00176122	0.00149331	1.179	0.2508	
I_LF (X6)	6.84797	1.97948	3.459	0.0022	***

Mean dependent var	1.370627	S.D. dependent var	0.117346
Sum squared resid	0.044461	S.E. of regression	0.044955
R-squared	0.884685	Adjusted R-squared	0.853235
F(6, 22)	28.13024	P-value(F)	2.99e-09
Log-likelihood	52.81705	Akaike criterion	-91.63410
Schwarz criterion	-82.06303	Hannan-Quinn	-88.63656

**Table 2: Ordinary Least Square Test for Urban Area Population, Population Growth, Number of population, Literacy rate (%), GDP per capita growth, Average of per capita expenditure and Labour Force (1988-2017).**

**P value:** P value is compared with the significance value. If the P value is less than the significance level that means the null hypothesis is rejected which is  $\alpha = .05$ . If P Value is greater than or equal to the significance level that means the null hypothesis is not rejected. Among all the variable Population growth is (0.0006), Literacy rate (< 0.0001) and Labour force (0.0022) have a significant level with the Urban Area population growth (URB) of Bangladesh.

**R-squared:** R-squared shows that how much all of the independent variable together explain dependent variable. In this study the highest R-squared considered for Bangladesh 88%.

**Adjusted R-squared:** Adjusted R2 showed the percentage of variation explained by only the independent variables that actually affect the dependent variable. According to the OLS table the Adjusted R-squared is 85% which shows tremendous affect by the independent variable.

**P Value (F):** P value (f) tests the overall significance level of regression model. The significance level for this study is considered as 5% or .05. After data analysing, from the table: 2, P value (F) has found as 2.99e-09 which is respectively less than the significance level. So the model is good fit and the null hypothesis is rejected.

### Multiple Regression Model

$$URB (Y) = \beta_0 + \beta_1 POPGR (X1) + \beta_2 POP (X2) + \beta_3 LTR (X3) + \beta_4 GDP(X4) + \beta_5 EXPEND (X5) + \beta_6 LF (X6) + \varepsilon$$

$$Or, Y = \beta_0 + \beta_1 X1 + \beta_2 X2 + \beta_3 X3 + \beta_4 X4 + \beta_5 X5 + \beta_6 X6$$

$$Or, Y = -28.0736 + -0.0245945 + 0.246017 + -0.744570 + -0.0842549 + 0.00176122 + 6.84797$$

### RESULT

In this study the result shows that the labour forces have a significant impact on urban area population growth. Total labour force comprises people aged 15 and older people who supply labour for the production of goods and services during a specified period. The testing for hypothesis indicates that Labour Force is significant and also has been positively affecting Bangladesh urban population growth at a significant level of 0.1. The labour forces increasing indicates that the high demand of labour supply that impacts on increasing urban area population growth tremendously. As there are no government rules for housing, industry growth and increasing life standard in Bangladesh, so that the urban area is being compromised. Another component literacy rate is impacting for the growth of urban area tremendously as most the people of Bangladesh moved towards to the cities as the better opportunities are developed on city based. The government tries to fulfil basic need but most of the educational facilities created for city based.



## Recommendations

1. Push factors in the rural Areas and Pull factors in the urban areas should be specified then government and the concerned authority should act on this to redress this.
2. The huge exodus from rural areas to urban centres has been on the rise. The most common reasons are obsolete farming methods and lack of modern facilities and services in villages have reduced living on farms to a nightmare forcing the farmers, especially younger ones, leaving the village for finding the city of their dreams. There is a diverse range of ways for stopping the movement. One possible solution may be that the government should equip the farms with modern farming methods and by providing the farmers with small loans so as they can have a decent way of making the ends meet. The experiment in countries like China has been very rewarding and their way can be followed.
3. To bring urban migration to a tolerable level, important services in rural areas such as health services and education must be ensured. Establishing hospitals, universities, sub-government departments in a central area between villages can prevent people's migration to a great extent. In another step, it is possible to encourage investment in agriculture and animal production, both from the rural people themselves, by allocating a special support to farmers and herders. Livestock, or by channelling funds into these areas by creating incentives for investment, thus avoiding some of the reasons for rural migration to get money in cities.
4. Development gap between the Rural Villages and the urban Mega Cities can stop the migration towards the Big Cities.
5. Making jobs are available in the big cities, so people's rush to city area is quite common in search of job or better earnings that becomes an influencing factor on urban population. Government should concentrate in technological advancement & infrastructure development in the rural villages in no time.

## CONCLUSION

This paper has depicted the migration of people to city areas. This migration keeps close association with other dominant factors such as high demand of labour forces, rise of per capita income of

people, available employment facilities in the city areas. Due to this migration, increasing population in the urban areas leaves an impact in the socio-economic and environmental issues. Huge industrialization partly requires this migration, but owing to lacking of proper planning and influences of the government, this problem is getting severe. It is realized and sensed with a great concern that over few years the rural economy sustains non-availability of work force during the time when there remains a high demand of labour. To bring a balance between urban and rural economy, loophole and setbacks should be indented. At the same time proper guidelines should be drawn up. The author firmly assumes this opinion that results put forward in this paper will be beneficial for the planners and researchers who will work in the coming days in the field of urban migration.

## Limitations of the study

First limitation of this research paper is sample size of the study which it is considered small with 30 observations only. As for the analysis part it used annual data from 1988 to 2017 and it seems to be not enough for finalizing the analysis. As the longer period of time for increasing samples size the better analysis and reliability on the variables' results. Moreover, it is recommended for further research to put more effort to find more supported previous study in education variable because in this study researcher did not find enough past studies in line with education variable. It is advisedly to use different type of indicator for infrastructure as infrastructure has lots of dimensions from physical measures such as railways, roads, airports and sea ports to development in institutions like legal services and accounting. This point has been supported by Asiedu (2002), to have the reliability and availability for infrastructure, institutional development of infrastructure needs to be taken into consideration for measuring this variable.

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## ADRENAL INCIDENTALOMA-A REVIEW

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### ABSTRACT

*Adrenal incidentalomas occur asymptotically in up to 80% of cases, but is generally accompanied by comorbidities such as type 2 diabetes mellitus and hypertension. Every patient diagnosed with an adrenal incidentaloma should be evaluated with a detailed medical history and thorough physical examination. Laparoscopic adrenalectomy is currently the gold standard in the management of this pathology either by transabdominal approach or by retroperitoneoscopy. Advances in technology have made it possible for robot adrenalectomy to be performed safely today, but the role it plays in the field of cost-benefit has not yet been clearly defined. The open approach is reserved for those cases where an adrenocortical carcinoma is suspected.*

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### INTRODUCTION

An adrenal incidentaloma is defined as any tumor larger than one centimeter which is diagnosed in an imaging study indicated for a different cause. The incidence varies with age, occurring in less than 1% of those under 30 years of age and up to 7% in those over 70 years of age. This occurs asymptotically in up to 80% of cases, but is generally accompanied by comorbidities such as type 2 diabetes mellitus and hypertension. Every patient diagnosed with an adrenal incidentaloma should be evaluated with a detailed medical history and thorough physical examination. The potential for malignancy of these lesions must be determined by means of imaging studies, currently

there are three main imaging techniques that are used for this purpose: computed tomography (CT scan), magnetic resonance imaging (MRI) and positron emission tomography with F-2-desoxy-D-glucose (FDG-PET/CT). The functional state of the adenomas must also be determined with a biochemical evaluation since the symptoms that most patients present will be due to the overproduction of adrenal hormones, this translating into the need to take the patient to a surgical intervention, evaluating each case individually and taking into account the patient's current state of health, his pre-operative risk, his comorbidities and the patient's preference. Laparoscopic adrenalectomy is currently the gold standard in the management of this



pathology either by transabdominal approach or by retroperitoneoscopy. Advances in technology have made it possible for robot adrenalectomy to be performed safely today, but the role it plays in the field of cost-benefit has not yet been clearly defined. The open approach is reserved for those cases where an adrenocortical carcinoma is suspected .

## DEFINITION

The adrenal incidentaloma is defined as a mass greater than 1 cm that is diagnosed incidentally, in an imaging study by an indication other than the adrenal disease itself and which generally presents asymptomatic or subclinical.<sup>1</sup> The term incidentaloma is defined by very restrictive criteria, however, frequently in the medical literature this term is used more broadly to refer to any tumor dependent on the adrenal gland.

## EPIDEMIOLOGY

A report based on 87,065 autopsies showed a frequency of adrenal adenomas of up to 6% of the general population. Having an increase in prevalence with age, being present in less than 1% of patients younger than 30 years and up to 7% of patients older than 70 years. Similar results have been found in studies based on abdominal tomography, reporting an incidence of up to 4% in the general population.<sup>2</sup>

Non-functional adenoma is the most frequently found diagnosis in cases of adrenal incidentaloma (up to 80% of cases), the incidence of other diseases varies in different types of studies, the incidence of pheochromocytoma ranges from 1.5% to 23% and for adrenocortical carcinoma it varies from 1.2% to 12%.<sup>3</sup>

## CLINICAL EVALUATION

A detailed clinical evaluation and a thorough physical examination are of superlative importance since up to 30% of patients with an adrenal incidentaloma may harbor excessive cortisol , catecholamines, or aldosterone production depending on the criteria used to define excess production.<sup>3</sup> That is why the clinical history should be aimed at discovering manifestations of hypercortisolemia , primary aldosteronism, excess of catecholamines, hyperandrogenism and abdominal discomfort. A history of paroxysmal hypertension, fluctuations in blood pressure during anesthesia, syncope events should alert to the possibility of a pheochromocytom.<sup>3</sup>

Different types of cancer have the ability to metastasize to the adrenal gland including lung, breast, kidney, melanoma, so a history of malignancy and weight loss should alert us to this possibility.<sup>2</sup>

A combination of characteristics that reflect excess androgens and cortisol should warn of the possibility of a cortical carcinoma since this can present in up to 1.2% of cases in the form of an adrenal incidentaloma .<sup>3</sup>

Family history should be ascertained by components of multiple endocrine neoplasia, Von Hippel-Lindau syndrome and neurofibromatosis type 1, although family syndromes are regularly rare, they are especially important in bilateral lesions and subclinical pheochromocytomas .<sup>4</sup>

The initial evaluation in these patients should be aimed at determining two important characteristics: the potential for malignancy of the adrenal tumor, the functional status and its magnitude in the patient's clinical presentation, since this translates into indications for surgical treatment for these patients.

## DETERMINATION OF THE POTENTIAL OF MALIGNANCY

All patients with a recent diagnosis of incidentaloma should be evaluated with imaging studies that help to identify characteristics that are commonly attributed to lesions of benign origin, generally less than 4 centimeters in size, well-defined contours, without invasion of neighboring structures and density homogeneous to the application of contrast. Benign adrenal adenomas contain large amounts of intracytoplasmic lipids, approximately 70% of adrenal adenomas are rich in lipids.<sup>5</sup> For the differentiation of malignant from benign lesions, there are three imaging techniques that are mainly used today: computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography with F-2-deoxy-D-glucose (FDG-PET / CT).

**Computed tomography:** Non-contrast CT scan of the abdomen has become the standard for the initial evaluation of adrenal incidentalomas. The European Society of Medical Endocrinologists in its 2017 Clinical Practice Guideline recommends that if a homogeneous lesion is found in the initial evaluation of an incidentaloma of less than 4 cm and with an attenuation coefficient of less than 10 HU this type of lesion requires no further imaging studies.

**Contrast enhanced Computed tomography:** Up to 30% of adrenal lesions have random pattern by non-contrast tomography (10-30 HU) for which is indicated a contrasted tomography with late washouts (delay washouts).<sup>6</sup>





**Magnetic resonance imaging:** Adenomas with high lipid content usually lose the intensity of the lesion in out-of-phase images compared to in-phase images, while malignant lesions and pheochromocytomas (but also low lipid adenomas) remain unchanged. The simple analysis of the loss of intensity during the phases can be diagnosed in most cases, in those indeterminate cases quantitative analyzes such as the adrenal-spleen signal ratio can be used. However, there is a significant overlap in the characteristics of malignant and benign lesions. Therefore, in some cases MRI cannot distinguish between malignant and benign lesions.<sup>11</sup>

**F-FDG-PET:** It is a modality of nuclear medicine, through which tomographic images are obtained after injection of the radio marker (18-Fluor) used to mark 2-deoxy-D-glucose (18-F-FDG). Glucose and deoxyglucose enter the cell via cellular glucose transporters and are phosphorylated, but while glucose is enzymatically decomposed, deoxyglucose is stored in intracellular compartments, malignant cells have an increase in glucose requirements and therefore have a higher consumption than normal cells. Quantitative measurements of the 18-F concentration within tissues is the most commonly used clinical index. The standard consumption value (SCV) compares the intensity of 18-F consumption within the adrenal gland with an average intake of the body, this technique has a sensitivity of 99 - 100% and a specificity of 94 - 100%, with a positive predictive value of 83% for malignant lesions.<sup>2</sup>

**Role of Fine Needle Aspiration Biopsy:** The use of aspiration biopsy has decreased as a result of improving the accuracy of diagnostic imaging and its use is not routinely indicated at present in the diagnostic approach to this pathology.<sup>1</sup> However, it may still be useful in patients diagnosed with an adrenal mass in a patient with a history of an extra adrenal malignancy as long as the following three criteria are met:

- The lesion is shown to be hormonally inactive (in particular, pheochromocytoma has to be excluded).
- The lesion has not been characterized as benign by image.
- The treatment could have a significant change depending on the result of the biopsy

As for the diagnostic performance, it is known that the aspiration biopsy has a sensitivity and specificity of 87% and 100% respectively. The rate of non-diagnostic

biopsies is around 11.2%, while the rate of complications is 2.5%.<sup>7</sup> Although rare, complications that can occur are pneumothorax, bleeding, infection, and pancreatitis.

### Biochemical evaluation

Up to 30% of patients with an adrenal incidentaloma may harbor excess cortisol, catecholamines, or aldosterone production depending on the criteria used to define excess production.

**Autonomous cortisol secretion:** Defined as the subtle autonomous production of cortisol by an adrenal mass or incidentaloma, which is associated with suppression of production by the contralateral gland, but without obvious clinical signs of Cushing's syndrome, a prevalence of up to 20% in patients with an incidentaloma.

The use of the low-dose suppression test for dexamethasone is recommended for screening with a sensitivity and specificity of 73-100% and 90% respectively.<sup>5</sup> Levels of blood of cortisol after the administration of 1 mg dexamethasone  $\leq$  50 nmol / L ( $\leq$ 1.8  $\mu$ g/dL) is a diagnostic criterion for exclusion of autonomous secretion of cortisol, level of cortisol serum between 51 and 138 nmol/L (1.8-5.0  $\mu$ g/dL) are taken as evidence of possible autonomous secretion of cortisol, whereas serum levels above 138 nmol/L (5.0  $\mu$ g/dL) confirm autonomous secretion cortisol.<sup>1</sup>

### Diagnosis Screening

Measurement of plasma aldosterone concentrations (PAC) and plasma renin activity (PRA) or direct renin concentration for analysis of the aldosterone-renin ratio (ARR), is currently the most reliable method of screening for primary aldosteronism.<sup>8</sup> To adequately perform this test, it is recommended that all medications that interfere with the renin-angiotensin system (antihypertensives including diuretics) be discontinued 4 weeks prior to sample collection. Other medications that should be withdrawn, but with a shorter period of two weeks are beta-blockers, clonidine, methyl dopa, NSAIDs, ACEIs, angiotensin receptor blockers, and dihydropyridine calcium channel blockers.

### Confirmatory

Suppression tests used most commonly used are salt loading (via intra venous or oral) fludrocortisone, or challenge with captopril. The salt load test is widely used as it is accessible, cheap and reliable, but there is a risk of water overload. 2L of 0.9% saline are administered for 4 hours and thereafter the PAC is measured. This has a sensitivity of 88% using a cut-off



value of  $\leq 5$  ng/dL ( $\leq 139$  pmol/L), the suppression test consists of administering 25-50 mg of captopril orally after sitting or standing. The reference cutoff is a decrease in PAC  $\leq 30\%$  or an ARR  $\geq 200$  pg / mL.<sup>9</sup>

## TREATMENT

The presence of symptoms or tumors that are biochemically functional are an indication for surgical treatment in adrenal masses. In asymptomatic masses, several clinical, radiological, biochemical and histological factors must be taken into account that help to distinguish tumors with malignant potential from benign tumors, determining which can be observed and which should undergo surgical treatment. An issue that is still controversial is the autonomous secretion of cortisol or also known as sub clinical Cushing's syndrome .

### Peri-operative treatment:

All patients diagnosed with an adrenal incidentaloma, who will be taken to surgical treatment, and especially those with a functioning hormonal status, should be treated in a multidisciplinary team with experience in managing this type of disease in the pre-operative, the trans- operative and the post-operative since each of these has peculiarities in its management.

### Surgical approach

#### Trans- abdominal laparoscopic adrenalectomy vs posterior retroperitoneoscopy adrenalectomy

Currently, laparoscopic adrenalectomy is the gold standard in the treatment of this pathology, either by trans- abdominal approach or a retroperitoneoscopy approach, both offer advantages and disadvantages that will be discussed later. The trans-abdominal approach was initially widely accepted since the vision it offers is more familiar to most surgeons and allows it to be combined with other abdominal procedures. This approach requires mobilization of the colon, spleen, pancreas (left) and liver (right) and lysis of adhesions if they are present from previous surgical procedures. Laparoscopic adrenalectomy by anterior approach has been shown to be possible safely without a significant increase in surgical time, rate of complications, and rate of conversion or in the days of hospital stay.<sup>10</sup>

The retroperitoneal approach offers direct access to the gland without requiring the mobilization of other organs or the release of previous adhesions. For the selection of the type of approach, it is always imperative to take into account the preference of the surgeon, considering the approach with which he is most familiar, some authors suggest the choice of the type of approach based on anthropometric measurements of the patient. They recommend a

retroperitoneal approach in patients with a distance from the fascia of Gerota the lower skin 5 cm and if the twelfth rib is rostral or level of the hilum kidney. The trans-abdominal approach in obese patients with a body mass index greater than 30 a distance from Gerota to the skin greater than 5 cm, and in cases of tumors larger than 6 cm.<sup>11</sup>

Numerous studies have compared the surgical results of trans-abdominal laparoscopic adrenalectomy (TALA) and posterior retroperitoneoscopy (PRP). However, the results are still contradictory. Some authors have reported PRP is superior to the TALA in surgical time, bleeding, post-surgical pain and days of hospital stay.<sup>12,13,14</sup> Other studies have reported no difference between these two approaches in surgical outcomes including surgical time,<sup>15,16,18</sup> bleeding<sup>17,18</sup> and hospital stay.<sup>15,18</sup>

### Surgical Technique:

#### Trans abdominal laparoscopic adrenalectomy

The patient is placed in lateral decubitus with the affected side up, the arm is raised and placed on a support, pillows are placed between the legs with the lower leg flexed and the upper leg straight, the upper anterior iliac spine is placed on the break point of the table and this is folded to increase the surgical site, the skin is prepared and the patient is dressed regularly, with a sterile skin marker the costal margin and midline are marked, the entry port is performed at the level of the anterior axillary line 2 cm below the costal margin, using the Veress needle or Hasson technique, the abdominal cavity is inflated at 12 to 15 mmHg and a diagnostic laparoscopy is performed, two other work ports are placed 5 mm lateral to the initial port with a minimum of 5 cm between them to allow adequate mobility.<sup>2</sup>

Surgery begins by incising at the level of the right triangular ligament and bringing this dissection to the level of the diaphragm with bipolar energy or with an ultrasonic dissector. Once the liver is released, it is mobilized towards the midline, allowing visualization of the inferior vena cava (IVC) and the adrenal gland, a plane is made between the IVC and the medial edge of the gland with blunt dissection. Delineate the adrenal vein which drains directly into the IVC and double ligation with clips, and cut with a vascular cartridge, once the adrenal vein is secured the rest of its medial-inferior and posterior ligaments are dissected, it is important to maintain gentle traction to avoid capsule rupture. Once the gland is released it is placed in a recovery bag and removed through the 12mm port.<sup>19</sup>



### Surgical technique: posterior retroperitoneoscopy adrenalectomy

The patient is placed in the prone position, jack-knife position. The marks to be taken into account in this position are the 12th rib and the iliac crest. The initial incision is made just below the 12th rib, sharp dissection is performed until entering the retro peritoneum. The index finger is then used to create a gap, and under direct palpation a 5-mm trocar is placed lateral to the spinous musculature. A 12-mm port is placed posteriorly through the initial incision and one more than 5-mm lateral to it. After this, the cavity is insufflated at a pressure of 20 to 24 mmHg, which allows adequate exposure. The first reference that we must identify is the upper pole of the kidney, the vena cava is identified at the medial level, the mobilization of the gland should always start at the lower edge since the dissection of this space can be performed with minimal mobilization of the gland, then the adrenal vein can be identified at the lateral edge of the gland, once dissected it is divided using a vascular stapler or with clips, once the vein is secured the other ligaments can be divided with an ultrasonic dissector. Once the gland is released, it is placed in a bag and removed, hemostasis is verified by decreasing the insufflation pressure to 12 mmHg. Once hemostasis is secured, the ports are removed and the initial incision is closed flat.<sup>2</sup>

### Robot adrenalectomy

Advances in minimally invasive surgery are increasingly used. In 2001, the first robot adrenalectomy was reported. Since then, much information has been published comparing this with laparoscopic adrenalectomy, without showing significant differences. In 2017, a meta-analysis was published that included 27 studies, with a total of 1,162 patients undergoing adrenalectomy, of which 747 were performed with robots and 415 by laparoscopy. There were no significant differences in the rate of intra-operative complications, postoperative complications, mortality, conversion to laparotomy, bleeding or a significantly higher surgical time.<sup>18</sup> Robot adrenalectomy is possible and can be performed safely performed with clinical results similar to laparoscopy in the appropriate population. However, better studies with a good level of evidence should be carried out to determine the role of laparoscopic adrenalectomy in the field of cost-effectiveness in the years to come.

### Open approach

Adrenocortical carcinoma (ACC) is the main threat for an adverse outcome in patients undergoing surgical treatment. In laparoscopic adrenalectomy in patients with suspected ACC, the possibility of incomplete macroscopic resection, capsule rupture,

conversion to laparotomy, and invasion of peri-adrenal fat is a concern. That is why in 2015 the NCCN clinical practice guidelines recommended an open approach when suspected of adrenocortical carcinoma.<sup>20</sup>

However, the clinical practice guidelines of the European Society of Endocrinologists recommend the laparoscopic approach in patients with unilateral adrenal incidentaloma with suspicious findings of malignancy less than 6 centimeters, but without evidence of local invasion.<sup>1</sup>

### Partial adrenalectomy

In the last decade there has been a growing interest in partial adrenalectomy, adrenal insufficiency following bilateral adrenalectomy results in a lifetime risk of morbidity from an Addisonian crisis (35%), decreasing the quality of life and a mortality risk of 3%.<sup>21</sup>

The incidence of bilateral adrenal tumors is estimated to be from 4.25 to 80%. Pheochromocytoma may be bilateral in 80% of cases while sporadic cases reach a rate of 25%, aldosterone producing adenomas are bilateral in up to 4%.<sup>22</sup>

Partial adrenalectomy is a procedure that can be performed safely by laparoscopy, the requirement to perform a partial adrenalectomy is to leave enough well vascularized tissue after resecting the tumor, which can be done using ultrasound energy and an intraoperative ultrasound.

Concern with this conservative cortex technique recurrence rates reach 21 to 60%. Taking the patient to life-long clinical and biochemical surveillance.

### CONCLUSION

Patients with adrenal incidentaloma should get a full history and complete clinical examination. Imaging studies are helpful in most of the patients to an adequate surgical planning. Laparoscopic approach is useful to resolve most of these cases. Nevertheless, the treating surgeon should always assess the risk of potential malignancy.

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## EFFECTIVE WAYS OF TEACHING YOUNG LEARNERS

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### ABSTRACT

*The article is devoted to the problem of studying modern methods and techniques of teaching a foreign (English) language. As an example, several modern and relevant methods of teaching English are given. In this article, special attention is paid to the specifics of using these methods in the educational process. The effectiveness of methods of teaching a foreign language is also considered, since it contributes to the formation and development of various abilities, skills, general educational and professional competencies that are important for a modern specialist.*

**KEYWORDS:** *methods and techniques of teaching English, young learners, classroom, individual and group work with learners*

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### DISCUSSION

Young children do not come to the language classroom empty-handed. They bring with them an already well-established set of instincts, skills and characteristics which will help them to learn another language. We need to identify those and make the most of them. For example, children: are already very good at interpreting meaning without necessarily understanding the individual words; already have great skill in using limited language creatively; frequently learn indirectly rather than directly; take great pleasure in finding and creating fun in what they do; have a ready imagination; above all take great delight in talking!

How does each of these qualities help a child in the foreign language classroom and how can the teacher build on them?

*Children's ability interpreting meaning without necessarily understanding the individual words*

We know from experience that very young children are able to understand to grasp meaning what is being said to them even before they understand the individual words.

Intonation, gesture, facial expressions, actions and circumstances all help to tell them what the unknown words and phrases probably mean [4, 167]. By understanding the message in this way they start to understand the language. In later life we all maintain this first source of understanding alongside

our knowledge of the language itself. It remains a fundamental part of human communication.

Children come to primary school with this ability already highly developed. They continue to use it in all their school work. For example, even though their mother tongue skills are already well established, they may well find it difficult to follow purely verbal instructions and information. When this happens, or sometimes simply out of laziness or inattention, children will tend to rely on their ability to 'read' the general message. In fact we can see this happening most clearly when they get it wrong! More importantly, particularly in terms of language development, their message-interpreting skill is part of the way they learn new words, concepts and expressions in their mother tongue as their language expands to meet the new challenges of school [5, 58].

So when children encounter a new language at school, they can call on the same skill to help them interpret the new sounds, new words and new structures. We want to support and develop this skill. We can do this by making sure we make full use of gesture, intonation, demonstration, actions and facial expressions to convey meaning parallel to what we are saying. At the same time, we must also try not to undermine the children's willingness to use the skill. This can happen when we try to 'pin down' understanding too precisely.

Language activities which involve children in guessing what phrase or word someone has thought of are very good examples of this phenomenon in



action. As far as the children are concerned, they are not trying to learn phrases: they are concentrating on trying to guess right. However, by the time they have finished the repeated guessing, they will have confirmed words and structures they only half knew at the beginning. They will have got the phrases firmly into their minds. They will probably even have adjusted their pronunciation. Guessing is actually a very powerful way of learning phrases and structures, but it is indirect because the mind is engaged with the task and is not focusing on the language. The process relates very closely to the way we develop our mother tongue. We do not consciously set out to learn it. We acquire it through continuous exposure and use.

Both conscious direct learning and subconscious indirect learning, or 'acquisition', are going to help someone internalize a new language. Experience tells us that we all seem to have something of both systems in us. It will depend on a mixture of intellectual development, temperament and circumstance whether we are more inclined to use one system rather than the other. In practical terms each system has its contribution to make. Conscious direct learning seems to encourage worked-out accuracy [2, 167]. Unconscious indirect learning, or acquisition, encourages spontaneous and therefore more fluent use. Ideally we want both accuracy and fluency to develop. So in the classroom we need to provide scope for both systems to operate. You may also notice that in your class you have children who are temperamentally more inclined to operate in one way than the other. In all aspects of life there are people who like to get everything sorted out and others who like to 'muddle through'. The children who like to get on with something no matter how it comes out will need encouragement to work at conscious accuracy, and others who are keen to be precise will need encouragement to risk getting things wrong sometimes in order to communicate. We must be clear in our own minds which we are trying to encourage at any given moment and must also make it clear to the children in the way we set up activities what it is we are asking them to do. This is because each of the processes can easily get in the way of the other.

In general terms, however, it is probably true to say that at primary school level the children's capacity for conscious learning of forms and grammatical patterns is still relatively undeveloped [6, 187]. In contrast, all children, whether they prefer to 'sort things out' or 'muddle through', bring with them an enormous instinct for indirect learning. If we are to make the most of that asset we need to build on it quite deliberately and very fully.

For this reason, we can see why it is a good idea to set up real tasks in the language classroom if we can. Real tasks, that is to say worthwhile and interesting things to do which are not just language

exercises, provide the children with an occasion for real language use, and let their subconscious mind work on the processing of language while their conscious mind is focused on the task [3, 198]. We can also see again why games are more than a fun extra. They too provide an opportunity for the real using and processing of language while the mind is focused on the 'task' of playing the game. In this way, games are a very effective opportunity for indirect learning. They should therefore not be dismissed as a waste of time. Nor should we regard them just as something we can introduce as a filler for the end of the lesson or as a reward for 'real work'. They are real work. They are a central part of the process of getting hold of the language. This is perhaps just as well because children have a very strong sense of play and fun.

Depending on your approach, these cute kids can either be the nicest young people you will have the pleasure of teaching or a nightmarish group of unruly children that reduce grown men to tears! Teaching young children properly is not for the fast quitter as it will take time to get into the swing of it. There is a good chance that at some point you will have to deal with crying, toilet issues, screaming and students who have the attention span of a gold fish. Some useful tips are:

Be clear and direct in how you speak. Use simple 1 or 2 word commands and be prepared to apply a firmer tone to your voice when need be. Be animated and lively. Not everyone will be comfortable with jumping around, singing and dancing for an hour but it will certainly make you more likable if you are able to act silly in class. Kindergartens tend to respond extremely well to TPR (Total Physical Response) based activities whereby they produce the language through physical actions. If you are teaching animals, have the students doing the actions and noises, when teaching them feelings; have them performing the emotion etc.

Short, sharp games and activities: The best way to keep your kids' attention and save time dealing with bored students is to keep things moving all the time. When planning your lessons, start off by introducing your grammar point or vocabulary then run through a series of 5-10 minute games and ALWAYS have back up plans. When you see students losing focus, move onto the next activity. Change the environment: mix up your classroom setting often to steer them away from boredom. Get them on their feet, swap the seating plan and sit them in a circle on the floor. Don't be afraid to use your teaching assistant: younger learners will struggle more than anyone to grasp your meaning in English. To save time and tears of despair, translate the commands and tasks to them before you start playing. Use gimmicks: any small change or new object that you bring into class will feel like a completely new adventure to your young students.



Surprise them by bringing in a simple gimmick to use in your activities such as a ball, a dice, a puppet or some pictures. Reward them: sweets/candy obviously gives young children an incentive to learn but without this kind of luxury you can easily keep them eager by giving them other kinds of rewards. A high-five or pat on the back after a successful activity and at the end of class will make them feel like they have achieved something, as will the opportunity to do some drawing or coloring activities during the lesson. The most effective songs for kindergarten children are about animals and parts of the body.

Such songs can be sung by the teacher as well as the kids and involves moving and interacting, which is always a fun way of learning especially for kinesthetic learners. A pre-task could be that the teacher talks about the song and asks her pupils if they have heard it before. After that, they can go through the body parts orally with the movements. The task itself involves singing the song in the second language for the children and then asking them to stand up and sing along. Since most of the children will already know the melody of the song, it is ideal for singing together. A post-listening activity could be that the teacher shows the pupils pictures of each body part, one at a time and the pupils have to raise their hand to say what body part is being displayed. Since the song only teaches eight body parts, this subject has to be taught again where the teacher includes other body parts such as arms, legs stomach or back. After that, the teacher can move on to clothes and connect them with each body part so that the pupils will not forget what they already learned.

There are numerous things that can be taught to young children through songs that will remain with them throughout their lives and there are songs to be found about most elementary concepts like letters, numbers, colors, weekdays, months, seasons, body parts and clothes that will make the lessons full of life and excitement.

Children usually learn the alphabet from an early age and since almost every child knows how to sing their ABCs in their native language it is ideal to teach it in the target language as well. During pre-listening activities, the teacher can go through the alphabet on the blackboard with his students to get them used to hearing the right pronunciations of each letter. The assignment itself could be that the teacher plays a simple version of the alphabet song for the class where the letters are displayed one by one on the screen or the board. Playing the song twice will make it more effective because many of the children will be hearing it in the target language for the first time.

Teaching numbers through music is also a fun way for young children to learn. Most children already know how to count in their first language and quite a few will even know how to count in the target

language as well. An ideal pre-task would be for the teacher to draw each number from 1-12 on the board in numbers. The teacher will then tell his students about the song that they will be hearing to get them prepared for the main assignment. It is important to teach numbers from 1-12 because it will make it easier for the students to learn about the time as well as the months later on since there are twelve hours in a day and twelve months in a year.

One of the great moments in the foreign language classroom is when a child makes a joke. The child who insisted with a grin that he had 'one and half (sic) brothers and when questioned about the half by the puzzled teacher, said, 'Very small' (showing baby size with his hands), had broken through a crucial barrier. He had made the language his, a tool for what he wanted to say. He was using half-known bits of the language to give shape to the thoughts going through his mind. We have heard a great deal about authenticity. This is the greatest authenticity of them all. This small and apparently trivial incident encapsulates what we are trying to achieve [2, 167]. We want our learners to want to and dare to use the language for their own purposes. We want them to use it accurately if possible, inaccurately if necessary, but above all we want them to make it theirs.

Primary language work, in contrast, can give emphasis to the attitude goals. It should not lose sight of the content goals but should at the same time give clear priority to promoting the attitudes and responses mentioned above, i.e. confidence, willingness to 'have a go', risk taking. At primary school we have more freedom to do this because most of us are not yet too tightly constrained by the content focus of the public examinations system. It can also be argued that we have a responsibility to give high priority to the attitude goals at primary level [2, 190]. After all, if we do not establish risk taking, confidence and general goodwill towards language learning at this early stage, our colleagues at secondary level will have a very difficult task ahead of them. In all subjects, of course, not just in foreign languages, the learners' response to the work is central to their later progress. In languages, however, this aspect is particularly crucial. This is because of the special nature of language.

There are plenty of classroom activities which provide an extremely useful combination of real communication and quite deliberate rehearsal of a clearly identified set of fairly restricted material [1, 213]. They can involve any of the four skills of listening, speaking, reading and writing, but their biggest contribution at primary level is probably in the field of spoken interaction between children. Because the range of language items can be limited without destroying the element of real communication, the teacher can leave the children talking to each other without fear that the need to



communicate will lead them to lapse totally into the mother tongue. That is why so-called 'information gap' activities continue to be so popular in the language classroom. Look at the following example. It is a 'describe and arrange' activity.

Children at the age of 6 and 8 are very sensitive and interested in active games in language acquisition. They are very enthusiastic about learning something new and they acquire it by practicing it physically and visually. Children at this age are keen on being told short stories and fairy tales of which we can take the advantage in teaching a second language. Young children, especially at the age of 6 or 7 are not very good at writing and reading in a foreign language but they are very good listeners – they love drawing, they like acting out fairy tale heroes by imitating them. We must take these factors into consideration while planning a lesson for young learners – we must use communicative and total physical response approach techniques to have a better result.

Almost all communicative methods are appropriate for the “before, while and post activities” in regards of music in class.

Motivation is the key to success of any classroom activity. The teacher should try to use authentic materials, make tasks life – related. The psychological atmosphere in class is also very important in reaching the desirable effect of the activity. The teacher should try to make the teaching student – centred. He should more be the leader of the team than authoritarian supervisor. Don't forget to praise your students.

Modern information technologies give teacher a great variety of tasks and the teacher can easily choose the appropriate song for the appropriate topic.

All of the mentioned above activities and can confidently say that music really works and gives positive results if used correctly. The teacher should take into consideration the following items: the choice of song by the topic, vocabulary, authenticity; study of lyric and vocabulary; sing aloud; let the young learners improvise; review the material. Gradually every teacher adjusts himself to the needs of his students, masters his or her proficiency and finally becomes a real professional in teaching trade.

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## APPEAL OF PROPER NAMES IN PHRASEOLOGICAL UNITS FROM A TYPOLOGICAL PERSPECTIVE

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### ABSTRACT

*There are different approaches to the distinction between proper names and common nouns. This article proposes to consider this problem from the standpoint of typological linguistics, namely, within the framework of the theory of phraseological units.*

**KEYWORDS:** *proper name, common name, category, appeal, phraseological unit.*

### DISCUSSION

European languages for many centuries drew bright and expressive images from the Treasury of biblical and ancient myths [1, 220-221]. Phraseological units (PU), which have become international, function in close unity with other categories of language and are subject to the laws of its development [2, 190-192]. In the process of evolution, semantic discrepancies in PU with initially identical semantics often arise.

Thus, the myth of the construction of the tower of Babel is reflected in the phraseology of English and Russian languages or the partially appellative proper name (PN) of the biblical first man Adam became an onomastic component of 12 Russian, 14 English, 12 German, and 14 French phraseological units. Partial appeal of PN in phraseological contexts is based on its well-known encyclopedic meaning, i.e. information about Adam set forth in the Old Testament, as well as in the legends and traditions of apocryphal [early Christian] and biblical literature.

Thus, theoretically, all phraseological meanings of the PN "Adam" should be identical in the language being compared. In reality, there are differences along with coincidences. From 17 phraseological meanings represented in the sum of the languages compared, 10 are in the PU of Russian, 9 in English, 6 in German, and 12 in the PU of French. If we introduce here a kind of selectivity coefficient, deducing it from the ratio of the sum of

phraseological meanings of PN presented at the phraseological level of a given language to the sum of all the different phraseological meanings of PN in comparable languages, then in Russian it will be 0.6, in English – 0.5, in German - 0.3, and in French 0.7.

Thus, in the PU of other comparable languages, the same meaning of the named is does not occur as in the Russian proverb "ХОЗЯИН В ДОМЕ, ЧТО АДАМ В РАЮ" (The master in the house is like Adam in Paradise).

The meaning acquired by this PN in the phrase "in the costume of Adam" in German is revealed in a phrase with a different structure and imagery: *Adam und Eva spielen*, and the English language does not master phraseologically the same component of the encyclopedic meaning of PN, on the basis of which the named phrase Russian and German languages.

Another component of the encyclopedic meaning of this name is converted into the phraseological meaning of PN in all compared languages (though phraseological units can differ structurally), except for German: Russian "ПРОЖИТЬ АДАМОВЫ ЛЕТА", English "as old as Adam", French *vieux comme Adam* ["very old"].

On the other hand, at the phraseological levels [3, 434] of other comparable languages, the meaning acquired by PN in the French phraseological unit *voyager par la diligence d'Adam* = ("travel on your own two") is not represented.



The national identity of each of the compared languages is manifested not only in the selective phraseological "development" of the individual components of the encyclopedic meaning of PN, but also in the very form of its phraseological interpretation, which is reflected in differences in the structural design, imagery, and often in the differing global meanings of phraseological units, containing PN with identical phraseological meanings.

For example, the phraseological meaning that arose on the basis of the same component of the encyclopedic meaning of the PN Adam in the Russian language is revealed in the phraseological unit under Adam, in English since Adam was a boy (lit. "when Adam was a child"), [= ' long ago '], and in German in the PU with a different global meaning: er war mit Adam jung (lit. "he is the same age as Adam") "he is very old".

In total, 87 PNs with a specific denotative correlation that are part of the phraseological units of the mapped languages were identified. An analysis of these phraseological units allows us to state some features of isomorphism that manifest themselves:

1) in the coincidence of the phraseological meanings of the onomastic component in different phraseological contexts;

2) in the interlanguage borrowing of phraseological units with PN: the specific gravity of phraseological units ascending to one source is significant.

However, despite the fact that information (the encyclopedic meaning of PN) is exposed to the phraseological "mastering", which the speakers of the languages being compared have an absolutely equal volume, each language here shows its own identity [4, 110-111], the principle of selectivity, which can be quantified assessment and which is reflected:

1) in the "individual search" of the components of the encyclopedic meaning of the name for their phraseological "development";

2) in the lexical, structural and figurative differences in the phraseological units of the compared languages with the complete coincidence of the phraseological meanings of their PN;

3) in phrase-making based on borrowed phraseological units. For example, the "Hamlet" that arose from the Shakespearean tragedy, which has become the phraseologism in comparable languages that he is Hekube, what is he to him? (personal pronouns here vary) in the meaning of 'an indifferent attitude to anything, only in German became the basis for further phrase-writing. There is a phrase "it doesn't matter to anyone";

4) finally, the principle of selectivity is also manifested in the fact that in one of the compared languages a partial appeal of this information system

in a phraseological context does not occur at all, although objective prerequisites are present for it: the name is frequency, the encyclopedic meaning is well known to native speakers, and the latter is in contact with languages in which phraseological units operate with a given PN, but does not borrow them.

Thus, comparing the individual fragments of phraseological systems of several languages connected by a single attribute, one can get a visual representation of how, under the influence of the same factors external to phraseological systems, the key points of their convergence appear and, at the same time, the deep national originality of phraseological systems is preserved [5, 88-89].

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## BORROWINGS AND ENRICHMENT WITH NEOLOGISMS OF THE ENGLISH LANGUAGE

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### ABSTRACT

*This article addresses the topic of borrowing in English. The author gives a generalized description of the historical periods of the English language, analyzes some words. Based on the study, it was found that foreign borrowing is one of the important types of enrichment of the vocabulary of the English language. However, despite the high borrowing rate, English cannot be classified as a language of international origin.*

**KEYWORDS:** *English, Latin, borrowings, Germanic tribes, ancient Germans, Britain, Celtic origin, Scotland, Scandinavian and Norman conquests, Anglo-Saxon population.*

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### DISCUSSION

The topic of borrowing in the development of the English language is very relevant. One of the ways to replenish the vocabulary is to borrow from other languages of the world. For example, the Old English language had in its lexical composition borrowings from two languages: Latin and Celtic. The Central English language had in its lexical composition borrowings from the French and Scandinavian languages. In the early New England period, borrowing took place during the Restoration era. The words were borrowed from Italian (these were mainly words related to visual arts, music, theatre), Spanish, Dutch (these were words related mainly to navigation and painting). In the future, the range of languages from which borrowings came into the English language continued to expand. Borrowings came from Russian, German; languages of the countries of the Middle East, languages of India and Australia. These borrowings are explored by such linguists as K.P.Ivanova, A.N.Smirtitsky, L.F.Zaleskaya. The history of the English language is traditionally divided into three periods: Old English - the period from the beginning of written monuments (7th century) to the end of the 11th century, Middle English - from the beginning of the 12th century to the 16th century, New English - from the 16th century to the present day.

The first population of the British Isles was a non-Indo-European tribe of Britons, whose level of material culture belongs to the Neolithic (late stone

age). The next settlers were Celts. In 55 BC, Julius Caesar made an expedition to the British Isles. This first campaign was not successful, but in the following year 54 BC, he succeeded in imposing tribute on the Celts and taking hostages. Roman rule in Britain lasted until the fifth century AD. After the Roman legions left, Britain was taken over by the Germans. By the end of the sixth century, the Germans had finally settled in all of Britain, except for the highlands. The language of the conquerors influenced the language of the indigenous population. The most ancient Germanic inscriptions (from the third century AD) used a runic alphabet consisting of 24 characters containing only vertical and oblique lines. Only two old English monuments of runic writing have been found. These are inscriptions on a stone cross that stands near the village of Gutwell, and a whalebone box decorated with carvings and bordered with an inscription telling of legendary creatures. Christian missionaries introduced the Latin alphabet in England.

In old English, there are two layers of Latin borrowings: the oldest layer, which includes words borrowed by Germanic tribes from the Romans before the migration to Britain and after the migration – from the Celts; the second layer – words related to religion, associated with the introduction of Christianity, which began in 597. The first layer of borrowings were words related to trade, agriculture, as well as the names of objects of material culture: Win – wine (from Latin *wīn* > present time wine,



Pound – lb. (from Latin *pondo*) > present time pound, Mynet – coin (from Latin) > present time – mint. The Germanic tribes only knew apples from fruit, and other fruits and vegetables were known to them later from the Romans: *Pere* – pear (from Latin), > present time *pear* *Pluwe* – plum (from Latin) > present time plum, *Bete* – beet (from Latin *beta*) > present time beet. The ancient Germans were engaged in animal husbandry and knew well what milk was. However, they were introduced to the preparation of butter and cheese by the Romans: *Ciese* (from Latin *caseus*) > present time cheese *Butere* (from Latin *butyrum*) > present time butter. They also learned about spices from the Romans: *Mint* (from Latin *minte*) > present time mint. Words related to cooking were borrowed: *Cucene* (from Latin *coquina*) > present time kitchen, *Cuppe* (from Latin *copp*) > present time cup.

During their rule in Britain, the Romans built good powerful roads, their name-strata via-paved road – was taken by the Germans from the Celts: old English *strit* originally meant road, and as settlements began to appear along the roads, *strit* was given the meaning of "street". The Romans also built fortified forts, camps - *castra*. This word has been incorporated into various geographical names: *Lancaster* (in the English dialect - *caster*), *Manchester* (in the dialect *caKco-ceaster* > present *Chester*).

In the most ancient period, Latin words were perceived orally and formed according to the rules of phonetics of the old English language. They have completely assimilated the English language. The second layer of borrowings reflects numerous new concepts in the field of religion. Latin, which was the language of the Church and ecclesiastical science, became widely used in Britain. In the seventh century, monastic schools appeared. The spread of literacy in Latin was reflected in the vocabulary of the old English language, in which quite a lot of Latin words appeared: *Biscop* (from Latin *episcopus*) present bishop *Munuc* (from the Latin *monachus*) > present time monk, *Mister* (from Latin *magister*) > present master. A small number of Celtic words entered the old English language. These include both Celtic words proper and Latin words learned by the Celts. From Celtic proper the words were borrowed into English: *dun* – brown, *binn* – chest, *bannock* – home baking loaf, *dun* – hill, a fortress. Many names of rivers, mountains and cities of Britain are of Celtic origin. The noun *avon* - river is preserved in the form of a proper noun. The names of rivers *Exe*, *Esk*, *Usk* are derived from the Celtic noun *water*. The same word later forms the noun *whisky-whiskey*.

The capital of England, London, also retains traces of Celtic origin in its name. London is called by the Celts: *Llyn-dun* fortress by the river. The Romans converted it to *Londinium*. In Scottish

dialects, the Celtic word *loch* has been preserved-a lake that has been included in the names of many lakes in Scotland of Celtic origin. The name of the Western part of Britain, where the remnants of Celtic tribes settled – is *Weals*. In Wales, iron has been mined since ancient times, and the name of this metal city is also of Celtic origin.

Borrowings from Latin and Celtic came into common use, obeyed the word-formation, grammatical and phonetic rules of old English, and became indistinguishable from the words sought.

In the middle period, the vocabulary of the English language has undergone significant changes. The Scandinavian and Norman conquests had a huge impact, which caused an influx of large amounts of borrowing. Mass borrowing led to an abundance of synonyms, often replacing native words. The vocabulary was enriched and at the expense of internal resources using affixation and word compounding. Historical conditions of development. The Middle English period in the history of England is characterized by two major historical events that left their mark on the further development of the English language. This is primarily due to the following historical and linguistic factors.

There were no sharp social differences between speakers of Scandinavian dialects and the Anglo-Saxon population. Since the ninth century, a mixed population has been formed in the area of Danish rules. Initially hostile relations between Scandinavians and Anglo-Saxons gradually became friendlier. The absence of social contradictions between the conquerors and the local population contributed to the rapid assimilation of the two peoples. English and Scandinavian languages were so close that people who spoke them could understand each other fluently, so direct contact was possible between them.

The contact between the English and French languages that co-existed on the same territory takes different forms due to the difference between them. After the conquest of England by William the Conqueror, the country begins a long period of bilingualism. The feudal nobility uses French, and the majority of the population uses English. Over time, French ceases to be the native language of the ruling class, it goes out of use in everyday life but continues to be artificially maintained as the state language, the language of high society, the court, judicial institutions and the Church. English is considered uplandish and rude. There is much evidence in middle English literature that without a knowledge of French it was impossible to advance in society, and a person who did not speak French is not told of, that is, he was not considered. Thus, the French language has always been separate from the English language. It influenced the English language



but did not mix with it. In the field of vocabulary, the Scandinavian influence differs from the French by its wide coverage of a wide variety of semantic spheres. Common words penetrate from Scandinavian into English, including even pronouns (English - they) and service words (for example, the English preposition till). But the greatest extent of the depth of Scandinavian influence is characterized by the impact of Scandinavian dialects on the grammatical structure of the English language. Mixing with Scandinavian dialects contributed, first of all, to the acceleration of the process of weakening unstressed endings in English and the disintegration of the declension and conjugation system. In the process of the formation of a mixed Anglo - Scandinavian dialect, a uniform grammatical system was also to be developed. Morphological differences between English and Scandinavian were more significant than differences in vocabulary. If it is not difficult to identify the Scandinavian stein - "stone" with the English stan (not to mention such correspondences as the house, Scandinavian dom-r; - Old English fisc - fish, Scandinavian fisk - g; b and so on), then in the inflexion system such identification Grammar affixes were impossible.

As a result of the collision of two different systems of inflexion, neither of them has survived, both of them have been simplified by the mutual contact of languages, and have undergone numerous analogical transformations. The dependence of morphological processes in English on Scandinavian influence is confirmed by the fact that this process was particularly intense in the area of Danish rules, where it ended more than a hundred years earlier than in other areas. Since the majority of the population spoke English, most of the English forms won. In other words, the English language was the winner, and the Scandinavian dialects were lost in it. So, the Scandinavian influence on English morphology was not that the Scandinavian forms were borrowed, but that the crossing contributed to a change in the grammatical structure of the English language. The Scandinavian influence on the syntax of the English language was also significant.

French influence in the field of morphology is limited to word-formation. A significant number of words – forming elements-suffixes and prefixes-have entered English from French. Such influence was possible because the English language borrowed from French, a significant number of words, including derived words.

Scandinavian loanwords are so closely intertwined with old Anglo – Saxon words that it is often difficult to determine whether we have a loan or just a semantic change in an English word caused by Scandinavian influence. A striking example of this change is the old English word dream > middle

English drem-dream, in which the form is English, but the meaning is clearly Scandinavian since in old English this word meant "celebration, joy" while the meaning "dream" was typical only for Scandinavian languages. Borrowings from Scandinavian languages led to the formation of Scandinavian-English etymological doublets. This happened in cases where both etymological parallel lexical units – the Scandinavian and English word-were preserved. The difference between the Scandinavian and English forms of the word was used for semantic differentiation, resulting in two different, though etymologically identical, or related words.

Based on the above, it should be noted that the history of the English language is inextricably linked with the history of England. When the Romans left the British Isles in 410, the Latin language went with them. The true inhabitants of the island (the Britons) continued to use Celtic languages. The ancestors of modern Englishmen did not waste time. In 449, the Germanic tribes of the Angles, Saxons, and Jutes began their first raids on the Islands. The language of the conquerors, to which only a handful of Celtic words were added, is now called Anglo-Saxon. In the sixth century, missionaries brought Christianity to England. Latin words, borrowed from the priests, fell immediately into the spoken language. The changes that took place from the sixth to the fifteenth century were natural and were not supported by any theory. People tried to speak as their neighbours did, and everyone who could write at all tried to capture the sounds of their speech on paper. With the spread of literacy, English has slowed its change, but it continues to change to this day. The ease of use of the rules, as well as the richness of the vocabulary, which continues to expand, has allowed English to become an international language of communication over the past half-century.

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## INTEGRATED TEACHING AND LEARNING

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### ABSTRACT

*ICT acts as a core component in edification without which teaching and learning is impossible. If and only if edification of the entire subjects/entire curriculum is conducted through technology then this process of edification is called as "Integrated Teaching and Learning". Further it is the base for the entire curriculum.*

*If we look back, in India, English was playing key role and was a base for learning all the subjects/curriculum, time has changed and current trend is that, ICT is the base for learning the entire subject/curriculum. The one who doesn't know how to use ICT & integrate it in curriculum definitely will miss the train and he/she will be cornered. Further it is a yardstick for measuring development of a nation in the 21st century.*

*Information communication technology is the basket of all the electronic gizmos used in communication. Further Integrated teaching and learning creates hyper loop between acquired knowledge and applying acquired knowledge in real life.*

*The very purpose of this paper is; Injecting the technology in edification further to study the impression of the technology by comparing with the traditional methodology of teaching and producing skilled and semiskilled professionals to contest at global level and facilitating other aspects of life.*

*The post effect of integrated teaching has resulted better understanding of the subject and is a boon to education. All the educational institutes/schools must integrate and make use of the cutting edge of technology. Further by integrating ICT one can create exuberance atmosphere.*

**KEYWORDS:** *hyper loop, attributes, edification, cutting edge of technology.*

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### INTRODUCTION

With the laps of years all the nations have been heading towards the advancement in the field of education. The technology has no doubt transformed the way of edification as compared to what it was in the bye-gone days.

What really sets apart is this; in the conventional approach edification is fulfilled if a teacher takes care of syllabus but the nature of integrated teaching and learning is such once teacher or pupil knows how to handle and use ICT, the life of edification starts in an exponential paths.

The traditional edification still exists in larger part of India and it focuses more on hypothesis and is a teacher centric process where teaching is monotonous and there is a

monopoly of a teacher in classroom environment. In contrast the integrated teaching focuses not only hypothesis but also it builds link/connects to real life applications.

ICT acts as a core component of edification. It is the kernel of edification without which teaching and learning is impossible. All the curriculum subjects will be dealt with use of technology. This process of edification is called as "Integrated Teaching and Learning".

A number of scholars have viewed the concept of ICT from different perspectives and viewpoints. ICT is also seen as a vital skill for learning different subject areas.



## CLASSIFICATION OF ICT IN EDUCATION

ICT can be classified in education in the following ways:-

(i) Teaching and Learning about ICT: In this type of classification teaching and learning takes place as of the one core subject in the curriculum.

(ii) Teaching and Learning with ICT: ICT acts as a handy tool and is a medium to facilitate teaching and learning pedagogy. Further it is the very next stepping stone for changing the face of edification.

(iii) Teaching Learning through ICT: In this type of classification, ICT acts as a core component of edification. It is the kernel of education without which teaching and learning is impossible. All the curriculum subjects will be dealt with use of technology this process of edification is called as "Integrated Teaching and Learning". The technology is a boon. Integrated teaching allows learners to acquire knowledge in different dimensions. It enables hyper loop to interact with subject experts for gaining hyper knowledge, further it has changed the face of edification.

"A Picture is a worth of thousand words", Since English is not our mother tongue most of the students fail in understanding the concepts in the classroom teaching, hence by introduction of integrated teaching, a teacher can show picture, image, animation or multimedia content or making video conferencing (expert teaching) for students to better understand the concept.

In its inception technology was restricted to the preparation of results, results publication, and circulating circulars in and outside the institution and particularly ICT was used for the administration in the school. Later the gizmos were became the part of classroom teaching and learning. Today by the integration of technology we developed cohesive system unknowingly, meaning entire organization is an umbrella of Information communication technology where teachers, experts, students and related folks exchange their information and the information is on finger tips.

With invent of new gizmos there is a dramatic improvement in the system performance. The Biometric attendance, Result Analysis through Excel application, online tests, video conferencing are some examples not only changed the working culture but also enhanced the system performance

Now education paradigm shift has taken place on the planet. In the developed countries like America, UK, All the schools, colleges and universities are practicing this new way of pedagogy teachers and pupils use tablets/smart phones and computers in edification. Further ICT is acts as mechanism in attaining, processing and disseminating abundant knowledge. In fact, it is a yardstick for measuring development of a nation in the 21st century.

## REVIEW OF AVAILABLE RELEVANT RESEARCH WORK

The UNESCO (United Nations Educational, Scientific & Cultural Organization) is a specialized agency of UN (United Nations) having 195 members and 10 associate members. The Education is one of the core programme of UNESCO and is based in Paris.

According to the UNESCO report 2014 In South and West Asia, in Bangladesh and Nepal, ICT plans were published as recently as 2013 (Bangladesh, 2013; Nepal, 2013). In contrast, the Islamic Republic of Iran opted to include ICT in education within its national Master ICT Plan, while Bhutan, with the support of the UNESCO New Delhi office, has recently prepared a draft plan. Maldives does not currently have a plan. Lastly, given its federal nature, India does not have a national plan for ICT in education as it is the responsibility of individual states to develop plans to carry out policy set at the federal level. More specifically, states have the responsibility to define norms, standards, guidelines and frameworks to implement the policy in an effective manner, and to facilitate and monitor policy implementation (India, 2012).

MHRD (Ministry of Human Resource Development) Govt of India prepared a draft on National policy on ICT in school education in 2010, further it is revised on 23rd March 2012.

The concept of ICT in schools was initially introduced in December 2004. The Central Government later revised it in 2010 to ensure opportunities for students enrolled at the secondary level of education.

Presently, the Central Government has subsumed ICT in schools under Rashtriya Madhyamik Shiksha Abhiyan (RMSA), a national drive for secondary education.

Various initiatives have been taken by the Government of India for boosting the use of ICT in Education education sector. All e-resources are made available through e-CBSE. To achieve complete digitisation and smart education, the Ministry of Human Development has initiated several new initiatives.

The Central Government has answered the calls to the changing dynamics of education, especially to the importance of bringing ICT to the schools and colleges and improving the contour of classroom teaching and learning, the recent digital initiative like NAD, NDML, CVL, eCBSE etc. are commendable and the govt has a clear vision & set a road ahead for us. Further Central Government initiatives are good in many ways as it permits online submission of data through web portals.

## Gap Areas: Need of swiftness in implementing technology:

Integrated teaching & learning has made rapid strides in the past couple of decades across the globe. Now



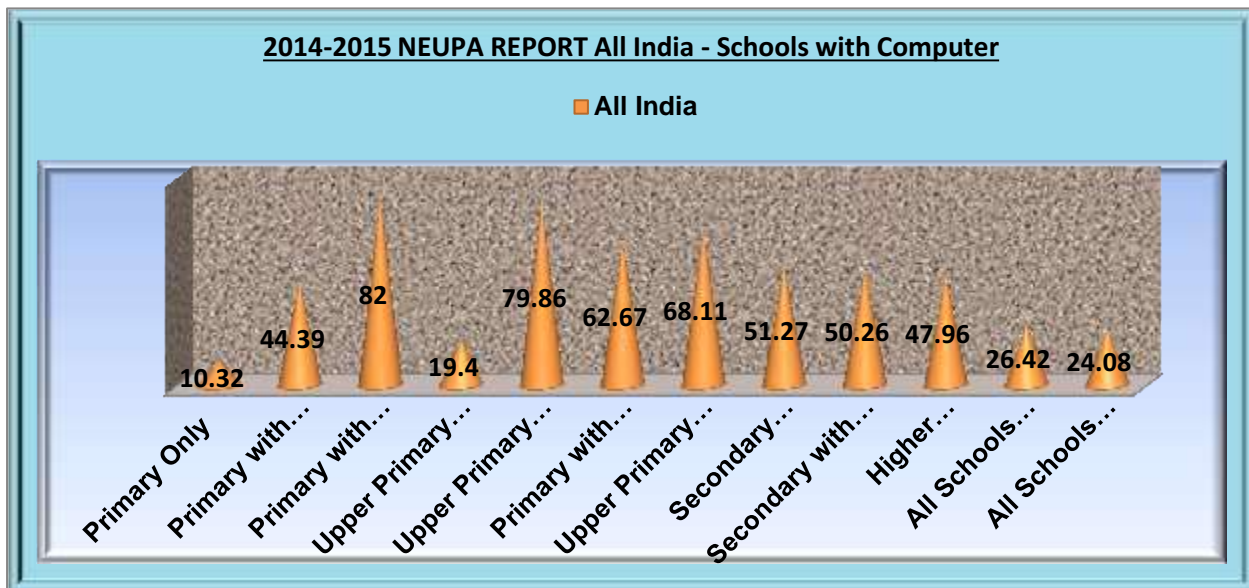


it's our turn to bring a pace in the successful implementation of integrated teaching and learning because according to the 2014-15 Report of NEUPA (National University of Educational Planning and Administration) percentage of all schools equipped with computer in all

over India is 26.42 which is alarming situation. The problem needs to be addressed seriously because in upcoming years the ICT will be the yardstick for measuring the development of the nation.

**Table 1 2015 NEUPA Report All India - Schools with Computer**

State	Primary Only	Primary with Upper Primary	Primary with Upper Primary & Sec & Hr. Sec	Upper Primary Only	Upper Primary with Sec & Hr. Sec	Primary with Upper Primary & Sec	Upper Primary with Sec	Sec Only	Sec with Hr. Sec	Hr Sec Only	All Schools 2014-15	All Schools 2013-14
All India	10.3	44.3	82.0	19.4	79.8	62.6	68.1	51.3	50.2	47.9	26.4	24.0



**Figure 1: Graphical representation of Schools with Computer in All over India**

**METHODOLOGY**

The Sainik School Amaravathinagar is exercising both traditional/conventional approach of teaching and learning and an integrated teaching and learning pedagogy. Students are experiencing both the paradigms. After getting an approval from the Principal Group Capt TN Sridhar Indian Air Force and Vice Principal Lt Cdr N Kattaboomman Indian Navy, 16 Questionnaire response

sheet had been designed and screened among the students and the response had been recorded.

Total 100 cadets (students) of class VIII, IX and X response had been recorded on 26 Mar 2018 and to come to the conclusion, standard method of calculating of mean is implemented to the traditional approach and the integrated teaching and learning attributes.



**Table 2: Traditional Approach questionnaire**

Attributes		Response	
i	Is it student centric?	Y	N
ii	Do you acquire more knowledge by this pedagogy?	Y	N
iii	Is it more effective?	Y	N
iv	Weather it reduces stress of reading/ writing habit?	Y	N
v	Does it help in retaining the concepts and their terms/wordings?	Y	N
vi	Can you relate / apply acquired knowledge using this pedagogy in real life situations?	Y	N
vii	This approach is not more time consuming	Y	N
viii	Looking in to overall impact when comparing with integrated teaching, is traditional approach stands tall?	Y	N

**Table 3: Integrated Teaching and Learning Approach questionnaire**

Attributes		Response	
i	Is it student centric?	Y	N
ii	Do you acquire more knowledge by this pedagogy?	Y	N
iii	Is it more effective?	Y	N
iv	Weather it reduces stress of reading/writing habit?	Y	N
v	Does it help in retaining the concepts and their terms/wordings?	Y	N
vi	Can you relate / apply acquired knowledge using this pedagogy in real life situations?	Y	N
vii	This approach is not more time consuming	Y	N
viii	Looking in to overall impact when comparing with traditional approach, is integrated teaching stands tall?	Y	N

**RESULTS AND DISCUSSION**

Weightage: Weightage for each of the question is 10 marks.  
 Evaluation Method: Using standard mean and deviation method the results were calculated on different set of marks.

Further the same weightage and calculation method is applied for integrated teaching and learning.



**Table 4 Traditional Approach Evaluation Methodology**

Classification Index CI	Number of Students ( <i>f<sub>i</sub></i> )	Mark ( <i>x<sub>i</sub></i> )	<i>d<sub>i</sub></i> = <i>x<sub>i</sub></i> - 45	<i>F<sub>i</sub></i> · <i>d<sub>i</sub></i>
10-20	7	15	-30	-210
20-30	27	25	-20	-540
30-40	25	35	-10	-250
40-50	15	45	0	0
50-60	12	55	10	120
60-70	9	65	20	180
70-80	4	75	30	120
80-90	1	85	40	40
Total	100			-540
Mean	39.6			

Mean  $\bar{x} = a + \frac{\sum f_i d_i}{\sum f_i}$

Substituting the values of *a*,  $\sum f_i d_i$  and  $\sum f_i$  from Table 4

$$\bar{x} = 45 + (-540) / 100 = 39.6$$

Outcome: The mean of Traditional approach obtained by the students is 39.6

**Table 5 Integrated Teaching and Learning Evaluation Methodology**

Classification Index CI	Number of Students ( <i>f<sub>i</sub></i> )	Class Mark ( <i>x<sub>i</sub></i> )	<i>d<sub>i</sub></i> = <i>x<sub>i</sub></i> - 45	<i>F<sub>i</sub></i> · <i>d<sub>i</sub></i>
10-20	0	15	-30	0
20-30	1	25	-20	-20
40-50	7	45	0	0
50-60	12	55	10	120
60-70	34	65	20	680
70-80	31	75	30	930
80-90	14	85	40	560
Total	100			2260
Mean	67.6			

Mean  $\bar{x} = a + \frac{\sum f_i d_i}{\sum f_i}$

Substituting the values of *a*,  $\sum f_i d_i$  and  $\sum f_i$  from Table 5

$$\bar{x} = 45 + 2260 / 100 = 67.6$$

Outcome: The mean of Integrated Teaching and Learning Approach obtained by the students is 67.6



## DISCUSSION

If we examine the outcome of both the pedagogy; it reveals that integrated teaching and learning stands at par and students are magnetized with this new technique of teaching. Schools must realize and practice this new way of edification.

### Hiccups in implementation of Integrated Teaching and Learning Approach

(i) Cost Factor: One of the major hiccups in implementation of integrated teaching is the cost factor. For an educational institution in India implementation of integrated teaching will be the last priority because of other major factors like infrastructure, total number of staff etc are in the streamline of an educational institution and are yardstick to get an affiliation.

(ii) Cutting the edge of technology: With a very rapid changing technology updating of hardware and software components is the main cause for hindrance in the implementation of integrated teaching and learning in the schools further maintenance of systems is an additional burden for the schools in India.

(iii) Mundane among teachers due lack of skills: There is an element of doubt among the teachers to make full use of

technology further most of the teachers afraid of using technology and they don't know how to use due to lack of skills.

(iv) Change of Government Policies & Technology: There is a leak, meaning due to frequent change in the rules and regulation & the technology there will be requirement of an up gradation of software and hardware components. Most of the schools either drop or will not use, and revert back to the old traditional method of teaching.

### Three Tier Model: Staircase for the implementation and making full use of Technology

(i) Tier 1 – Granting more Aid: Government has taken a various steps in integration of ICT in the schools, presently Computers in the school are shared among students and proportion is not maintained. Since the schools are completely dependent on technology system administrator must be appointed in schools to upkeep the systems. Further government has to provide additional grant and continuous support to maintain the infrastructure and students sharing ratio of systems.

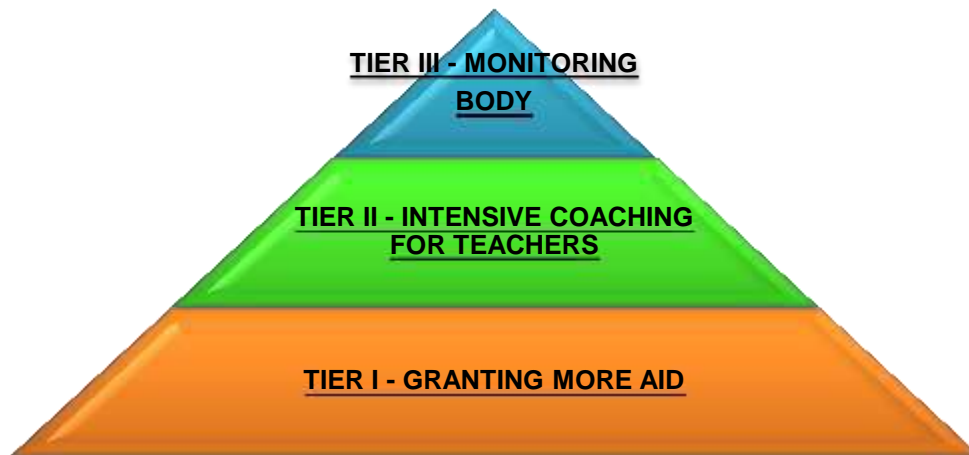


Figure 2: A Three Tier Model

(ii) Tier II - Intensive Coaching for Teachers (Training, Training, Training): With the invent of latest technologies, gradually, these latest inventions are becoming base for teaching learning environment. Hence to keep with the pace of technology it is necessary that teachers must be trained at regular intervals. To allure teacher government has to conduct training, training & training; to make full use of technology. In India any change is to happen in society there is need of mass movement. The policy makers and

stake holders (Schools, staff, teachers & students) must exercise mass movement to bring a change in edification.

(iii) Tier III - Monitoring Body: According to the National policy on ICT in School education 2012 Programme Monitoring and Evaluation Group (PMEG) of the Department of School Education & Literacy, Ministry of HRD, Government of India, will be tasked with the overall



responsibility of guiding the implementation of the ICT programme in schools across the country.

The Govt of India initiative is commendable still needs an active role to look after the plans, policies and the implementation strategies. Further A separate body is to be formed to monitor the usage of integrated technology in classroom environment. In addition the quarterly report needs to be collected by the educational institutions and is to be evaluated by the monitoring body. Further it should be the yardstick for the school to get affiliated to the state/central boards in India.

## CONCLUSION

The Traditional/conventional approach has distasted by the current young generation and the students are showing greater interest in the Integrated Teaching and Learning approach. The effect of the use of technology in the teaching pedagogy is a new ray of education. In 10-15 years down the line conventional method of teaching will be disappeared in the advanced countries. Indian context, according to NEUPA the implementation has tortoise speed and needs acceleration and promotion. Government is making serious efforts; even then the policy makers must realize and make serious efforts to bring acceleration, Further it's up to the schools and teachers to make full use of the cutting edge of technology. At last if an Integrated teaching and learning is implemented in its full length or capacity, the role and the effort of teacher in class room reduces to the greater extent. Like in Cricket by the introduction of technology the role of on field umpire is almost disappeared.

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## WOMEN'S PILGRIMAGE RITES AND RITUALS (AS AN EXAMPLE OF TASHKENT OASIS)

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### ABSTRACT

*The article gave information about pilgrimage places of Tashkent oasis, and paid attention on women's pilgrimage rites. The article was illuminated based on tendencies of the accepted historical methods, comparative and logical analysis, impartiality and succession. As well as, the materials of the field expeditions were used which carried out in the pilgrimage places of (Zangi ota, Machit Ali, Parpi ota) in Tashkent region, during the years of 2017- 2020.*

*By the author, the participation of the women in the pilgrimage places, their pilgrimage rites were analysed and attitudes to pilgrimage places in Soviet period and after Independence were illuminated.*

*The article emphasizes the need for a comprehensive study of the shrines in terms of archeology, ethnology, agiography, linguistics, historical sources, documentation, Islamic studies, archival studies, which are an integral part of the Uzbek mentality in today's globalization process.*

**KEYWORDS:** *pilgrimage places, mentality, national value, Islam, saint cult, Zangi-ota, patriotism, culture, ritual, nature.*

### INTRODUCTION

In Central Asia and Uzbekistan, different religious convictions and outlooks, cults and also religions of Zoroastrianism, Buddhism, Christian, shamanism and monism were wide spread. As a result of coming the Islamic faith, the archaic rites and rituals in the lifestyle of Central Asian people were not lost completely, on the contrary they adjusted to the Islamic traditions and organized the new symbiosis of the rituals and views. The local rites and rituals reflected Islam and religions before Islam are essential to realize the lifestyle and peculiarity of Uzbek nation. One of the ancient ceremonies is pilgrimage. In particular, pilgrimages, pilgrimage rites and traditions were shaped based on religious outlook of the Uzbek nation and became inseparable part of the Uzbek mental thought. Pilgrimage places, mausoleums, and cemeteries are not only the places where expressing the faith, receiving the spiritual nourishment, but also the places of meeting with people coming from different areas and as the center of exchanging with culture play a key role in building up the great feelings in new generations' bringing up. As well as, exploring the pilgrimage places helps to illuminate the historical basis of the Uzbek nations' culture, distinctiveness and distinctive rites.

### LITERATURE REVIEW ON THE TOPIC

The works written by the scientists as O.A.Sukhareva, G.P. Snesarov, V .N Basilov have a great importance in the lifestyle of Central Asian nations and these books give scientific information about saint cult, pilgrimage rites and rituals.

After separating the USSR, the views to the sacred places were altered and researches were carried out with a view to the new spirit and national traditional values. The Islamic ceremonies were learnt by the contemporary scientists such as, S.N. Abashin, V.L. Ogudin and O.V. Gorshunova. But these explorations included mainly certain parts of the Uzbekistan and particular aspects of the saint cult. For instance, the ancientists such as, S.N Abashin and V.L.Ogudin learnt mainly the Ferghana valley, the sacred places of the Karakalpakstan were explored by Yu. V. Knorozov. In her scientific works O.V.Gorshunova illuminated the importance of pilgrimages in the daily lifestyle of the women of the Ferghana valley, with the materials based on field expeditions. By the explorer the rituals connected with worships of Khazrat Ali, Khurkiz, Chakkatomar in Shakhmardan, Khoja Khizr Vali in Ferghana, Kaptarlik mazar in Margilon, « Girls' cemetery» in the village of the Mindan in Ferghana were studied. In the independent countries of Central Asia several explorations and scientific researches which



concerning religious issues are being carried out. In particular, in the article written by the European anthropologist Denis Kandiyot and the Uzbek ethnologist Nodira Azimova the Uzbek women's rituals were analysed and paid attention to the aspects connected with the elegance of pilgrimage places. It should be noted that, there is no exploration on pilgrimage places of the Tashkent oasis and explorations which carried out on women's pilgrimage rites.

## DATA SOURCE AND RESEARCH METHODOLOGY

The article was illuminated based on tendencies of the accepted historical methods, comparative and logical analysis, impartiality and succession. Likewise, the field expedition was used, which carried out in sacred places in Tashkent region (Zangi ota, Zarkent ota, Mechet Ali, Parpi ota) in the meanwhile 2017- 2020.

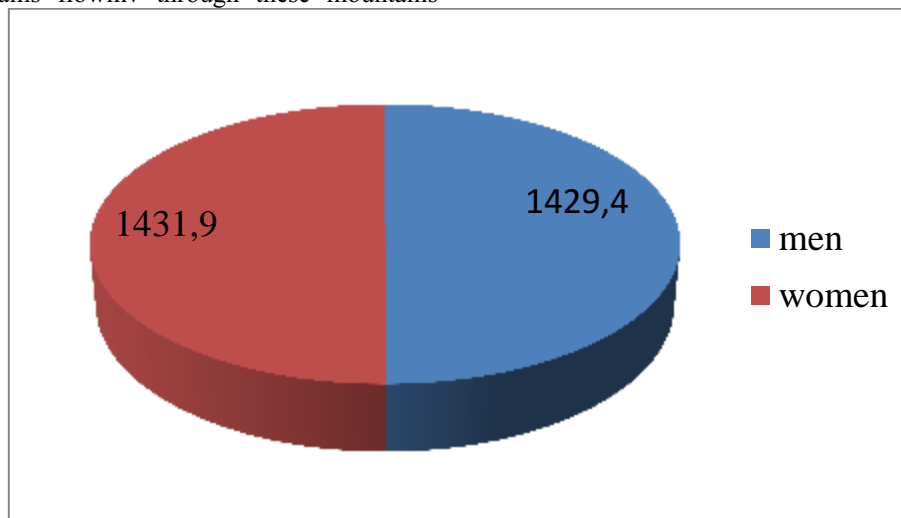
## ANALYSIS AND RESULTS

The Tashkent oasis is covered with the Tyan Shan from the west, with the chain of mountains Ugom, Piskom and Chotkol from the east, the tributary streams flowing through these mountains

make up the Chirchik River. Because of region's landscape and the convenience of the natural, geographical conditions it was opened up from the Stone Age. (Kolbuloq, Khojirahmat, Khojakent).

Tashkent oasis which is famous with the names of Iloq, Binkent, Choch, Shosh was the important trade center at the crossroads between Europe and Asia, and it was named as «Sharq darvozasi» for its services as the Asian Gate, and became famous with its natural, geographical placing, history and rare memorial monuments. The Tashkent region adjacent to the Republic of the Kazakstan from the north, and northern west, to the Republic of the Kyrgyzstan from the northern west, to the Namangan region from the east, to the Republic of the Tadjikistan from the south and to the Syrdarya region from the southern north. Nowadays Tashkent region is considered as developed with its industry, agriculture, social and economical infrastructure culture and art. Particularly, 20% of industrial goods of the republic, 45% of electricity, 98% of coal, 43% of cement, 100% of the renting steel and metal are produced in Tashkent region.

According to the 1 of January, 2018, the population consisted of 2861,3.



**Photo.1 Distribution of the population of the Tashkent region according to their gender.**

Tashkent region owns rich cultural heritage. Therefore, in this oasis the worships and distinctive sacred places of local inhabitants are available, and they are located not only in big cities and in the centre of the region, but also in the countryside and neighborhood. The widespread terms of «Ziyarah» and «Ziyaratgah» (pilgrimage and pilgrimage place) are Arabian words and mean «going to somewhere». Ziyarah – is worship to revered cemeteries and sacred places. Valued pilgrimage places and ceremonies for centuries were interpreted as out of date. In the 30 th of the last century, the activities of the religious organizations (mechet, medrese, sacred places, mausoleum, school) were completely stopped and

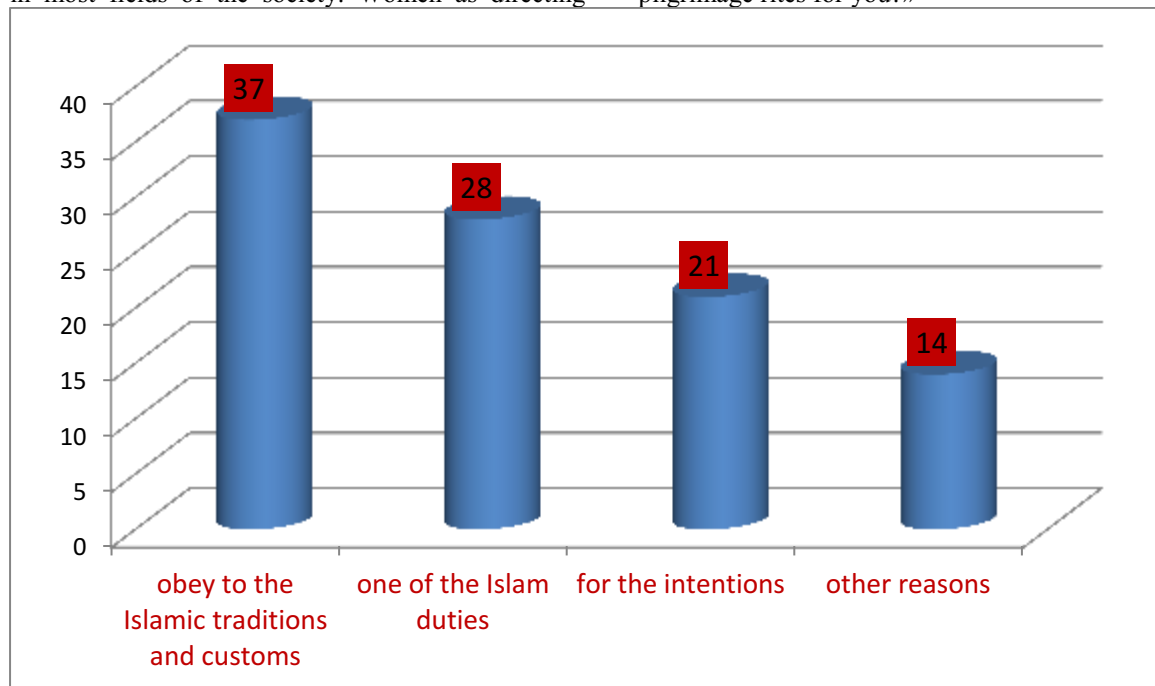
closed. A plenty of muslim scientists were shot down. They were exiled to the Syberia and other parts of the former Union. Buildings were transformed into dwellings, workshops, warehouses and others. Mausoleums and sacred places were considered as the heart of prejudice and the weapon of the religious exploitation, as a result, most of them were neglected, lost its feature and disappeared. The policy violence of the Soviet authority could not conquer the religious spirit of the Uzbek people completely. In traditional families, elderly people tried to bring up their children in accordance with faith, shariat rules and Islamic etiquette. Going to the pilgrimage places and worship rites became family

traditions. After independence attitudes to the pilgrimages were intensified. The pilgrimage places of Zangi ota, Machit Ali, Qirq qiz, Gumbaz bobo, Buzruk buva, Shodmalik ota were reconstructed based on national architecture. Nowadays, in Tashkent region, overall 721 of cultural heritages were registered by the Ministry of Culture of the Republic of Uzbekistan, the main scientific producing management of protecting and using for the objects of the cultural heritage, the regional state inspection concerning region of Tashkent, Syrdarya and the city of Tashkent, 141 of them consist of sacred places and pilgrimage places. Each worship in oasis embodied the ancient legends and myths in it and play a key role in waking up the religious feelings of the pilgrims.

Nowadays it can be seen that, women are active in most fields of the society. Women as directing

force, play key role in ensuring the duration of nation and religious values. Because woman as a person attempts to realize herself and attitudes to others by means of the trust. Woman is elegant naturally, and passionate, attempts to not neglect and to claim each acts. In these cases, majority religious rites are organized and lead by women. In particular, 70% of women and 30% of men's visits to pilgrimage places could confirm our opinion. According to the Islam, women are not allowed to go to the mechets, therefore pilgrimage places are the main worship where women try to satisfy their religious and spiritual requirements.

The diagram below shows the results of the questionnaire which carried out among 100 people in the pilgrimage of Zangi ota in Tashkent region, in the theme of « What are the pilgrimage places and pilgrimage rites for you?»



**Photo2. Results of the questionnaire « What are the pilgrimage places and rites for you? »**

In the pilgrimage places in Tashkent region. The certain rites were done by women mainly: revolving around the cemetery, reading the Koran « especially read by the Shikh of cemetery with the special sound», switching the light on for the saints, binding the materials to the trees with intentions (nowadays it is prohibited), drinking the spring water of the pilgrimage places, sacrificing (especially sheep and cock) cooking and donation. For the pilgrimage places special dishes, such as bogirsok, qatlama, chalpak are prepared and woman go to the worships alone or with group.

To the sacred places, it is visited mainly in the seasons of spring and autumn, on Wednesdays, Thursdays and Sundays. The distinctiveness of the pilgrimage places is very important. For instance, for recovering the children from illnesses go to the « Parpi ota» and childless women go to the «Qirq qiz» («Fourty girls»). The water in the pilgrimage place «Mechet Ali» is considered as a medicinal, therefore most of people come to the water, though the medicine was developed. Nowadays there are all necessary facilities for praying, sacrificing and cooking in pilgrimage places.





**Photo-3. Women are preparing food in the «Parpi ota» in Tashkent oasis.**

According to the reporters, visiting to pilgrimage places became family tradition, pilgrims visit not only for pilgrimaging, but also for meeting with relatives and consulting each other on family issues. Besides that, the certain parts of the products which were bought for the wedding ceremonies, such as rice, oil, flour, sweets, and meat were devoted to pilgrimage places. After the wedding bride and bridegroom, went to the pilgrimage place with relatives and gave the products to the Sheikh. The Sheikh prayed to God for children and fortune for new family.

One of the reasons of women's pilgrimage rites is childlessness and nowadays one of the main problems of Central Asian women. In Uzbekistan childlessness causes for the divorcing in most cases. For saving the family, traditional and medical methods are used widely. According to the opinions of the scientist G.P. Snesarov, several superstitions were done before marriage for avoiding childlessness. Nevertheless, if the baby was not born

in family, first of all people visited to the pilgrimage places and did several ceremonies.

According to the reporters, there are many women who intended in the pilgrimage places with belief and had a baby. Women who gave birth come to the pilgrimage places with family and sacrificed for the God, for the child, they connected giving birth with pilgrimage places and the Sheikh had baby's hair cut for the first time. The Sheikh reads verse of the Koran and cut the baby's hair saying « Bismillahir rohmanir rohiym». This rite is called « Kokil oldi» («Cut plait»).

Pilgrims sacrifice the sheep as possible. Because in the Islamic book « Muhtasar», in the rules of sacrificing, the heep was considered as sacrifice. If it was impossible, except the sheep the hen was killed. Hen killing and squeezing out the blood is the ancient superstition which became apparent based on religions before Islam. According to the historical information in the centuries 7-6, in Central and front Asia, the cock was valued as the poultry saving from « black evil forces».



Photo-4. The ritual of «Kokil oldi»

## CONCLUSION

According to the research's results women do pilgrimage rites in these cases below: for remembering the deceased relatives; dealing with family problems; with the doctors' advices. While observing the women's rituals in pilgrimage places, we convinced that the thoughts before Islam were kept and joined with Islamic rites. We can see them in the rites of switching the light on, sacrificing and binding a piece of materials to the trees. Lately, women's interests to the religious are exceeding. In most cases women participate in ceremonies for the purpose of enriching the religious outlook.

In conclusion, visiting to the pilgrimage places as inseparable part of Uzbek mentality, manifests in it the optimistic virtues, such as making the deceased people's soul glad and hoping the dreams come true. The sacred and pilgrimage places function as reserve for natural ecosystem in these day's ecological problems are increasing and globalization process. It demands the need for a comprehensive study of the shrines in terms of archeology, ethnology, agiography, linguistics, historical sources, documentation, Islamic, and archival studies.

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# ANALYSIS OF THE ROLE OF FINTECH AND FINANCIAL LITERATION ON BUSINESS PLAYERS IN CILEDUG TANGERANG REGION

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## ABSTRACT

*This study aims to analyze the role of fintech and financial literacy in business operators in the Ciledug area of Tangerang. In this study, researchers took a random sample of business people who are in the Ciledug Village, Tangerang. Analysis of the data used in this study is to use data reduction in the presentation of the data and the last is a conclusion. The results of this study are, in general, informants do not understand what is fintech, they only know online payments such as ovo, funds, paypal, etc. They do not know that online payment is included in fintech. Business owners also dislike borrowing money for venture capital from fintech because of its large interest. The owner generally prefers to make a personal loan or through banking.*

*For financial literacy, they have more or less understood that financial management is important. And some owners have prepared their future well. Preparing an education fund for children, having an emergency fund, having self and family health insurance are their capital for the future.*

**KEYWORDS:** *Fintech, Financial Literacy, Business Players*

## BACKGROUND

Technology is developing rapidly, not only in Indonesia but the world is also experiencing technological developments that are changing significantly every time. This can occur because the technology is growing rapidly every day and has entered in various sectors, one of which is the financial sector. An example is fintech (Financial technology) which is a technology to support financial services.

The development of fintech has led to many innovative applications in financial services, such as payment instruments, loan instruments and others that are gaining in popularity in this digital age.

Today many people are turning to fintech because people now want everything to run quickly and easily, without any limitations. OJK functions as a

supervisor of the government to regulate the financial services sector, especially in the development of fintech. OJK supervises p2plending fintech, Crowdfunding, Digital Banking Fintech in the capital market, Insurtech, online financing, data security and consumer protection. Micro, Small and Medium Enterprises The emergence of fintech innovation provides a breath of fresh air for MSME businesses. Fintech helps business people more easily get access to financial products and increase financial literacy.

Business people can use fintech as a way to finance their companies. The role of fintech is not only limited to business capital financing, but there are also those that penetrate into various aspects such as digital payment services and financial regulators. The presence of technology-based financial fintech services



in Indonesia has become a necessity in line with the development of information and communication technology (Wibowo, 2016).

Micro, Small and Medium Enterprises (MSMEs) have a big role to play in increasing economic development in Indonesia, economic growth and opening up new jobs. At present, the number of MSMEs in Indonesia continues to increase and develop in various sectors. With the improvement and development of MSMEs, it is expected to be able to increase Gross Domestic Product (GDP) and absorb more new workers to reduce unemployment and poverty. Because the number of MSMEs that have sprung up makes competition tighter. Especially after the enactment of the ASEAN Economic Community (AEC), which makes the MSMEs must produce new innovations so that they can meet market demands and make Indonesia a market leader in their own countries and in ASEAN.

The emergence of fintech innovation provides a breath of fresh air for MSME businesses. Fintech helps business people more easily get access to financial products and increase financial literacy. Business people can use fintech as a way to finance their companies. Based on research on the role of fintech on MSMEs the results of research from Irma, Inayah, Bella (2018) stated that the presence of a number of fintechs contributed to the development of MSMEs. The role of fintech is not only limited to financing venture capital but there are also those that penetrate into various aspects such as digital payment services and financial regulators.

Micro, Small and Medium Enterprises (MSMEs) in Ciledug, Tangerang, are currently developing, but MSME businesses are still comfortable using cash in their transactions. Funding for the development of MSME is also a problem that is often faced by SMEs. Customers of MSME products also want to make transactions easier.

## LITERATURE REVIEW

### Financial Technology (Fintech)

Financial technology or financial technology or what is commonly referred to as fintech, is defined as technological innovation in financial services that can produce business models, applications, processes or products with material effects related to the provision of financial services (Financial Stability Board, 2017). Fintech also helps people to more easily get access to financial products and financial literacy (Finansialku.com, 2018). The financial technology industry (fintech) is one of the methods of financial

services that is starting to rise in the digital era like today.

Digital payments are one of the sectors in the most fintech industry in Indonesia. So that the government and the public hope that digital payments can encourage the number of people who have access to financial services. The Financial Services Authority (OJK) notes there are around 63 financial technology companies that have been registered until June 2018 and in August there were about 64 companies registered with 6 listed companies and 5 there were cancellations of registration (OJK, 2018).

There are several types of fintech classifications, namely:

#### 1. Crowdfunding and peer to peer lending

Crowdfunding is a business unit funding technique or business project that involves humans extensively (kemenkeu.go.id, 2017). Peer to peer lending (p2plending) is a practice or method of giving money to individuals or businesses and vice versa, applying for loans to lenders that connect lenders with borrowers or investors online (Koinwork.com, 2018).

#### 2. Market Aggregator

Market aggregator is collecting and managing data that can be used by consumers to help decision making (CNB Indonesia, 2018).

#### 3. Risk and Investment Management

Risk and investment management or commonly referred to as risk and investment management in financial technology is used as planning in digital form.

#### 4. Payment, Settlement and Clearing

Payment, settlement and clearing are the fintech sectors with payment system services both organized by the banking industry or Bank Indonesia institutions (CNBC Indonesia, 2018).

## Financial Literacy

According to Manurung (2009: 24) financial literacy is a set of knowledge and skills that enable a person to make effective decisions with all their financial resources.

According to the Financial Services Authority (OJK), Financial Literacy is knowledge, skills and beliefs, which influence attitudes and behaviors to improve the quality of decision making and financial management in order to prosper OJK states that the important mission of the financial literacy program is to do so that the Indonesian people can manage finances smartly so that education is needed in the field of finance, so that low knowledge about the financial industry can be overcome and the public is not easily



fooled into investment products that offer high returns in the short term without considering the risks. In supporting economic functions, financial literacy is needed because with the large transactions that can be created it will make the wheels of the economy perfect.

Financial literacy has a long-term goal for all classes of society, namely increasing the literacy of a person who was previously less literate or not literate to be well literate and increasing the number of users of financial products and services. In supporting economic functions, financial literacy is needed because with the large transactions that can be created it will make the wheels of the economy perfect.

### Micro, Small and Medium Enterprises (MSMEs)

Based on Law No. 20/2008, the meaning of Micro, Small and Medium Enterprises (MSMEs) is

1. Micro business is productive business owned by individuals and / or individual business entities that meet the criteria for micro business as regulated in this law.
2. Small business is a productive economic business that stands alone, which is carried out by individuals or business entities that are not subsidiaries or non-branch companies that are owned, controlled, or become either directly or indirectly part of medium-sized businesses or large businesses that fulfill small business criteria as referred to in this law.
3. Medium-scale business is a productive economic business that stands alone, which is carried out by an individual or business entity that is not a subsidiary or branch of a company that is owned, controlled, or becomes a part either directly or indirectly with a small business or large business with an amount of wealth net or annual sales results as provided for in this law.

According to Abduh, Thamrin (2018: 12) small and medium enterprises have a strategic role in the development of the national economy, and the absorption of labor also acts as a distribution of business results. MSME is a sector that can reduce the level of economic and social inequality, foster a family system and cooperation and in the economic field can increase purchasing power of consumers in the country (Wulansari et al, 2017).

**Table 2.1 MSME Criteria**

No.	Business Criteria	Asset	Criteria Turnover
1	Micro business	maximum 50 million	maximum 300 million
2	Small Business	> 50 million - 500 million	> 300 million - 2.5 billion
3	Medium Enterprises	> 500 million - 10 billion	> 2.5 billion - 50 billion

Source: OJK

## RESEARCH METHOD

### Research Methods

The type of research used is qualitative research with descriptive content analysis. Qualitative research (qualitative research) includes the interpretation of interpretative techniques with understanding, not the frequency of phenomena that often or rarely occur naturally in the social world (Cooper and Schindler, 2017: 170). Descriptive content analysis or descriptive content analysis is content analysis that is intended to describe in detail a message or a particular text. Content analysis is only for description, describing the characteristic aspects of a message (Eriyanto, 2017: 47).

### Data Collection Methods

The method used by researchers is:

#### Interview

According to Sugiyono (2015, p. 231) Interviews are data collection techniques if the researcher wants to conduct a preliminary study to find problems that need to be investigated, but also if the researcher wants to know things from the respondents in more depth.

Interview is a process of communication or interaction to collect information by question and answer between researchers and informants or research subjects. With the progress of information technology as it is today, interviews can be done without face to face, namely through telecommunications media. In essence the interview is an activity to obtain in-depth information about an issue or theme raised in research. Or, it is a process of proving the information or information that has been obtained through other techniques before.

Because it is a verification process, interview results may be appropriate or different from information that has been obtained previously.



In order for an interview to be effective, there are several stages that must be passed, namely; 1). Introduce yourself, 2). Explain the purpose of arrival, 3). Explain the interview material, and 4). Asking questions (Jonah, 2010: 358).

### Data analysis method

In qualitative research, data is obtained from a variety of sources, using a variety of data collection techniques (triangulation), and carried out continuously until the data is saturated. Qualitative data analysis is inductive in nature, which is an analysis based on the data obtained, then developed certain patterns of relationships or become hypotheses.

Data analysis in qualitative research carried out since before entering the field, while in the field and after completion in the field.

In this case Nasution (1988) in (Sugiyono, 2015, p. 245) states "The analysis has begun since formulating and explaining the problem, before plunging into the field and continuing until writing research results. But in qualitative research, data analysis is more focused during the field process together with data collection. "

Analysis of data data is an important step in research, because it can give meaning to the data collected by researchers. Data obtained and collected from respondents through the results of observations, interviews, literature studies and documentation in the field to be further described in the form of reports.

Data analysis in this research was carried out through three activities occur simultaneously namely data reduction, data presentation, and withdrawal the conclusion or verification of Miles and Huberman (1992) in Sugiyono (2015, p. 246). Qualitative data analysis is an ongoing effort, repeatedly and continuously. Problems with data reduction, data presentation, and withdrawal the conclusion is a series of interrelated analysis of activities follow up.

## RESULTS AND DISCUSSION

The role of fintech in business actors In this study, researchers took random speakers who were in Ciledug Tangerang.

- a. PO. Sumber Alam is a transportation business that has been running for approximately 20 (twenty) years. The owner does not understand the types of fintech available, the owner only knows fintech as a means of payment. Sumber Alam has been reducing its use of paper in a number of years. The transaction that was originally started with a booking will then be replaced with a ticket when

the current departure no longer exists. Current transactions of natural resources are already using the application, so potential passengers can buy online. This is in line with research conducted by EN Sugiarti (2019) which states that transactions using applications can minimize errors in transactions, environmentally friendly because it can reduce the amount of paper. In PO. Sumber Alam payment transactions still use cash or transfer. The use of digital payment is still in the owner's plan.

- b. The second guest speaker was Khanza Mandiri. Khanza Mandiri started its business about 10 years ago. Khanza Mandiri is engaged in the Payment and grocery business. The owner gives an explanation of understanding of fintech, the owner in general only knows that fintech is a means of payment such as OVO, funds, etc. Using their own capital and for financial arrangements Khanza Mandiri still uses manual bookkeeping. The owner is interested in using fintech in his payment.
- c. The third speaker was Mrs. Puji who traded hodgepodge on Ciledug Raya street for about 4 years ago. Ms. Puji acknowledged that of the several types of fintech available, Ms. Puji only knew about payment fintech where she was familiar with payment instruments such as OVO, Gopay, etc. When researchers provide understanding that fintech is not only a means of payment, including online loans, he is reluctant to do so because of the large interest. He is interested in making non-cash payments but is constrained by the submission process.
- d. The next guest speaker was Tantowi Chicken Noodle. The owner started his business 8 years ago. Starting from the roadside hangout, now the owner is able to rent a place that is quite permanent. The owner is aware of the rapid technological owner must participate to compensate. At present the owner has proposed to the provider to be able to receive non-cash payments such as OVO, but has not yet received approval from Fintech's Patah.

### The Role of Financial Literacy in Business Actors

- a. PO owner. Sumber Ciledug does not have detailed financial records. However, the owner always prepares good funds to prepare for the future, children's education to university level, has insurance for themselves and their families. The owner also realizes the importance of financial



management, because according to him if the financial is not managed it will disrupt cash flow. In addition the owner also knows the services that exist in the bank. The owner will trust banking services in managing his finances.

- b. The owner of Khanza Mandiri has a financial log for his business. The owner has plans to enlarge his business in the future. The owner also has an emergency fund as well as savings for the future. In addition, the owner has also prepared health insurance for himself and his family, as well as education funds for children to college. The owner understands that finance needs to be managed so that the peg is not bigger than the pole. Most owners know the types of services that are available at the bank. The owner chooses savings as savings and believes in banking services. The owner has so far not been familiar with mutual funds to invest.
- c. Mrs. Puji does not have a financial record for her business. The owner has plans to enlarge his business in the future. The owner does not have an emergency fund and has not planned an education fund for children to college. However, the owner has health insurance for himself and his family. The owner realizes that finance needs to be managed to find out the entry and exit of money and also to know the profit or loss. The owner also knows the types of banking services available. The owner chooses savings at the bank and believes in charging services. The owner does not know the types of investments and is not familiar with investments such as mutual funds.
- d. The owner of Mie tantowi chicken has a business financial record book. Similar to other business owners, Mia Tantowi also intends to enlarge her business in the future. The owner has also prepared and educated his children. However, the owner does not yet have health insurance for himself and his family. The owner prefers savings as savings in the bank, because the owner believes in his security. The owner does not know the types of investments available, the owner knows investment is only limited to gold.

## DISCUSSION

### a. Financial Technology

#### 1. Length of Effort

There are business people in this research who have been doing it for decades. Business back and forth will always happen, and therefore innovation and expansion of business actors is

needed to stay afloat in the business world, given the rapid development of technology today, so that businesses are expected to be able to take part in utilizing current technology which is completely online.

2. Business actors' knowledge of fintech  
Fintech is increasingly growing to make business people must be able to follow its development. Business people don't just have to follow but business players are expected to be more selective in choosing fintech because many finteches have not been registered with OJK. Knowledge business people about fintech are still limited, they don't know much about their roles from fintech, many business operators know the role of fintech only as payment.
3. The application of fintech to business actors  
Actors have actually realized the benefits of using fintech, but the owner also considers consumer interests. Like Sumber Alam, where the majority of consumers are more interested in using cash because of the age factor, where there are still many consumers who do not like non-cash payments. This is in line with research conducted by F Mahliza (2019) which states that the owner's characteristics do not affect the implementation of e-commerce.

From the four sources the overall reception received well with the existence of fintech because fintech can simplify transactions. Fintech too provide a lot of benefits for business people as well as more profits obtained from business actors. But of all the roles of fintech, the guest speaker is in this research does not yet fully know what the role of fintech is because lack of socialization about fintech to business actors. The guest speaker said in venture capital financing still chooses banking because banks already trusted and there are legal institutions that govern. The four speakers from this study said that in financing many businesses use their own capital and when in business need capital, businesses still choose banking over fintech. The speakers said that with their own capital you should be able to expand their business. The emergence of fintech provides opportunities for para business actors are creative in using financial technology services with various roles from fintech ranging from payments, financing, investment, to planning finance. The speakers in this study use the role of fintech as payment (e-payment) and financial managers because of little interest from customers little by little using financial technology because it gives the impression which is easy to use. This makes para profit



business actors have increased so that the financial literacy of business actors has also increased.

### Financial Literacy

Basically, the four informants understood and understood that business finance needs to be managed well, but some of the speakers had not done financial records properly. This is in line with research conducted by Juma Buhimila Mabula (2018) suggested that there is positive relationship between financial literacy and firm practice of record keeping. The PLS structural path coefficient in this it is not significant. Suggesting that there is no direct relationship between financial literacy and the practice of book keeping. Though it is hard to draw a conclusion on insignificant results speculation can be on factors like the managers' level of education and factors for financial information flow constructs may mediate or moderate the relationship between financial literacy and firm book keeping practice. However, overall business owners have the same plan for their business, which is to enlarge their business. Some owners already have education funds for children to college as stated by the owner of Sumber Alam and Khanza Mandiri. For types of deposits, the owner generally knows about banking services and prefers savings. Owners believe their money is safe if it is deposited in a bank. Some owners have also prepared an emergency fund. Some owners also have health insurance for themselves and their families, because they realize the importance of health.

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## CONCLUSIONS AND SUGGESTIONS

### 1. Conclusions

From the above discussion conclusions can be drawn:

- a. In general, informants did not understand what fintech was, they knew only online payments such as ovo, funds, paypal, etc. They do not know that online payment is included in fintech. Business owners also dislike borrowing money for venture capital from fintech because of its large interest. The owner generally prefers to make a personal loan or through banking.
- b. For financial literacy, they have more or less understood that financial management is important. And some owners have prepared their future well. Preparing an education fund for children, having an emergency fund, having self and family health insurance are their capital for the future.

### 2. Suggestions

Suggestions given by researchers based on the results of research that has been done is as follows:

- a. It is hoped that fintech parties can provide socialization and education for business actors, so that business actors can utilize fintech for business progress.
- b. Increase the number of sources so that interview results can be more accurate.





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# ANALYSIS OF THE ROLE OF FINTECH AND FINANCIAL LITERATION ON BUSINESS PLAYERS IN CILEDUG TANGERANG REGION

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## ABSTRACT

*This study aims to analyze the role of fintech and financial literacy in business operators in the Ciledug area of Tangerang. In this study, researchers took a random sample of business people who are in the Ciledug Village, Tangerang. Analysis of the data used in this study is to use data reduction in the presentation of the data and the last is a conclusion. The results of this study are, in general, informants do not understand what is fintech, they only know online payments such as ovo, funds, paypal, etc. They do not know that online payment is included in fintech. Business owners also dislike borrowing money for venture capital from fintech because of its large interest. The owner generally prefers to make a personal loan or through banking.*

*For financial literacy, they have more or less understood that financial management is important. And some owners have prepared their future well. Preparing an education fund for children, having an emergency fund, having self and family health insurance are their capital for the future.*

**KEYWORDS:** *Fintech, Financial Literacy, Business Players*

## BACKGROUND

Technology is developing rapidly, not only in Indonesia but the world is also experiencing technological developments that are changing significantly every time. This can occur because the technology is growing rapidly every day and has entered in various sectors, one of which is the financial sector. An example is fintech (Financial technology) which is a technology to support financial services.

The development of fintech has led to many innovative applications in financial services, such as payment instruments, loan instruments and others that are gaining in popularity in this digital age.

Today many people are turning to fintech because people now want everything to run quickly and easily, without any limitations. OJK functions as a

supervisor of the government to regulate the financial services sector, especially in the development of fintech. OJK supervises p2plending fintech, Crowdfunding, Digital Banking Fintech in the capital market, Insurtech, online financing, data security and consumer protection. Micro, Small and Medium Enterprises The emergence of fintech innovation provides a breath of fresh air for MSME businesses. Fintech helps business people more easily get access to financial products and increase financial literacy.

Business people can use fintech as a way to finance their companies. The role of fintech is not only limited to business capital financing, but there are also those that penetrate into various aspects such as digital payment services and financial regulators. The presence of technology-based financial fintech services



in Indonesia has become a necessity in line with the development of information and communication technology (Wibowo, 2016).

Micro, Small and Medium Enterprises (MSMEs) have a big role to play in increasing economic development in Indonesia, economic growth and opening up new jobs. At present, the number of MSMEs in Indonesia continues to increase and develop in various sectors. With the improvement and development of MSMEs, it is expected to be able to increase Gross Domestic Product (GDP) and absorb more new workers to reduce unemployment and poverty. Because the number of MSMEs that have sprung up makes competition tighter. Especially after the enactment of the ASEAN Economic Community (AEC), which makes the MSMEs must produce new innovations so that they can meet market demands and make Indonesia a market leader in their own countries and in ASEAN.

The emergence of fintech innovation provides a breath of fresh air for MSME businesses. Fintech helps business people more easily get access to financial products and increase financial literacy. Business people can use fintech as a way to finance their companies. Based on research on the role of fintech on MSMEs the results of research from Irma, Inayah, Bella (2018) stated that the presence of a number of fintechs contributed to the development of MSMEs. The role of fintech is not only limited to financing venture capital but there are also those that penetrate into various aspects such as digital payment services and financial regulators.

Micro, Small and Medium Enterprises (MSMEs) in Ciledug, Tangerang, are currently developing, but MSME businesses are still comfortable using cash in their transactions. Funding for the development of MSME is also a problem that is often faced by SMEs. Customers of MSME products also want to make transactions easier.

## LITERATURE REVIEW

### Financial Technology (Fintech)

Financial technology or financial technology or what is commonly referred to as fintech, is defined as technological innovation in financial services that can produce business models, applications, processes or products with material effects related to the provision of financial services (Financial Stability Board, 2017). Fintech also helps people to more easily get access to financial products and financial literacy (Finansialku.com, 2018). The financial technology industry (fintech) is one of the methods of financial

services that is starting to rise in the digital era like today.

Digital payments are one of the sectors in the most fintech industry in Indonesia. So that the government and the public hope that digital payments can encourage the number of people who have access to financial services. The Financial Services Authority (OJK) notes there are around 63 financial technology companies that have been registered until June 2018 and in August there were about 64 companies registered with 6 listed companies and 5 there were cancellations of registration (OJK, 2018).

There are several types of fintech classifications, namely:

#### 1. Crowdfunding and peer to peer lending

Crowdfunding is a business unit funding technique or business project that involves humans extensively (kemenkeu.go.id, 2017). Peer to peer lending (p2plending) is a practice or method of giving money to individuals or businesses and vice versa, applying for loans to lenders that connect lenders with borrowers or investors online (Koinwork.com, 2018).

#### 2. Market Aggregator

Market aggregator is collecting and managing data that can be used by consumers to help decision making (CNB Indonesia, 2018).

#### 3. Risk and Investment Management

Risk and investment management or commonly referred to as risk and investment management in financial technology is used as planning in digital form.

#### 4. Payment, Settlement and Clearing

Payment, settlement and clearing are the fintech sectors with payment system services both organized by the banking industry or Bank Indonesia institutions (CNBC Indonesia, 2018).

## Financial Literacy

According to Manurung (2009: 24) financial literacy is a set of knowledge and skills that enable a person to make effective decisions with all their financial resources.

According to the Financial Services Authority (OJK), Financial Literacy is knowledge, skills and beliefs, which influence attitudes and behaviors to improve the quality of decision making and financial management in order to prosper OJK states that the important mission of the financial literacy program is to do so that the Indonesian people can manage finances smartly so that education is needed in the field of finance, so that low knowledge about the financial industry can be overcome and the public is not easily



fooled into investment products that offer high returns in the short term without considering the risks. In supporting economic functions, financial literacy is needed because with the large transactions that can be created it will make the wheels of the economy perfect.

Financial literacy has a long-term goal for all classes of society, namely increasing the literacy of a person who was previously less literate or not literate to be well literate and increasing the number of users of financial products and services. In supporting economic functions, financial literacy is needed because with the large transactions that can be created it will make the wheels of the economy perfect.

### Micro, Small and Medium Enterprises (MSMEs)

Based on Law No. 20/2008, the meaning of Micro, Small and Medium Enterprises (MSMEs) is

1. Micro business is productive business owned by individuals and / or individual business entities that meet the criteria for micro business as regulated in this law.
2. Small business is a productive economic business that stands alone, which is carried out by individuals or business entities that are not subsidiaries or non-branch companies that are owned, controlled, or become either directly or indirectly part of medium-sized businesses or large businesses that fulfill small business criteria as referred to in this law.
3. Medium-scale business is a productive economic business that stands alone, which is carried out by an individual or business entity that is not a subsidiary or branch of a company that is owned, controlled, or becomes a part either directly or indirectly with a small business or large business with an amount of wealth net or annual sales results as provided for in this law.

According to Abduh, Thamrin (2018: 12) small and medium enterprises have a strategic role in the development of the national economy, and the absorption of labor also acts as a distribution of business results. MSME is a sector that can reduce the level of economic and social inequality, foster a family system and cooperation and in the economic field can increase purchasing power of consumers in the country (Wulansari et al, 2017).

**Table 2.1 MSME Criteria**

No.	Business Criteria	Asset	Criteria Turnover
1	Micro business	maximum 50 million	maximum 300 million
2	Small Business	> 50 million - 500 million	> 300 million - 2.5 billion
3	Medium Enterprises	> 500 million - 10 billion	> 2.5 billion - 50 billion

Source: OJK

## RESEARCH METHOD

### Research Methods

The type of research used is qualitative research with descriptive content analysis. Qualitative research (qualitative research) includes the interpretation of interpretative techniques with understanding, not the frequency of phenomena that often or rarely occur naturally in the social world (Cooper and Schindler, 2017: 170). Descriptive content analysis or descriptive content analysis is content analysis that is intended to describe in detail a message or a particular text. Content analysis is only for description, describing the characteristic aspects of a message (Eriyanto, 2017: 47).

### Data Collection Methods

The method used by researchers is:

#### Interview

According to Sugiyono (2015, p. 231) Interviews are data collection techniques if the researcher wants to conduct a preliminary study to find problems that need to be investigated, but also if the researcher wants to know things from the respondents in more depth.

Interview is a process of communication or interaction to collect information by question and answer between researchers and informants or research subjects. With the progress of information technology as it is today, interviews can be done without face to face, namely through telecommunications media. In essence the interview is an activity to obtain in-depth information about an issue or theme raised in research. Or, it is a process of proving the information or information that has been obtained through other techniques before.

Because it is a verification process, interview results may be appropriate or different from information that has been obtained previously.



In order for an interview to be effective, there are several stages that must be passed, namely; 1). Introduce yourself, 2). Explain the purpose of arrival, 3). Explain the interview material, and 4). Asking questions (Jonah, 2010: 358).

### Data analysis method

In qualitative research, data is obtained from a variety of sources, using a variety of data collection techniques (triangulation), and carried out continuously until the data is saturated. Qualitative data analysis is inductive in nature, which is an analysis based on the data obtained, then developed certain patterns of relationships or become hypotheses.

Data analysis in qualitative research carried out since before entering the field, while in the field and after completion in the field.

In this case Nasution (1988) in (Sugiyono, 2015, p. 245) states "The analysis has begun since formulating and explaining the problem, before plunging into the field and continuing until writing research results. But in qualitative research, data analysis is more focused during the field process together with data collection. "

Analysis of data data is an important step in research, because it can give meaning to the data collected by researchers. Data obtained and collected from respondents through the results of observations, interviews, literature studies and documentation in the field to be further described in the form of reports.

Data analysis in this research was carried out through three activities occur simultaneously namely data reduction, data presentation, and withdrawal the conclusion or verification of Miles and Huberman (1992) in Sugiyono (2015, p. 246). Qualitative data analysis is an ongoing effort, repeatedly and continuously. Problems with data reduction, data presentation, and withdrawal the conclusion is a series of interrelated analysis of activities follow up.

## RESULTS AND DISCUSSION

The role of fintech in business actors In this study, researchers took random speakers who were in Ciledug Tangerang.

- a. PO. Sumber Alam is a transportation business that has been running for approximately 20 (twenty) years. The owner does not understand the types of fintech available, the owner only knows fintech as a means of payment. Sumber Alam has been reducing its use of paper in a number of years. The transaction that was originally started with a booking will then be replaced with a ticket when

the current departure no longer exists. Current transactions of natural resources are already using the application, so potential passengers can buy online. This is in line with research conducted by EN Sugiarti (2019) which states that transactions using applications can minimize errors in transactions, environmentally friendly because it can reduce the amount of paper. In PO. Sumber Alam payment transactions still use cash or transfer. The use of digital payment is still in the owner's plan.

- b. The second guest speaker was Khanza Mandiri. Khanza Mandiri started its business about 10 years ago. Khanza Mandiri is engaged in the Payment and grocery business. The owner gives an explanation of understanding of fintech, the owner in general only knows that fintech is a means of payment such as OVO, funds, etc. Using their own capital and for financial arrangements Khanza Mandiri still uses manual bookkeeping. The owner is interested in using fintech in his payment.
- c. The third speaker was Mrs. Puji who traded hodgepodge on Ciledug Raya street for about 4 years ago. Ms. Puji acknowledged that of the several types of fintech available, Ms. Puji only knew about payment fintech where she was familiar with payment instruments such as OVO, Gopay, etc. When researchers provide understanding that fintech is not only a means of payment, including online loans, he is reluctant to do so because of the large interest. He is interested in making non-cash payments but is constrained by the submission process.
- d. The next guest speaker was Tantowi Chicken Noodle. The owner started his business 8 years ago. Starting from the roadside hangout, now the owner is able to rent a place that is quite permanent. The owner is aware of the rapid technological owner must participate to compensate. At present the owner has proposed to the provider to be able to receive non-cash payments such as OVO, but has not yet received approval from Fintech's Patah.

### The Role of Financial Literacy in Business Actors

- a. PO owner. Sumber Ciledug does not have detailed financial records. However, the owner always prepares good funds to prepare for the future, children's education to university level, has insurance for themselves and their families. The owner also realizes the importance of financial



management, because according to him if the financial is not managed it will disrupt cash flow. In addition the owner also knows the services that exist in the bank. The owner will trust banking services in managing his finances.

- b. The owner of Khanza Mandiri has a financial log for his business. The owner has plans to enlarge his business in the future. The owner also has an emergency fund as well as savings for the future. In addition, the owner has also prepared health insurance for himself and his family, as well as education funds for children to college. The owner understands that finance needs to be managed so that the peg is not bigger than the pole. Most owners know the types of services that are available at the bank. The owner chooses savings as savings and believes in banking services. The owner has so far not been familiar with mutual funds to invest.
- c. Mrs. Puji does not have a financial record for her business. The owner has plans to enlarge his business in the future. The owner does not have an emergency fund and has not planned an education fund for children to college. However, the owner has health insurance for himself and his family. The owner realizes that finance needs to be managed to find out the entry and exit of money and also to know the profit or loss. The owner also knows the types of banking services available. The owner chooses savings at the bank and believes in charging services. The owner does not know the types of investments and is not familiar with investments such as mutual funds.
- d. The owner of Mie tantowi chicken has a business financial record book. Similar to other business owners, Mia Tantowi also intends to enlarge her business in the future. The owner has also prepared and educated his children. However, the owner does not yet have health insurance for himself and his family. The owner prefers savings as savings in the bank, because the owner believes in his security. The owner does not know the types of investments available, the owner knows investment is only limited to gold.

## DISCUSSION

### a. Financial Technology

#### 1. Length of Effort

There are business people in this research who have been doing it for decades. Business back and forth will always happen, and therefore innovation and expansion of business actors is

needed to stay afloat in the business world, given the rapid development of technology today, so that businesses are expected to be able to take part in utilizing current technology which is completely online.

2. Business actors' knowledge of fintech  
Fintech is increasingly growing to make business people must be able to follow its development. Business people don't just have to follow but business players are expected to be more selective in choosing fintech because many finteches have not been registered with OJK. Knowledge business people about fintech are still limited, they don't know much about their roles from fintech, many business operators know the role of fintech only as payment.
3. The application of fintech to business actors  
Actors have actually realized the benefits of using fintech, but the owner also considers consumer interests. Like Sumber Alam, where the majority of consumers are more interested in using cash because of the age factor, where there are still many consumers who do not like non-cash payments. This is in line with research conducted by F Mahliza (2019) which states that the owner's characteristics do not affect the implementation of e-commerce.

From the four sources the overall reception received well with the existence of fintech because fintech can simplify transactions. Fintech too provide a lot of benefits for business people as well as more profits obtained from business actors. But of all the roles of fintech, the guest speaker is in this research does not yet fully know what the role of fintech is because lack of socialization about fintech to business actors. The guest speaker said in venture capital financing still chooses banking because banks already trusted and there are legal institutions that govern. The four speakers from this study said that in financing many businesses use their own capital and when in business need capital, businesses still choose banking over fintech. The speakers said that with their own capital you should be able to expand their business. The emergence of fintech provides opportunities for para business actors are creative in using financial technology services with various roles from fintech ranging from payments, financing, investment, to planning finance. The speakers in this study use the role of fintech as payment (e-payment) and financial managers because of little interest from customers little by little using financial technology because it gives the impression which is easy to use. This makes para profit



business actors have increased so that the financial literacy of business actors has also increased.

### Financial Literacy

Basically, the four informants understood and understood that business finance needs to be managed well, but some of the speakers had not done financial records properly. This is in line with research conducted by Juma Buhimila Mabula (2018) suggested that there is positive relationship between financial literacy and firm practice of record keeping. The PLS structural path coefficient in this it is not significant. Suggesting that there is no direct relationship between financial literacy and the practice of book keeping. Though it is hard to draw a conclusion on insignificant results speculation can be on factors like the managers' level of education and factors for financial information flow constructs may mediate or moderate the relationship between financial literacy and firm book keeping practice. However, overall business owners have the same plan for their business, which is to enlarge their business. Some owners already have education funds for children to college as stated by the owner of Sumber Alam and Khanza Mandiri. For types of deposits, the owner generally knows about banking services and prefers savings. Owners believe their money is safe if it is deposited in a bank. Some owners have also prepared an emergency fund. Some owners also have health insurance for themselves and their families, because they realize the importance of health.

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## CONCLUSIONS AND SUGGESTIONS

### 1. Conclusions

From the above discussion conclusions can be drawn:

- a. In general, informants did not understand what fintech was, they knew only online payments such as ovo, funds, paypal, etc. They do not know that online payment is included in fintech. Business owners also dislike borrowing money for venture capital from fintech because of its large interest. The owner generally prefers to make a personal loan or through banking.
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### 2. Suggestions

Suggestions given by researchers based on the results of research that has been done is as follows:

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# IT-BASED SOLUTION FOR THE FAST-MOVING CONSUMER GOODS (FMCG) COMPANIES DURING QUARANTINE DUE TO COVID-19

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## ABSTRACT

*The COVID-19 affect for human civilization and global financial breakdowns in all over the world. Travel, Transportation, human movements, social gatherings, are literally prohibited to minimize the disease distribution. The companies facing practical struggles to maintain their process and operate business transactions due to the nature of the businesses. Entrepreneurs and businessmen require a modified and appropriate process to continue the businesses transactions during the quarantine due to crucial consumption never ends with any situation while building customer confidence and trust. This paper discusses the way of Fast-Moving Consumer Goods(FMCG) companies use the Information technological and business strategies to overcome the issue with situational analysis, benefits and limitations of proposed strategies.*

**KEYWORDS:** *IT and Business strategy, analysis, covid -19, economy*

## 1. INTRODUCTION

Covid-19 is an infection that effected for almost the world with growing deaths and growing symptoms. Curfew, lockdowns, limitation to associate with people, prohibitions are some crucial methods that the governments of all countries taken to reduce distribution of the disease. Even though most of the business owners provided leaves to their employees some companies are attempting to gain continues business income as usually. Providing the safety and health care, the employees are assigned to work while maintaining their regular duties. Business and Informational Technological based solutions are some important aspects for these continuous business process which highly effects to win the customers by providing continuous service. Use of these strategies is not a backward due to life threatening Covid-19 and it could use as an opportunity to the business. The main needs of human life, are providing by FMCG and a proper method to maintain the business process is crucial under any situation. Even though most of the business owners provided leaves to their employees some companies are attempting to gain continues business income as usually. Business and Informational Technological based solutions are some important aspects for these continuous business process which highly effects to win the customers by providing continuous service. Use of these strategies is not backward due to life-threatening Covid-19 and it could

use as an opportunity to the business. The main needs of human life, are providing by FMCG and a proper method to maintain the business process is crucial under any situation. IT strategies depict the pro-active function of an evolving and everlasting business strategy (1). IT and business strategies are more associated with modern technology.

## 2. SITUATIONAL ANALYSIS (CURRENT SITUATION IN THE INDUSTRY)

As the current situation in the world, lack of FMCG delivery is one major issue. Lack of FMCG, effects for both human life and economy drawbacks. With the curfew, distance maintenance between each other and lockdowns, customers unable to visit for shop premises to buy the goods by themselves and it's time-consuming to stay in lines and buy goods. Considering the situation people are collecting a stock of goods to present and future consumptions. Rural areas having the problem of lack of FMCG more than in town areas. As the people need to fulfil their day today requirements, the groceries are not capable to provide sufficient supply to the customers with limited stock. Analyzing all the factors, the customer demand for FMCG is high and due to distribution issues, which effect for entire country economy. Developing strategies that match both business and IT views is a key to success in dramatic changing of IT and business



process (2). According to the SWOT analysis, the situation can be summarized. The ability of goods transportation is a strength, inability to supply sufficient food stock is a weakness, possibility to distribute goods all over the country is an opportunity, risk of virus infection to the working employees and government strict curfews are a threat. A quick strategy to FMCG distribution is a major requirement. The companies could use strategic sweet spot method and strategic window method can be used to provide varying goods and unique products during the situation (e.g.: unique soap, packed food) Strategic Factors Analysis Summary (SFAS) Matrix can be used to understand internal strengths and weaknesses (experienced staff, absent of current staff) and external opportunities and threats (current demand for FMCG, government curfew rules) that should consider when building a proper IT and business strategy.

### 3. PROPOSED BUSINESS AND IT STRATEGY

A well-developed computer application or an online website could use by FMCG companies. IT strategic planning can promote consistency between business strategy (3). The most appropriate method is the application, which capable to notify the customer easily using a message when new stock arrived. It is an IT strategy that uses to aware customers about the goods. IT strategy is the method of placing the business in the information technology marketplace (4). Popping-up advertisements with mentioning offers, discounts, new products are another IT strategy to notify the customers. Differencing the interfaces of the website or application during considerable time is another IT strategy that can be us to get more customer attraction. It's a better way to use many payment methods like credit, debit card payments, cash on delivery etc. Products distribution can be accomplished with the help of delivery companies (e.g.: Uber, Pick me) in town areas. Before the delivery, a message about the order and delivering person is crucial to make the customer confident about the order. The rural area deliveries can be done by charging a considerable high fee to transport. Meanwhile, the companies could promote selected days to travel in selected areas and distribute goods through the website or application which is reducing customers' expenditure to delivery charge and increasing customer satisfaction. Many business strategies could use one is the strategic alliance. Businesses are increasingly developing strategies that integrate sustainability aims and objectives (5). Combining with other companies to gain more income, and reduce financial risk. For example, soap companies could combine with toothpaste companies and a considerable price can label. This

providing opportunity to more sales while reducing separate transport expenditure by each. Lower cost strategy of Porter's competitive strategies', could use to increase the sales amount while the combination of different products from different companies use this to promote the products. Further, regular use of cost focus and differentiation focus methods could use to distribute the products in different locations. Clear and proper routing magnify the business opportunity reducing missing of locations. Long term contracts could use to make agreements with other companies to distribute and sell the goods during the quarantine and the discounted prices would help to improve the sales of the products. For example selling soap with packed foods with a discount is more profitable than selling them individually. Cost leadership method is another important step by reducing the unit price of goods that are distributing and that effects for large market sale.

### 4. BENEFITS AND DRAWBACKS

More sales during a short period, Easy good promotion by travelling to various locations and through websites, more income due to a greater number of sales are some benefits of using IT and Business strategies. Considerably high cost to implement and maintain the strategies, minimize the number of sales of specific good effect for other goods when selling product combinations, are some drawbacks.

### CONCLUSION

The wise practise of IT and business strategies, help to increase business sales, automated promotions, attract market shares and customer confidence. Further providing opportunities to work combining with other parallel companies and understand their weaknesses and strengths. It helps to improve the performance and quality of the goods to gain more customer attraction.

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# DECONSTRUCTION OF THE 'CULT OF DOMESTICITY' BY ALICE WALKER IN *THE COLOR PURPLE* - A CONNOTATIVE STUDY

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## ABSTRACT

*Rooted in several philosophies and ideologies, the globe evolves altogether with multiple perceptions and dogmatic penetrations. The emergence of power through these phases of evolution caused the prevalence of a system of societal relations, constituting oppressive and oppressed communities. When the colonial European people colonized the various nations of the world, there emerged the concept of Euro-centrism, imbining inferiority over the non Europeans. When this made the major struggle of African American people, there occurs a nested struggle of African American women from the stands of both submissive and surpassing women personalities. This paper enables a pragmatic and psychological study of the plot and characters in *The Color Purple*, exploring the author's posed contradictions and ventured deconstructions in terms of 'womanism' and negritude.*

**KEY TERMS:** *Double Marginalization, Cult of Domesticity, Deconstruction, Womanism, Feminism.*

## INTRODUCTION

Deviating from the phallogocentric literary tradition, so far numerous embodiments of feminism marked the literary arena. Each work addressing the social, physical, psychological, emotional, economical and various other strands of terror, they not only mark their prevalence in the society, rather wakes up the consciousness over the consciences. Alice Walker, the first African American woman to win a Pulitzer Prize, won in her profound attempt in reconciling the trapped female lives with the African American community in her novel *The Color Purple*. More than interpreting the existences, the novel also explores the *vox populi* of the native African Americans. The sufferings and struggles encountered by the characters in the novel from every nook of their survival draws an essentially true portrait of the lived experiences. The Epistolary novel *The Color Purple* highlights the letters of sisters Celie and Nettie, their Catch-22 situation and their toil besides the waspish people engirdled in their lives. Their trapped clueless lives were finally endowed with the contradictory sense of relief and reassurance, where

Alice Walker provides enlightenment to her characters through their struggles over 'real-life' multifaceted baffles and Battles.

## CULT OF DOMESTICITY

A society enforcing women's primary responsibility so as to serve the household chores, whatever physical or mental trauma comes down with, is highlighted throughout the novel *The Color Purple*. Celie, being the one who is abused by her step father, being the one who had no control over her pregnancy and babies, the one who had no desire towards her husband, the one who had no access to her own life, was always pushed to serve the domestic duties including obeyed sex and approved abuses. When Celie is depicted as a fighting yet defeated survivor, her sister Nettie is portrayed as a fighter filled with fear and courage, battling and escaping the toils to seek a life of perfection. The role of being mute about the personal trauma but to submit to the masculine figure, serving his needs and desires by stripping one's own soul, is well endured by the character Celie. Her claims, questions, anger,



frustration were all addressed only in her letters to God, but that did not stop her submissive household domestic worker attitude. Though none of her life tracks were her personal choice, she got no option to stand against the blaze of horror. All she endured was domination, oppression, inhumane acts, unsparing attitude from the patriarchal community around her, which in turn made her not to react but to given in. The only success of Celie underlies in protecting her sister Nettie from Celie's step father and husband.

With the cult of domesticity, also occurs the double marginalization of black women, marginalized by the white community for her African American race and also equally marginalized by the men of her community for female gender. To show the injustices inflicted and the disadvantaged positions forced on the woman in her society, Alice Walker embodies the novel and the casualties in her vision to valorize the vulnerable ones.

### DECONSTRUCTION THROUGH CONTRADICTIONS

Alice Walker contrasts the character Celie with several other brave women characters including Shug Avery and Sofia. It makes both Celie as well as the readers to analyze and realize the changes in the *Elan Vital* and the *Modus Operandi* of women who are from the same community facing similar oppressions. Shug Avery emerges as a symbol of courage and confidence in Celie's life. She acknowledges Celie to voice out her needs and desires, her willingness and adverse feelings, her right to oppose and accept, unlocking Celie from all her entrapments and fear. A woman analyzing the subjugation of women, exploring the status of women and insisting for the need of equality and empowerment makes up the attitude of Shug Avery. Unlike Celie, Shug Avery achieves a status for her own self, seeking chances, creating opportunities and being a lighthouse of empowerment for all subjugated and oppressed ones. Neither she is dependent on men nor does she ignore them. She is not the one representing feminism rather the one who prefers equality of sexes, equality of freedom and equality of everyone's right to life and choices.

On the other hand, when Albert's son started abusing and oppressing his wife Sofia, Sofia got infuriated and left him with no hope. It was the same plight of abuse exerted by Albert on Celie, to which Celie gave in with neither denial nor disputes. Alice Walker deconstructs the assumptions established by the patriarchal circle over womanhood, thereby exposing woman beyond that of sexuality, labor, reproduction and domesticity. Also the ultimate truth about how

radical feminists faced greater challenges than the subjugated ones is explored here. The novelist contrasted Shug Avery and Sofia in such a way that both tried to dissect the established boundaries and traps. While Shug Avery got her way through all, Sofia could not. Being courageous, Sofia could overcome male supremacy of her community but could not get over the domination of the white community. She got stuck into that criterion of double marginalization. Her bold courageous voice remains unheard while her forced service to white community strengthens her oppressed strands.

Alice Walker deconstructs the assumptions by making her women explore the possibilities, challenges and the taunts they had to face through, to deconstruct the elites and construct their flight.

### PHASE OF SELF-DISCOVERY

Alice Walker interprets the constructed stereotypes and the aligned destructive psychic mechanism that gets weaved along the cultural, gender and racial bias. To every reader, she provides a psychological cognizance on what happens to her community, especially her women's lives- the unrevealed injustices and unequal power relations. Towards the beginning of the novel, Celie believes the views of men on her, as being ugly and worthless. She accepts the stinky comments, intolerable abuses and prepares herself to survive through all the complications she was provided with. Her extreme physical and psychological pain and wounds made her stay passive over all injustices. When Shug appeared in Celie's life, Celie explored her own life, through all desires, needs, sexual preferences and worldly pleasures, witnessing the sense of freedom. She was in the same status of social life with Albert and children, but psychologically she evolved and progressed much more, breaking the psychological barriers and dilemmas. Shug appeared a helping hand for Celie, emancipating her from her clueless mental distresses. She helped Celie not only to explore her idea on life, God and existence, but also the conceptions and false perspectives on sex, relationship and contentment. Every women character in the novel shared a bond of sisterhood- Celie and Nettie, Celie and Shug Avery, Sofia and Mary Agnes- in their journeys through passivity and felicity. They faced the challenges, broke it and overcame, or at times subsided as in case of Sofia. However finally they were able to transform into valorous venturous personalities, no more afraid of unfair bias and unjust ill-treatment, and no more stopped by the oppressive sectors of the society.



## CONCLUSION

The novel *The Color purple* widens the readers' understanding of the status and experiences of women not only of being submissive but being a struggler, getting dejected, being tormented but fighting back again and again as a Phoenix from the fire. Every women character in the novel achieves a sense of contentment which is not their actual way of life but a gift of their continuous struggle, as endowed by the author. Alice Walker does not stand against the domesticity trait found in women, rather their falsehood in their acceptance to such submissive cult of domesticity as the only essence of their lives they could masterfully perform. Being a masterpiece of a magical writer, the novel *The Color Purple* explores and imbibes sex with love, struggle with hope, duty with regard and progress with personal space.



## CLEANLINESS IS THE MAIN GUARANTEE TO PREVENT COVID-19

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### ANNOTATION

*Today, the whole world is facing to one of the biggest problems in the history of mankind, which is known as COVID-19. This paper is about the COVID-19 which is spreading all over the world. It also discusses about the symptoms of coronavirus, how it is transmitted to people and suggests several tips to prevent the disease.*

**KEY WORDS:** COVID-19, SARS-CoV, coronavirus, infection, dry-cough, sneezing, fever

### DISCUSSION

Human health is the wealth of society. Everyone should consider ways to stay healthy. It is obvious that a healthy person is in a good mood and always eager to work. Our people rightly say, "Health is a healthy soul". The future of our country, its development, children's prosperity, is in everyone's hands.

Health is a great wealth. If you are healthy, everything will be fine. A healthy person is happy and has a happy life. That is why I believe that the main task of every sensible citizen is to make every citizen be aware of the infectious disease that is spreading in the world today, that is, the coronavirus, and to advocate for its prevention on a daily basis. The flu kills many more people a year in the world. However, without treatment, a new infection can be even more dangerous. Coronavirus is a large group of viruses that are common in both animals and humans.

What is the mode of transmission of the coronavirus?

The coronavirus can be transmitted from person to person through droplets in the air (coughing, sneezing, talking), and can be transmitted through household items and through contaminated food or water. Therefore, each of us should cover our mouth with a towel when we sneeze, and wash our face and hands every hour before eating. As the

friend of health is cleanliness, we need to keep our personal hygiene clean.

The following conditions must be met for a person to be healthy:

- Always keep your body, face, hands and clothes clean.
- Exercise and do sports.
- Eat vitamin-rich foods, fruits and vegetables.

From ancient times our ancestors paid special attention to cleanliness, when a guest came to the house, they poured water into a jug and a small copper basin to wash hands. Even members of family washed their hands and kept themselves clean at every meal.

"Cleanliness is the basis of health, Health is the basis of wealth," - said our people. Our wise people did not say this proverb in vain.

Today, the World Health Organization has declared a global emergency, and what do we think about this disease, which has caused such a stir on the planet? It is a name derived from the Latin words crowns (crown) or halos (circle). This is because the coronavirus looks like a combination of the two (crown and circle) under a microscope. This group of viruses includes several types that can harm humans. One is caused by the flu, the other is found in bats, camels and animals, and is now known in science as SARS (Severe and Acute Respiratory Syndrome) and MERS (Middle East Respiratory Syndrome). How



did it come into existence? The virus appeared in the city of Wuhan in central China's Hubei Province. Many of those who first became infected were those who went to or worked in seafood markets. The store was immediately closed for investigation. Chinese medical experts initially said that the coronavirus was transmitted only from animals to humans, but now they have to admit that it is transmitted from person to person. It is expected that the geography of the disease will even expand.

What are the symptoms? Typical symptoms of this virus are fever, headache, dry cough and body tremors. In addition, the US Centers for Disease Control and Prevention reports that those infected with the more dangerous form of the coronavirus have shortness of breath, tremors, and, in severe cases, patients may develop pneumonia. How is it treated? Tests are currently underway to detect the mysterious virus. However, a vaccine to prevent this infection has not yet been developed. This means that it can be more dangerous than the common flu, which kills many people every year. Therefore, in order to prevent the spread of this dangerous disease, people infected with the coronavirus are isolated in hospitals and at home. Its symptoms are treated with painkillers and antipyretics. In addition, such patients are advised to drink plenty of water and rest until recovery. How are coronaviruses transmitted? Most coronaviruses are spread by coughing, sneezing, or being in contact with the infected people. According to scientists, the new virus is transmitted by inhalation when in close human-to-human contact. Is it more dangerous than SARS? So far, this virus is not more dangerous than SARS. The latter spread from China in 2002-2003, killing about 800 people. However, there is speculation that the mysterious coronavirus may become even more dangerous or infectious. It is unknown at this time what the consequences will be.

The virus, which is spreading across the continent, especially in China, is called Wuhan or New Coronavirus (2019-nCoV). Coronavirus is a large family of viruses that is common among animals, including camels, cattle, cats, and bats.

But most infected people say that they have no contact with animals. That is, it can be transmitted from person to person through the air, like the flu route. According to the latest data, the incubation period can last from 2 to 14 days.

How to avoid coronavirus infection? There is currently no vaccine to prevent 2019-nCoV infection. Therefore, if you are traveling or afraid of the virus, the most effective way to prevent the disease is to avoid its effects.

Other safety ways are the same as for other respiratory diseases. Wash your hands often with soap or water.

1. If soap and water are not available, use an alcohol-based hand sanitizer.

2. Keep unwashed hands away from your eyes, nose and mouth.

3. Avoid contact with sick people.

4. Stay home when you are sick.

5. When coughing or sneezing, cover your face with a towel and then throw it in the trash.

6. Clean and disinfect tools and surfaces you are in constant contact with.

7. These are daily habits that prevent the spread of many viruses. The CDC has special offers for travelers.

We are the descendants of such scholars as Abu Ali Ibn Sina, who for centuries have preserved the nobility of our people and made the greatest contribution to the history of medicine in the world. In Ibn Sina's medicine, the goal of medical science is not only to treat the patient, but also to prevent the onset or prevention of disease, to focus on health. Ibn Sina expressed his views on the existence of "small animals" that are invisible to the naked eye and that they can cause disease through air and water. Only 850 years later, L. Pasteur studied the role of microorganisms in the transmission of infectious diseases. The Canon of Medicine also deals with age-related hygiene, nutrition, comprehensive parenting, and infant development. As soon as the "Canon of Medical Science" was written, it was immediately distributed in many copies. One hundred years after the death of Ibn Sina, the "Canon" became famous throughout Europe. In the 12th century, the Canon was first translated into Latin. In the XIII century - in the ancient Hebrew language, and later spread to many inscriptions. Canon was one of the first books to be published in the 15th century. This book served as an encyclopedia of medicine for many centuries and was the only necessary book on the table of doctors. Until the middle of the XVII century, classes in all European universities were conducted on the "Canon".

We should follow the path set by such scientists and help to take care of our health and the health of our relatives. You should explain to each other the importance of health for human life, the importance of maintaining it in human life, the dangers of microbes, the diseases of dirty hands, ways to avoid infections and coronaviruses.

In ancient times, according to the ancient custom, the bride did not call her husband's relatives by their first names. She was accustomed to give each of them a different name (depending on age or status in the family). For example, the bride used to give names for girls like *kara koz*, *bikesh*, *shyraylym*, *yerkezhan* and for boys or men *aydarlim*, *shyrak*, *teteles*, *mirza aga*, *tore mirza aga* and *bij aga*.

Other forms of taboo words are also directly related to the forces of nature, the names of deadly





diseases, and predators. In other words, instead of calling smallpox directly, we used to call it as *aulie*, *korasan*, *meiman* and *konak* due to the belief that it "infects" and "sticks". Also, we used to call a wolf as *itkus*, *kara kulak* and *ulyma* due to the belief that if we call a wolf by its name as "wolf" it will attack our cattle. In the same way, if we find a synonym for this epidemic without naming it, maybe we can get rid of it quickly. We think that if we respect the traditions of our ancestors and contribute to the good, there will not be any disadvantages of it.

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## ROLE OF CAREC IN STRENGTHENING REGIONAL ENVIRONMENTAL COOPERATION IN CENTRAL ASIA

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### ANNOTATION

*This article analyzes the role of the Regional Environmental Center for Central Asia (CAREC) in strengthening regional environmental cooperation. The article states that since 2001 CAREC has developed into a regional organization, promoting environmental cooperation and sustainable development in the Central Asia region. The article highlights the efforts of CAREC in strengthening regional cooperation on environmental protection in Central Asia. Dialogue at a technical level is the projects of the center. Dialogue at the level of decision-makers is a platform of parliamentarians and MFA representations. The next level is the annual Central Asian International Environmental Forum.*

**KEYWORDS:** *Aral Sea, Central Asian region, The Interstate Commission for Sustainable Development, The Regional Environmental Center for Central Asia, The Regional Environmental Action Plan, Aral Sea Basin Program.*

### DISCUSSION

The environmental problems of the Central Asian region are diverse. They arose in the region due to the active influence of man on nature: here more than 100 years ago they began to intensively develop natural resources, developing the economy, agriculture, and energy. The Aral Sea disaster is one of the global environmental problems. In addition, biodiversity is declining - the wealth of nature is decreasing. Strong land degradation is occurring. In this area, the population has been irrigating for five thousand years. Climate change is a new challenge.

It is well known that the ideas of sustainable development imply balanced economic, environmental and social development to improve the quality of life of both present and future generations. These ideas have gained great understanding and support in the countries of Central Asia. In the Central Asian region, various regional environmental initiatives are underway, such as the development of the Aral Sea Basin Program (ASBP), The Regional Environmental Action Plan (EAPA), supported by regional organizations such as the Executive Committee of the International Fund for Saving the

Aral Sea (IFAS) ), The Interstate Commission for Sustainable Development (ICSD), the Interstate Coordination Water Commission (ICWC) and the Regional Environmental Center for Central Asia (CAREC).

The Regional Environmental Center for Central Asia (CAREC) is a leading regional center for knowledge in the field of environment and sustainable development, recognized by national, regional and international partners. This organization was established in 2001 by the governments of five Central Asian countries, as well as by the European Union and UNDP in accordance with the decision of the 4th Pan-European Conference, held in 1998 in Aarhus, Denmark [1, p. 3].

Since its inception, promoting environmental cooperation and sustainable development in the Central Asia region, CAREC has developed into a regional organization. Until 2008, CAREC received direct targeted grants to support activities. The European Union and other international organizations supported the



development of CAREC as a regional platform for environmental cooperation. Government agencies, non-governmental organizations and international agencies see CAREC as a professional and reliable partner.

One of the main challenges for the organization in 2013 was the transition from a design organization to a regional one. The transition specifically to a regional cooperation platform, to an organization that really contributes to the development of the region, not only fulfills specific project orders. In the period from 2013 to 2018, CAREC created a number of dialogue platforms with the aim of expanding cooperation on various environmental issues: Central Asian International Environmental Forum, Central -Asian Conference on Climate Change, Meetings of Parliamentarians and Foreign Ministry Representatives. It is also worth noting that from a large number of pilot projects, CAREC switched to the implementation of large-scale system projects.

In the period from 2014 to 2019, CAREC implemented the Aarhus Convention, including within the framework of the developed "Concept for working with NGOs". At the end of 2019 - the beginning of 2020. CAREC has begun the development of a new "Concept for Interaction with CSOs in Central Asia for the period 2020-2025".

CAREC also contributes to the implementation of the Aarhus Convention indirectly and as follows:

- Through the organization of annual regional conferences and forums;
- on climate change, where issues of access to climate information, solutions and financing are raised;
- Water management, which discusses the issue of water quality, data availability and information exchange;
- to fulfill the obligations of various environmental conventions, where access to information is a priority;
- on the greening of the economy, which indicates the relationship of the environment and sustainable development;
- Through the joint implementation of pilot projects as part of large projects;
- By inviting representatives of the CSOs of Central Asia as speakers, moderators and facilitators of national regional events.

In recent years, CAREC has been implementing 4 mega-projects: "Water, Education and Cooperation", CAMP4ASB, Nexus Dialogues in Central Asia, UzWaterAware. In addition, in the past period, a large project of the European Union on water cooperation in Central Asia WECOOP was implemented.

The main objective of the Nexus project was to increase understanding of the relationship between "water-energy-food" security (EEP), promote a multi-sectoral approach and cooperation between the countries of Central Asia (CA), and develop an investment portfolio of EEP Nexus projects ideas. Small-scale projects implemented in Tajikistan, Turkmenistan, and Uzbekistan contributed to piloting the practical application of the EEP Nexus approach, in particular, in the multifunctional operation of dams, ensuring sustainable access to water in desert pastures and promoting investment in energy saving at pumping stations [3, p. 25].

Separately, it is worth noting the efforts of CAREC in strengthening regional cooperation on environmental protection in Central Asia. The dialogue continues at all levels. Dialogue at a technical level is the center's projects. Dialogue at the level of decision-makers is a platform of parliamentarians and representative offices of the Ministry of Foreign Affairs. The next level is the annual Central Asian International Environmental Forum. Every year, in one of the countries of Central Asia, an environmental forum is held on a rotational basis, which brings together scientists, decision-makers, government departments and NGOs.

On March 15, 2018, the first working consultative meeting of the heads of state of Central Asia was held in Astana. The presidents of Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and the speaker of the parliament of Turkmenistan sat down at the negotiating table to discuss the most pressing problems of the region.

And on August 24, 2018, the first summit of the heads of the founding states of IFAS was held in Turkmenistan in nine years. The meeting was attended by the presidents of all five countries of Central Asia. As a result of an open dialogue between the presidents of the countries, a communiqué was signed that drew attention to acute shortcomings in the work to improve the condition of the Aral Sea basin.

In the light of the changing political situation in the region, the role of CAREC has intensified over the past year. Together with international partners, state bodies, local authorities and civil society of Central Asia, CAREC organized a large number of significant events. From June 5 to 8, 2018, one of the largest environmental events in the region, the Central Asian International Environmental Forum (CAMEF), was successfully held in Tashkent.

Another important large-scale event of CAREC was the first Central Asian Conference on Climate Change, held on January 24-25, 2018 in Almaty.

On March 21, 2018, CAREC and the IFAS Executive Committee held a joint event on the



sidelines of the 8th World Water Forum (Brazil), the largest water event in the world. CAREC also facilitated the participation of the Central Asian delegation in other global events: at the 6th Asia-Pacific Climate Change Adaptation Forum and the 13th Ramsar Conference of Parties.

On September 16-25, 2019, the 10th anniversary of the Central Asian Environment Leadership Program for Sustainable Development in Almaty was held, the agenda of which was related to the theme of the "green" economy, water management, water diplomacy, green energy and gender equality.

In general, Central Asian governments see CAREC as a unique platform that allows them to participate in international environmental processes, increase their ability to gain access to international financing mechanisms in the field of climate change and biodiversity, and assist in promoting such regional environmental management models. as the Executive Committee of the International Fund for Saving the Aral Sea (EC IFAS) and the Interstate Commission for Sustainable Development (ICSD).

Inquiries from donors, government agencies, and civil society organizations in Central Asian countries emphasize the need for structural strengthening of the catalytic and coordinating role of CAREC in this area.

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# A COMPARATIVE STUDY ON CUSTOMER SATISFACTION TOWARDS JIO&AIRTEL WITH REFERENCE TO COIMBATORE CITY

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## ABSTRACT

*Customer satisfaction is the degree of satisfaction provided by the goods or services of a company as measured by the number of repeat customers. The main objective of the study is to compare the services rendered by Airtel and Jio Descriptive research is followed in this research. The population includes the respondents who are the users of both Airtel and Jio services, located at coimbatore city. The samples (i.e. sample size 50) were selected among the users of both Airtel and Jio located at Coimbatore city for this research. The major findings of the study, satisfaction level of customers are average with respect to tariff, service coverage, data plan, compatibility and other factors ranging from 3.00 to 3.65. From the research, it is concluded that the demographic variables such as age group, gender and occupation are having no impact on the factors of customers' satisfaction. The research outcome also indicates that, most of the customers were satisfied towards Airtel and Jio with respect to the chosen factors.*

**KEYWORDS :** Airtel, Comparative study, Customer satisfaction, Mobile connection, Jio.

## I.INTRODUCTION

Customer satisfaction is the degree of satisfaction provided by the goods or services of a company as measured by the number of repeat customers. Customer satisfaction survey is a process of discovering whether or not a company's customers are happy or satisfied with the products or services received from the company. It may be conducted face to face, over the phone, via email or internet, or on handwritten forms. Customer answers to questions are then used to analyze whether or not changes need to be made in business operations to increase overall satisfaction of customers. It is defined as "the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services exceeds specified satisfaction goals. In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy. The purpose of this study is to compare customer satisfaction towards Airtel and Jio services. More specifically, the focus is on

examining the grouped impact of the factors on customer satisfaction.

## II. COMPANY PROFILE

**Bharti Airtel Ltd** is one of the world's leading providers of telecommunication services with presence in 19 countries including India & South Asia and Africa. The company is the largest wireless service provider in India, based on the number of customers. The company offers an integrated suite of telecom solutions to its enterprise customers, in addition to providing long distance connectivity both nationally and internationally. The Company also offers Digital TV and IPTV Services. All these services are rendered under a unified brand 'Airtel' either directly or through subsidiary companies.

Reliance **Jio** Infocomm Limited, d/b/a **Jio**, is an Indian telecommunications company and wholly owned subsidiary of Reliance Industries, headquartered in Mumbai, Maharashtra, India. In September 2019, **Jio** launched a fiber to the home service, offering home broadband, television, and telephone services. Jio is not just a telecom network, it



is an entire ecosystem that allows Indians to live the digital life to the fullest. This ecosystem consists of powerful broadband networks, useful applications, best-in-class services and smart devices distributed to every doorstep in India.

### III. REVIEW OF LITERATURE

Debarun Chakraborty (2013), in his article determined the customer satisfaction & expectation towards a telecommunication company in West Midnapore which is a district of West Bengal. A descriptive study was conducted to achieve the objectives. In total 250 respondents filled a well-structured questionnaire having a list of statements pertaining to products, services & facilities provided by the service provider. Results reveal that the dimensions which influence the satisfaction level of customer's are: Core services (like good coverage, good connectivity and network quality) and call rate. Further results show that there is a significant relation between the brand name and the preference of customers. Hence, it has been recommended that telecom companies should focus on connectivity, call rate, coverage and network quality.

Kavitha et al (2013), in their article titled "A study on Customer satisfaction towards Vodafone sim card special reference in Madurai city" determined the consumer satisfaction on Vodafone service providers' services in Madurai district and to find out the consumers mentality towards using the services. The research type used in this study is descriptive research. Data were collected by survey method through structured questionnaire with both opened and closed ended questions. For distribution of questionnaire to the consumer convenience sampling method was used to select the customers and the survey was taken among those selected users. After collecting the data from the respondents it was analyzed using Simple Percentage and Chi-Square Tests method used for analyzing the collected data.

Debarun Chakraborty (2013), in his research investigated the customer satisfaction & expectation towards a telecommunication company in West Midnapore which is a district of West Bengal. A descriptive study was conducted to achieve the objectives. In total 250 respondents filled a well-structured questionnaire having a list of statements pertaining to products, services & facilities provided by the service provider. Results reveal that the dimensions which influence the satisfaction level of customer's are: Core services (like good coverage, good connectivity and network quality) and call rate. Further results show that there is a significant relation between the brand name and the preference of customers. Hence, it has been recommended that

telecom companies should focus on connectivity, call rate, coverage and network quality.

### IV. OBJECTIVE OF THE STUDY

#### PRIMARY OBJECTIVE

- To find out the customer satisfaction towards Airtel and Jio services at Coimbatore city

#### SECONDARY OBJECTIVES

- To assess the association between demographic variables and factors of customer satisfaction.
- To identify the customer satisfaction towards the services rendered by both Airtel and Jio.
- To assess the customer satisfaction towards signal coverage, data plan, value added services, payment options of Jio and Airtel.

### V. LIMITATIONS OF THE STUDY

- The study is conducted on Airtel and Jio located at Coimbatore city with 50 respondents.
- The respondents' response may have the bias, which may not give true picture about the chosen research topic.
- The sampling unit chosen is Airtel and Jio stores located in Coimbatore city, the survey result may vary in other locations, based on the kind of services provided at other stores.

### VI. RESEARCH METHODOLOGY

Descriptive research is followed in this research. The universe of the population includes the respondents who are the customers of Jio and Airtel, located at Coimbatore city. The samples (i.e. sample size 50) were selected among the customers of Airtel and Jio, located at Coimbatore city for this research. The samples were chosen from the population, by using Convenience sampling technique (i.e. Non-probability sampling technique), because the exact population size is unknown and the accessibility of the customer is difficult. Survey method of data collection was used in this research. The primary data were collected using structured questionnaire.



**VII. DATA ANALYSIS AND INTERPRETATION**

**1. Frequency Analysis**

Percentage analysis is one of the descriptive statistical measures used to describe the characteristics

of the sample or population in totality. Percentage analysis involves computing measures of variables selected of the study and its finding will give easy interpretation for the reader.

**Table 1 Frequency Table – Classification of respondents -Age, Gender and Occupation**

S.no	Particulars	Frequency	Percentage
<b>1.</b>	<b>Age</b>		
	18-25 years	32	64
	25-35 years	10	20
	35-45 years	4	8
	Above 45 years	4	8
<b>2.</b>	<b>Gender</b>		
	Male	35	70
	Female	15	30
<b>3.</b>	<b>Occupation</b>		
	Executive/Managerial	3	6
	Professional (Doctor, Lawyer etc.)	8	16
	Student	29	58
	Others	10	20

*(Source: Primary Data)*

**INFERENCE**

From the above table 1, it is inferred that majority (64%) of the respondents who fall between the age of 18-25 are the customers of Airtel and Jio.

Majority (70%)of the respondents are male. Majority (58%) of the respondents belongs to the student category.



Table 2: Cross tabulation about Airtel and Jio connection

S.No	Particulars	Airtel	Jio	Total
1	<b>For how long have you been using these services?</b>			
	less than 6 months	1	1	2
	6 months - 1 year	10	6	16
	more than 1 year	14	18	32
2	<b>What is your monthly expenditure in terms of mobile usage?</b>			
	less than Rs.200	6	3	9
	Rs.200 - Rs.500	11	9	20
	Rs.500 - Rs.1000	8	13	21
	Above Rs.1000	0	0	0
3	<b>How do you rate your services provider in terms of connectivity and area of network coverage?</b>			
	Good	24	23	47
	Bad	1	2	3
4	<b>Does your Service Provider have any hidden costs incorporated in the plan you are using?</b>			
	Yes	16	16	32
	No	9	9	18
5	<b>Will you recommend Jio or Airtel to others?</b>			
	Yes	22	22	44
	No	3	3	6
6	<b>What services of Airtel and Jio you are using?</b>			
	3G	9	6	15
	4G	16	18	24
	Value added	0	1	1

### INFERENCE

From the above table 2, regarding the basic details of Airtel and Jio, it is clear that most of the customers in both the companies are using it since 1 year (14 and 18 respectively), the monthly expenditure in Airtel is between 200-500 (11) and Jio is 500-100 (18), also most of them are rating it good (24 in Jio and 23 in Airtel). Both have equally responded by saying that there is hidden cost (16), most of them in both the services are using 4G services more (16 and 18 respectively) and most of them equally for both companies are recommending it to others.





## 2. Mean and standard Deviation

**Table 3. Mean and Standard - Factors of customer satisfaction**

S. No	Particulars	N	Mean	Std. Deviation
1.	Tariff	50	3.22	0.582
2.	Signal coverage	50	3.65	0.663
3.	Data plan	50	3.30	0.839
4.	Customer care	50	3.36	0.851
5.	Recharge shop/Bill payment option	50	3.56	0.837
6.	Value added services	50	3.14	0.756
7.	IVR Service	50	3.00	0.808
8.	Application compatibility	50	3.24	0.771

(Source: Primary Data)

### INFERENCE

From the table 3, all the respondents are almost equally satisfied towards the services provided by the company. But signal coverage with a mean of 3.65 and bill payment option with 3.56 is most satisfied among them.

### 2. INDEPENDENT SAMPLE T-TEST HYPOTHESIS 1

#### Null Hypothesis:

There is no significant difference between male and female respondents with respect to the factors of customer satisfaction of Airtel and Jio



**Table 4: T-test for significant difference between male and female respondents with respect to the factors of customer satisfaction towards Airtel and Jio**

S.No	Particulars	Gender	Mean	Std. Deviation	t value	p value
1.	Tariff	Male	3.26	0.601	0.932	0.356
		Female	3.08	0.515		
2.	Signal coverage	Male	3.59	0.599	1.086	0.283
		Female	3.83	0.835		
3.	Data plan	Male	3.26	0.891	0.549	0.586
		Female	3.42	0.669		
4.	Customer care	Male	3.42	0.826	0.901	0.372
		Female	3.17	0.937		
5.	Recharge shop/Bill payment option	Male	3.58	0.858	0.282	0.779
		Female	3.50	0.798		
6.	Value added services	Male	3.18	0.766	0.732	0.468
		Female	3.00	0.739		
7.	IVR service	Male	3.03	0.822	0.406	0.686
		Female	2.92	0.793		
8.	Application compatibility	Male	3.18	0.801	0.909	0.368
		Female	3.42	0.669		

(Source: Primary Data)

**INFERENCE**

From the above table 4, it is inferred that all the satisfaction features are similar in the situation. Still data plan, signal, compatibility and all others are showing better satisfaction level. Also the p values are above 0.05, so the null hypothesis is accepted and alternative hypothesis is rejected. Hence it is concluded

that there is no significant difference between male and female respondents with respect to the factors of customer satisfaction of Airtel and Jio

**CHI-SQUARE TEST HYPOTHESIS 2**

There is no association between type of plan and overall satisfaction towards services.



Table 5: Chi-Square test for association between age and overall satisfaction towards Airtel and Jio

Services		Highly Dissatisfied	Dissatisfied	Neutral	Satisfied	Highly satisfied	Chi-square value	p value
Tariff	Prepaid	0	3	23	11	1	4.178	0.243
	Post paid	0	0	11	1	0		
SignalCoverage	Prepaid	0	2	10	23	2	0.819	0.845
	Post paid	0	1	3	8	0		
Data plan	Prepaid	1	5	12	19	1	2.255	0.689
	Post paid	0	3	5	4	0		
Customer care	Prepaid	1	4	16	15	2	0.837	0.933
	Post paid	0	2	5	4	1		
Recharge shop	Prepaid	0	2	13	17	6	3.538	0.316
	Post paid	0	2	5	5	0		
Value added service	Prepaid	1	6	20	10	1	1.209	0.877
	Post paid	0	1	7	4	0		
IVR service	Prepaid	0	11	16	10	1	0.710	0.871
	Post paid	0	4	4	4	0		
Application compatibility	Prepaid	0	9	12	17	0	1.954	0.376
	Post paid	0	1	6	5	0		

(Source: Primary Data)

### INFERENCE

Since p value of all the satisfaction factors are greater than 0.050 in which null hypothesis is accepted and alternative hypothesis is rejected at 5% level of significance. Hence it is concluded that there is no

association between type of plan and level of satisfaction on quality of services.

### HYPOTHESIS 3

Null Hypothesis: There is no association between plan and type of mobile connection.



**Table 6 Chi- Square test for plan and feel about call tariff.**

S No.	Feel about call tariff	Which type of services do you use?		Chi-square value	p value
		Prepaid	Post-paid		
1	Very Economical	3	0	1.923	0.589
2	Cheap	2	0		
3	Normal	29	10		
4	Expensive	4	2		
Total		38	12		

(Source: Primary Data)

**INFERENCE**

From the table 6, since p value is more than 0.05, the null hypothesis is accepted, and alternative hypothesis is accepted at 5% level of significance. Hence it is

concluded that there is no association between plan and call tariff.

**HYPOTHESIS 4**

Null Hypothesis: There is no association between STD and ISD plan and type of mobile connection.

**Table 7. Chi- Square test for STD and ISD related to plan and feel about call tariff.**

S No.	STD and ISD rate related to plan	Which type of services do you use?		Chi-square value	p value
		Prepaid	Post paid		
1	Very economical	2	0	2.649	0.618
2	Cheap	2	0		
3	Normal	17	5		
4	Expensive	13	4		
5	Very expensive	4	3		
Total		38	12		

(Source: Primary Data)

**INFERENCE**

From the table 7, since p value is more than 0.05, the null hypothesis is accepted, and alternative hypothesis is accepted at 5% level of significance. Hence it is concluded that there is no significant association between STD and ISD plan and type of mobile connection.

- There is no significant association between plan and call tariff.
- There is no significant association between STD and ISD plan and call tariff.

**VIII.DISCUSSIONS**

- There is no significant difference between male and female respondents with respect to the factors of customer satisfaction of Airtel and Jio like tariff, service coverage, data plan, compatibility and several other services.
- There is association between type of plan and level of satisfaction on quality of services like tariff, service coverage, data plan, compatibility and several other services.
- From the mean and std. deviation, it is inferred that the satisfaction level of customers are average with respect to tariff, service coverage, data plan, compatibility and other factors ranging from 3.00 to 3.65

**IX. IMPLICATIONS**

- The services available in Airtel and Jio is comparatively normal to each other. It is recommended to provide better customer care and value added services so that customers will get more attracted towards the schemes.
- Airtel should concentrate on bandwidth issues since it is getting more network issues and Jio is comparatively clear in such cases and require less view on technical part.
- The types of plan those company's having real well relation each other and since should concentrate on continuing with providing similar kind of plans.

**CONCLUSION**

Through the research paper entitled, "A Comparative study on Customer satisfaction of Airtel and Jio with reference to Coimbatore city",



it is concluded that the variables such as age group, gender etc .are having less impact on the factors of customers satisfaction. The research outcome also indicates that, most of the customers were satisfied towards Airtel and Jio with respect to the chosen factors. This study also indicates that the customers' satisfaction is comparatively slight advanced with in Jio than Airtel.

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# ASEAN CORPORATE GOVERNANCE SCORECARD, FINANCIAL PERFORMANCE, AND DISCLOSURE OF CORPORATE SOCIAL RESPONSIBILITY ON FIRM VALUE

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## ABSTRACT

*The objectives of this study are as follows: 1) To examine the ASEAN Corporate Governance Scorecard on firm Value; 2) To review the Financial Performance on firm Value; and 3) To examine the effect of Corporate Social Responsibility Disclosure on firm Value. This type of research used in this study is a casual associative research (causal associative research). The population in this study are companies included in the TOP 50 ASEAN Corporate Governance Scorecards listed on the Indonesia Stock Exchange in the period 2015-2017. Sample selection with purposive sampling method. The analytical method used to test hypotheses is the multiple regression test. The results showed that: 1) The ASEAN Corporate Governance Scorecard variable did not affect the firm value in a positive direction; 2) Profitability variable has a positive effect on firm value; 3) Variable disclosure of Corporate Social Responsibility does not affect the firm value with a negative direction.*

**KEYWORDS:** ASEAN Corporate Governance Scorecard, Financial Performance, Corporate Social Responsibility, Firm Value

## INTRODUCTION

The business world has increasingly developed at this time. The emergence of various companies both small and large is a common phenomenon. This phenomenon causes the level of competition between companies to become increasingly stringent. Competition for companies can have a positive effect, namely the drive to always improve the quality of the products produced, but competition also has a negative impact on the company, ie their products will be displaced from the market if the company fails to improve the quality and quality of the products produced. In addition, mastery of technology and communication skills are also needed to continue to survive in the business world today and in the future. With the increasingly intense competition in this globalization era, increasing high company value is a long-term goal that should be achieved by the company which will be reflected in the market price of its shares because investor valuation of the company can be observed through

the movement of stock prices of companies traded on the stock exchange for companies that have gone public.

Investors in investing their wealth in an investment instrument is to get the maximum return. Therefore, investors must have various considerations before investing their funds. One way is to consider the company's performance as measured by the company's value. Company value can be measured from various aspects including market value (book value) and book value of equity. Equity market value is the value of equity based on market prices associated with the company's stock price in the capital market, while the book value of equity is the value of equity based on the company's books.

Measurement of company value based on market value of equity and book value has weaknesses. Brown and Caylor (2006 in Sumatriani, 2017) state that measurement of company value based on stock market prices has weaknesses. First, there are elements of the game played by speculators



to get relatively short profits from the stock market price can go up or down (dramatically). Second, stock market prices tend to be influenced by psychological pressure or irrational actions of investors in investing. Furthermore Brown and Caylor (2006 in Sumatriani, 2017) also stated that the weakness of book value is that it allows for the practice of manipulating financial transactions and as a basis for management to manage earnings to achieve predetermined profit targets. Therefore, investors can consider other company performance measurements.

One measurement of company performance that can be used is to combine book value and market value of equity through the Tobin's Q ratio. This ratio is measured from the market value of assets divided by the book value of assets. Tobin's Q is a more rigorous measure because it provides an overview not only of the fundamental aspects, but also the extent to which the market evaluates the company from various aspects seen by outsiders including investors (Gregory et al., 2007 in Sumatriani, 2017).

To improve the achievement of company goals, the improvement of services and supervision mechanisms need to be improved through the application of corporate governance. The implementation of corporate governance is expected to be a barrier to management fraud behavior, so that the company's performance report (company value) illustrates the true fundamental value. In addition it can create organizational performance that is transparent, accountable, responsible, and reasonable so that it can increase the value of the company.

Research on the effect of good corporate governance on corporate value in developing countries, namely Malaysia, was conducted by (Bhatt & Bhatt, 2017) using the Malaysian Corporate Governance Index (MCGI). The results of this study indicate that companies with high corporate governance have better performance. The results of the study are in line with research (Owusu & Weir, 2016) in Ghana that uses the Ghanaian Corporate Governance Index (GCGI) to assess Corporate Governance. The results of this study indicate that there is a significant positive relationship between the Ghanaian Corporate Governance Index (GCGI) and company performance. In Indonesia research with this theme was carried out by Adhiprasetya & Zulaikha (2019). The study examines companies that are included in the Corporate Governance Perception Index (CGPI) ranking. The results of the study concluded that the ranking of the Corporate Governance Perception Index (CGPI) had no significant effect on firm value. But unlike previous studies, research (Halim & Christiawan, 2017) shows that the Corporate Governance Perception Index (CGPI) has a significant impact on company performance.

Besides being influenced by the implementation of corporate governance, corporate value can also be influenced by profitability. Profitability is the ability of a company to operate in the long run which

depends on obtaining an adequate level of profit (Pearce and Robinson, 2008). To assess profitability, you can use benchmarks such as ratios or indexes that connect two financial data in the financial statements. An assessment of profitability can also be seen by analyzing financial ratios. For this reason, researchers use financial ratios to see the condition of a company. The financial ratio that is often used in analyzing profitability is Return on Assets (ROA) which illustrates the extent of the ability of assets owned by the company can generate profits

Leonardo & Khairunnisa (2019), and Susanti, et al (2019) found that financial performance had a significant positive effect on firm value. While research Lutfia, et al (2019), Lastanti & Salim (2019) found that financial performance had no effect on firm value.

CSR disclosure can increase company value. This is based on research by Alshammari (2015), companies that implement CSR will show better performance, and profit and company growth is increasing. One of the literature shows that companies that act responsibly in their social context can gain competitive advantage and therefore increase the value of their companies. But there are still conflicting findings, such as (Williamdan Siegel, 2001 in Sumatriani, 2017) providing a record of the optimal level of Corporate Social Responsibility for managers to be the basis of controlling an economic view of costs and benefits, CSR does not have a significant impact on firm value. Anderson and Olsen (2011) found a strong relationship between CSR levels and firm value.

The implementation of CSR can be seen from the disclosures made by the company both in the annual report (annual report) and in the report. which is separate from the annual report. CSR disclosures provide information to stakeholders regarding the existence of existing social contracts between companies and stakeholders and company compliance with regulations established by the government (Garcia et al., 2009).

The company carries out CSR activities to balance corporate growth and social commitment, by optimizing company value and social performance. Furthermore CSR resource-based view, states that CSR actions have an impact on stakeholders, CSR investments are relatively related to corporate and social values, because companies can reduce transaction costs by using social activities related to stakeholders (Yongtao and Magaret, 2011).

Mukhtaruddin et al. (2019), and Safira & Saifi (2019) found that the disclosure of Corporate Social Responsibility affects the value of the company. While the research of Sumantri & Andini (2019) found that the disclosure of Corporate Social Responsibility does not affect the value of the company.

Based on the description above, the authors are interested in conducting research entitled "ASEAN Corporate Governance Scorecard, Financial



Performance, and Disclosure of Corporate Social Responsibility On Firm Value".

From the description of the research background above, the main issues to be formulated for discussion in this study can be formulated, namely: 1) Does the ASEAN Corporate Governance Scorecard significantly influence firm value?; 2) Does Financial Performance significantly influence the firm value?; and 3) Does Corporate Social Responsibility Disclosure have a significant effect on firm value?.

## LITERATURE REVIEW

### Signaling theory

Signaling theory is a theory that discusses the ups and downs of prices in the market such as the prices of stocks, bonds, and so on, so that it will influence the investor's decision. Investors' responses to positive and negative signals are very influential in market conditions, they will react in various ways in responding to these signals. If the company gives a convincing signal to potential investors, investors will be interested and this will affect the price of the security.

According to Tandelilin (2010), this signal theory assumes that asymmetric information that occurs in the market causes it to have to make corrections of information by giving concrete actions and will clearly be captured as a signal that distinguishes it from others. The impact of a signal error will actually cause a negative response greater than a positive response when sending the wrong signal to the market.

### Agency Theory

Jensen and Meckling (1976) state that an agency relationship is a contract between a manager (agent) and an investor (principal). There is a conflict of interest between the owner and agent because the possibility of the agent acting is not in accordance with the interests of the principal, thereby triggering agency costs. Conflict in agency theory is usually caused by decision makers who do not participate in taking risks as a result of decision making mistakes. According to decision makers, the risk should be borne by the shareholders. This is what causes the asynchronous between the decision maker (manager) with the shareholders. Conflicts between shareholders and company management can be minimized in a way, managers must run the company in accordance with the interests of shareholders as well as in making decisions by managers must be adjusted to the interests of shareholders (Wahyuni, 2013).

### Stakeholders Theory

According to Clarkson (1995) in Hasian (2017), stakeholders are divided into two groups, namely primary and secondary. Primary stakeholders are groups of stakeholders who do not take part or participate in the operations of a company. Secondary stakeholders are groups of stakeholders who influence and are influenced by the company, but are

not involved and are not so important for the survival of the company.

Stakeholder theory is a theory that states that a company is an entity that not only operates for its own interests, but must provide benefits to all its stakeholders, because the survival of a company is supported by stakeholders (Ghazali and Chariri, 2007 in Hasian, 2017). Shareholders, creditors, consumers, suppliers, the government, the public, analysts, and other parties are stakeholder groups that are considered by the company to disclose or not reveal information in the company's financial statements. All stakeholders have the right to obtain information about company activities.

### Good Corporate Governance

According to Keasy, Corporate governance is a structure, process, culture and system for creating successful operational conditions for an organization (Sunarto in Haris 2008 in Syukri and Chenny, 2018). Koesnohadi (in Haris 2008 in Syukri and Chenny, 2018) said that "Good Corporate Governance is a relationship among stakeholders that is used to determine and control the strategic direction and performance of the organization".

From the above understanding it can be concluded that Good Corporate Governance is a system of corporate governance in order to be better and can increase the value of the company by promoting fairness for all stakeholders, transparency regarding the condition of the company as part of the external environment. (Haris, 2008 in Syukri and Chenny, 2018)

The aim of Good Corporate Governance in general is to create added value for all interested parties, which explicitly by Global Corporate Governance is an important global issue. The Indonesian Institute for Corporate Governance (IICG) reveals the objectives of Good Corporate Governance:

- 1) Regain the confidence of investors and national and international creditors.
- 2) Meet the demands of global standards.
- 3) Minimizing the costs of losses and the costs of prevention of abuse of management authority.
- 4) Minimize the cost of capital by reducing the risk faced by creditors.
- 5) Increase the value of the company's shares.
- 6) Raise the company's image in the public eye.

The principles of Good corporate governance are:

- 1) Transparency (transparency)
- 2) Responsibility
- 3) Accountability
- 4) Professional (professional)
- 5) Fairness

According to the Corporate Governance in Indonesia (FCGI) Forum, there are several benefits that we can take from implementing good GCG, including:

- 1) Improve company performance through the creation of a better decision making process,





- improve company operational efficiency and further improve services to stakeholders.
- 2) Make it easier to obtain cheaper funding so that it can further enhance corporate value.
  - 3) Restoring investor confidence to invest in Indonesia.
  - 4) Shareholders will be satisfied with the company's performance because it will simultaneously increase shareholder value and dividends.

According to the Bassel Committee on Banking Supervision (BCBS) in Sari (2010 in Syukri and Chenny, 2018), the objectives and benefits of good corporate governance include the following:

- 1) Reducing agency costs, costs incurred due to abuse of authority, or in the form of supervision costs incurred to prevent a problem from arising.
- 2) Reducing capital costs arising from good management, which is able to minimize risk.
- 3) Maximizing the value of company shares, so as to improve the company's image in the eyes of the public in the long run.
- 4) Encouraging banking management in a professional, transparent, efficient and empowering functions and increasing the independence of the board of commissioners. Directors and GMS.
- 5) Encourage the board of commissioners, members of the board of directors, shareholders in making decisions and carrying out actions based on high morale and compliance with applicable laws.
- 6) Maintain the Going Concern of the company.

### Financial Performance

Profitability is the ability of a bank to generate profits, both from operational activities and those from non-operational activities. Profitability is one of the factors considered in assessing whether a bank is healthy or not other than capital, asset quality, management and liquidity (Hafidz and Safira, 2018).

Profitability in this study was measured by Return On Assets (ROA). According to Brigham and Ehrhardt (2005) in Praptiningsih (2009) ROA is the ratio of earnings before interest and taxes (EBIT) or net income divided by the book value of assets at the beginning of the fiscal year. Return on Assets measures the company's profits related to all disposal resources (shareholder capital plus short and long term borrowed funds). Therefore ROA is an excellent gauge in calculating the rate of return for shareholders. If the company has no debt, then the return on assets and return on equity will be the same. ROA measures how the profitability of a company is related to total assets. ROA provides an idea of how efficient management uses its assets to generate profits.

Based on Bank Indonesia Circular Letter No.13 / 24 / DPNP dated 25 October 2011 (Hafidz and Safira, 2018). Return On Assets can be calculated using the formula:

$$ROA = \frac{\text{Profit before tax}}{\text{Total Asetts}}$$

### Corporate Social Responsibility

Corporate Social Responsibility is a concept that every organization especially a company has a social responsibility to all its stakeholders. Where there are consumers, employees, shareholders, communities and the environment in all aspects of the company's operations that include economic, social and environmental aspects.

Porter and Kramer (2006) identified four reasons for companies to engage in social responsibility. First, the public in general and companies in particular, believe that the company has a moral obligation to engage in actions for the benefit of various parties, whether this action is beneficial. Both concepts of sustainability emphasize the need for company management from the environment and society. Third is the legitimacy to operate from the government, the community, to conduct business activities. The four socially responsible can increase the reputation of the company.

Corporate social responsibility disclosure is measured by CSRI (corporate social responsibility index) proxy based on CSR Disclosure indicators guided by the fourth generation Global Reporting Initiative (GRI) or called G4 with 91 CSR disclosure indexes. Information on Corporate Social Responsibility based on GRI 4 consists of 3 disclosure focuses, namely social, economic, and environmental (Heryanto & Julianto, 2017).

### Firm Value

Firm value is the investor's perception of the company, which is often associated with stock prices. High stock prices make the value of the company is also high. Firm value is commonly indicated by price to book value. A high price to book value will make the market believe in the company's future prospects. This is also the desire of the owners of the company, because high company values indicate the prosperity of shareholders is also high (Lidenberg and Ross, 1981).

Some company performance indicators that can be used to look at company performance such as market performance (Tobin's Q) are indicators to measure the Firm value, which shows a market performance that will be responded by investors. Tobin's Q value describes a condition of investment opportunities that the company has or the company's growth potential (Fiakas, 2005). Tobin's Q value is generated from the sum of the market value of shares (debt value of all debt) compared to the value of all capital placed in production assets (replacement value of all production capacity), then Tobin's Q can be used to measure the value of the company, namely in terms of potential value market of a company.

Tobin's Q in its application has been modified, as used in this study in reference to Fiakas, (2005); Bhagat and Bolton (2008) have been used consistently. Tobin's Q < 1 illustrates that the stock is undervalued. Management has failed in managing the company's assets, this shows the potential for low investment growth. Tobin's Q = 1 illustrates that

stocks are in average condition, meaning that management is stagnant in managing assets, which shows the potential for investment growth to not develop. Tobin's  $Q > 1$  illustrates that stocks in an overvalued condition means that management is successful in managing assets, this shows the potential for high investment growth.

### Prior Research

Previous research that can support this research is as follows: Safira & Saifi (2019) in his research entitled "The Effect of Corporate Social Responsibility (CSR) on Company Value and Financial Performance". The results of this study conclude that (1) Corporate Social Responsibility (CSR) is significantly significant in terms of the value of the business; (2) Corporate Social Responsibility (CSR) is significantly significant in terms of performance; and (3) the value of the destruction has a significant effect on the performance.

Adhiprasetya and Zulaikha (2019) in their research entitled "The Effect of Corporate Governance Perception Index on Company Value and Corporate Financial Performance". The results showed that the Corporate Governance Perception Index variable had no significant effect on firm value, but had a significant effect on the company's financial performance.

Mukhtaruddin et al. (2019) in his research entitled "Good Corporate Governance, Corporate

Social Responsibility, Firm Value, and Financial Performance as Moderating Variables". The results showed that (1) Good corporate governance has a positive effect that is not significant to the value of the company; (2) Corporate social responsibility has a significant negative impact on company value; and Financial performance has significantly strengthened the relationship between good corporate governance and corporate social responsibility on corporate value.

Wati et al. (2019) in his research entitled "The Role of CSR Disclosure and GCG Mechanisms on Financial Performance Against Company Value". The results showed that the company's financial performance had a significant effect on firm value. CSR disclosure is able to moderate the relationship between financial performance and firm value, but managerial ownership as a GCG mechanism is not able to moderate the relationship between performance and firm value. CSR can build a positive image of the company in the eyes of investors and the public, because by disclosing social information will attract investors and have an impact on increasing the value of the company.

### Thought Framework

Based on the theoretical foundation and previous studies, the researcher develops the research framework tested as shown in the following figure:

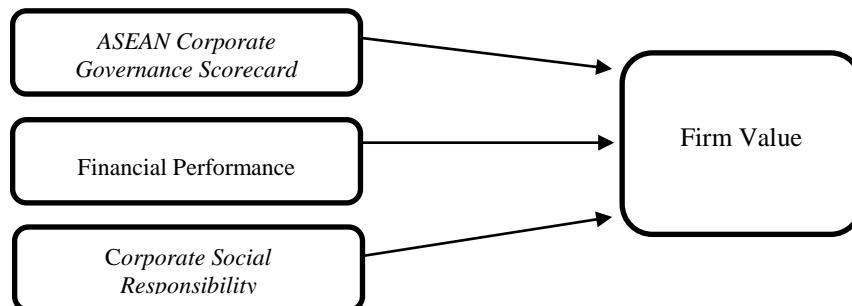


Figure 1.1 Framework for Thinking

### Hypothesis

The research hypotheses proposed are as follows:

Ha1: ASEAN Corporate Governance Scorecard has a positive effect on Firm Value

Ha2: Financial Performance has a positive effect on Firm Value

Ha3: Disclosure of corporate social responsibility has a positive effect on Firm Value

### RESEARCH METHOD

#### Types of research

The research used in this study is casual associative research (causal associative research). According to Sanusi (2011), associative-causal research is a research that seeks a relationship between two or more variables. The purpose of associative research is to look for relationships between one variable and another.

#### Definition of Variable Operations

Operational research variables on the ASEAN Corporate Governance Scorecard, Profitability, and Corporate Social Responsibility Disclosure of Firm Value can be summarized in the following table:



**Table 1.1 Operasionalisasi Variabel**

Variable Type	Operational definition	Measurement	Scale
<b>Dependent</b>			
Firm Value	Market-based company performance	Adjusted Tobin's Q	Ratio
<b>Independent</b>			
<i>ASEAN Corporate Governance Scorecard</i>	An initiative of the ACMF (ASEAN Capital Market Forum) to provide guidelines for the implementation of good corporate governance in ASEAN member countries	ASEAN Corporate Governance Scorecard Rating taken from research and assessment programs conducted by ACMF (ASEAN Capital Market Forum)	Score
Financial Performance	The ability of a bank to generate profits, both from operational activities and from non-operational activities.	ROA	Ratio
Disclosure of Corporate Social Responsibility	Mechanisms for an organization to voluntarily integrate environmental and social attention into its operations and interactions with stockholders, which exceeds organizational responsibility in the legal field.	$\frac{\sum Skor}{Skor Maks}$	Ratio

**Data Types and Sources**

The data used in conducting this research is secondary data, that is data obtained through intermediaries from both parties and certain media that support this research. The data used in this study are secondary data in the form of company financial statements which included 50 TOP ASEAN Corporate Governance Scorecards during the 2015-2017 period obtained from the Indonesia Stock Exchange website (www.idx.co.id) and the official website of each company the.

**Population and Research Samples**

The population in this study were all companies that included 50 TOP ASEAN Corporate Governance Scorecards during the 2015-2017 period. The sampling technique is using purposive sampling technique. According to Widyani (2010) the purposive sampling method is the selection of samples on the basis of the suitability of the characteristics of the sample with the specified sample selection criteria. The sample in this study were companies that included 50 TOP ASEAN Corporate Governance Scorecards during the 2015-2017 period that met predetermined research criteria. The sample criteria used in this study are:

- 1) Companies included in the TOP 50 ASEAN Corporate Governance Scorecards during the 2015-2017 period.
- 2) Publish audited financial statements for the period of 2015-2017.
- 3) Companies that use the rupiah value unit in their financial statements.

- 4) The company did not experience a loss during the study year.
- 5) Data owned by the company is complete and in accordance with the variables studied.

According to the criteria above, the number of samples of companies used were 27 companies over 3 periods, namely 2015, 2016 and 2017. Then the number of samples obtained was 27 companies x 3 periods = 81 data that will be used in this study.

**Data collection technique**

Data collection methods in this research are literature study and documentation methods. Literature study method by studying literature and reviewing a variety of literature literature such as various journals, articles and other literature books that support the research process. While the documentation method is the process of collecting data by recording documents related to this research.

**Analysis Method**

**Descriptive statistics**

Descriptive statistics in this study are used to provide a description of the character of the research variable using a frequency distribution table that shows the mode number, the range of scores and the standard of division

**Classic assumption test**

This research was conducted with a simple regression analysis. The use of simple regression analysis must be free from testing classic assumptions. For this reason, before a simple

regression analysis is required, classical assumptions must be tested first. Testing classic assumptions is done using normality test, multicollinearity test, heterokedasticity test and autocorrelation test.

### Hypothesis testing

In this study the authors used three independent variables and one dependent variable. The analytical method used to test hypotheses is the multiple regression method, which is regression used to find out how much influence the independent variable has on the dependent variable. Regression analysis using SPSS software version 25. The regression equation is as follows:  $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$

Where :

Y = Firm Value

$\alpha$  = constant or price Y if X = 0

$\beta$  = number or direction of the regression coefficient, which indicates an increase or decrease in the dependent variable based on the independent variable

X1 = ASEAN Corporate Governance Scorecard (ACGS)

X2 = Profitability

X3 = Disclosure of Corporate Social Responsibility

$\epsilon$  = level of disturbing error / error

In this study, the significance level ( $\alpha$ ) of 0.05 or 5% was used. To test whether the proposed hypothesis is accepted or rejected, a test of the research variables is carried out by simultaneously testing through the simultaneous significance test (F statistic test), which intends to explain the effect of the independent variable on the dependent variable. Meanwhile, to test each variable partially, it is carried out by means of an individual parameter significance test (statistical t test) which aims to find out whether the independent variable influences the dependent variable, and which of the dominant variables influences the dependent variable.

## RESEARCH RESULTS AND DISCUSSION

### Research Data Description

The following are descriptive statistical results about the research variables as follows:

Table 1.2 Descriptive statistical results

Variable	N	Min	Max	Mean	Std. Deviation
ASEAN CG Scorecard	81	65,44	96,17	79,86	6,935
Financial Performance	81	0,00	0,58	0,10	0,135
CSR	81	0,18	0,81	0,39	0,149
Firm Value	81	0,53	23,29	2,97	4,623

Source: Primary data processed (2020)

Based on Table 1.2 above, it can be presented descriptive statistical results about the research variables as follows: The average value of the ASEAN Corporate Governance Scorecard variable is 79.86% with a standard deviation value of 6.935%, this shows that the data used is highly fluctuating from in 2015 to 2017. The ASEAN Corporate Governance Scorecard variable ranges from the lowest value of 65.44%, namely PT Bank CIMB Niaga Tbk in 2017 to the highest value of 96.17%, namely PT Wijaya Karya (Persero) Tbk in 2015.

The average value of the Financial Performance Variable measured by Return on Assets (ROA) is 0.10 or 10%, with a standard deviation of 0.135 or 13.5%, which means the data used is highly fluctuating from 2015 to 2017. Profitability Variables ranging from the lowest value of 0.00 (0%), namely PT Bank CIMB Niaga Tbk in 2015 to the highest value of 0.58 (58%), namely PT Matahari Department Store Tbk in 2015. The average value of profitability was 0.10 indicates that for every Rp 1 of the funds invested by investors as share capital, will generate a net profit of 10%.

Corporate Social Responsibility Disclosure Variables have an average of 0.39 or 39% with a standard deviation value of 0.149 or 14.9%, this shows that the data used is highly fluctuating from 2015 to 2017. Corporate Social Responsibility Disclosure Variables range from the lowest value of 0.18 or 18%, namely PT Wijaya Karya (Persero) Tbk in 2017 up to the highest value of 0.81 or 81%, namely PT Tambang Batubara Bukit Asam (Persero) Tbk in 2016.

The average value of the Company Value Variable is 2.97 with a standard deviation value of 4.623, which means the data used is highly fluctuating from 2015 to 2017. The Company Value variable ranges from the lowest value of 0.53, namely PT Saratoga Investama Sedaya Tbk in 2017 up to the highest value of 23.29, namely the company PT Unilever Indonesia Tbk in 2017.

### Classic Assumption Test Normality test

Testing for normality using the Lilliefors test. Provisions in the error test are if the statistic L count <L table ( $\alpha = 0.05$ ), then the error data is normally



distributed. But if  $L_{count} > L_{table}$  ( $\alpha = 0.05$ ), then the data is not normally distributed.

Thus the overall results of the normality test calculation using the Lilliefors test can be seen in the summary in Table 1.3.

**Table 1.3 Normality Test Summary**

No	Estimation	n	L <sub>Count</sub>	L <sub>Table</sub>		Decision
				$\alpha = 0,05$	$\alpha = 0,01$	
1	Y atas X1	81	-0,1699	0,0984	0,1146	Normal
2	Y atas X2	81	-0,1015	0,0984	0,1146	Normal
3	Y atas X3	81	-0,1665	0,0984	0,1146	Normal

Source: Primary data processed (2020)

### Multicollinearity Test

Multicollinearity Test aims to test whether in a regression model found a correlation between independent variables. A good regression model should not occur correlation between independent variables (Ghozali, 2010). Detection of the presence or absence of multicollinearity in this study by (1) analyzing the correlation matrix between independent variables, if there is a high enough correlation between independent variables (generally above 0.90), then this is an indication of multicollinearity, (2) Looking at the value tolerance and the value of the variance inflation factor, a regression model that is free from multicollinearity problems if it has a tolerance value of more than 0.10 or 10% and the

value of the variance inflation factor (VIF) is less than 10. The results of accounting tolerance according to Table 1.4. shows that there are no independent variables that have a tolerance value of less than 10%; all tolerance values are more than 10%; which means there is no correlation between variables. The results of the calculation of the variance inflation factor (VIF) value also show the same thing, there are no independent variables that have a VIF value of more than 10; the values of the variance inflation factor (VIF) are all less than 10. The conclusion is that there is no multicollinearity between independent variables in the regression model based on the tolerance value test.

**Table 1.4 Multicollinearity Test Summary**

Variable	Collinearity Statistics	
	Tolerance	VIF
ASEAN CG Scorecard	0,938	1,067
Profitability	0,952	1,051
CSR	0,985	1,016

Source: Primary data processed (2020)

### Autocorrelation Test

Autocorrelation test is used to determine whether there is a correlation between a fault in a certain period with a mistake in the previous period. A good regression model is a regression that is free

from autocorrelation. Autocorrelation test can be done by testing the Durbin-Watson (DW). The autocorrelation test results can be seen in Table 1.5 below:

**Table 1.5 Autocorrelation test Results**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,795 <sup>a</sup>	0,632	0,618	2,859	1,960

Source: Primary data processed (2020)

Based on SPSS output, the Durbin Watson statistical value is 1,960. While from the Durbin Watson table with  $n = 81$  and  $k = 3$ , the  $d$  table is obtained ie  $d_l$  (outer boundary) = 1.563 and  $d_u$  (inner limit) = 1.716 with a significance level of 5%,  $4 - d_u = 2.284$ ; and  $4 - d_l = 2,437$ ; then from accounting it is concluded that the DW-test is located in the test area. Referring to Ghozali (2010), the regression model in this study is free from the autocorrelation problem

because the Durbin Watson value is between  $d_u$  and  $4 - d_u$ .

### Heteroscedasticity Test

Heterokedastisitas test is used to determine whether or not there is a deviation from the classic assumption of heterokedasticity, that is, the variance of the residual inequality for all observations in the regression model (Priyatno, 2009). Detection of heterokedastisitas are: 1) Probability value  $> 0.05$

means free from heterokedastisitas. 2) Probability value <0.05 means it is exposed to heterokedasticity.

The test results using the Spearman rank test can be seen in the following Table 1.6:

**Table 1.6 Heterokedastisity test Results**

			X1	X2	X3
Spearman's rho	Absres	Correlation Coefficient	-0,131	0,552	0,137
		Sig. (2-tailed)	0,243	0,098	0,223
		N	81	81	81

Source: Primary data processed (2020)

Spearman rank test results in the table above shows the value of the probability of significance for the variable profitability, capital structure, and sales growth of 0.243; 0.098; and 0.223. Because the probability value of significance for the ASEAN Corporate Governance Scorecard, Financial Performance, and CSR Disclosures is greater than 0.05, it can be concluded that the data are free from heterokedastisitas.

**Hypothesis test**  
**Multiple regression analysis**

Multiple regression analysis is used to get the regression coefficient which will determine whether the hypothesis made will be accepted or rejected. By using multiple linear regression methods the following results are obtained:

**Table 1.7 Regression analysis Results**

Model	B	T <sub>count</sub>	Sig	T <sub>table</sub>	adj R <sup>2</sup>	F <sub>count</sub>	Sig	
1	(Constant)	-3,899		1,665	0,618	44,053	0,000	
	X1	0,063	1,326					0,189
	X2	27,662	11,376					0,000
	X3	-2,566	-1,185					0,240

Source: Primary data processed (2020)

Based on the results of the regression tests above, an equation can be formed as follows:  $Y = -3,899 + 0,063X_1 + 27,662X_2 - 2,566X_3 + \epsilon$

**Determination Coefficient Test (R<sup>2</sup>)**

The coefficient of determination shown by the adjusted R Square value. The adjusted R-Square value of the regression model is used to find out how much the ability of the independent variable in explaining the dependent variable. From Table 1.7 it is known that the adjusted R square value is 0.618. This means that 61.8% of the company's value can be explained by variations in independent variables namely the ASEAN Corporate Governance Scorecard, Financial Performance, and CSR Disclosures, the remaining 38.2% (100% - 61.8%) is explained by other causes in outside the model.

**Simultaneous Significance Test (Statistical Test F)**

Simultaneous significance test (Test F) is used to show whether all the independent variables entered in the model have an influence together on the dependent variable. (Ghozali, 2009). If the analysis using the F test shows that all the independent variables simultaneously are an explanatory significance of the dependent variable.

From the Anova test or the F test in Table 1.7 above, the F count value is 44,053 with a significance

probability that indicates 0,000. Test probability values are much smaller than  $\alpha = 0.05$ . This shows that together (simultaneously) the value of the company can be influenced by the ASEAN Corporate Governance Scorecard variable, Financial Performance, and CSR Disclosure.

**Significance Test of Individual Parameters (t Test)**  
**Effect of the ASEAN Corporate Governance Scorecard on firm value**

Based on the accounting results in table 1.7 above shows that the ASEAN Corporate Governance Scorecard variable has no effect on firm value, which can be seen from the comparison between ttable and tcount, ie ttable is greater than tcount, with a ttable value of 1.665 and tcount 1.326 and a significance level located above 0.05. Thus Ha2 rejected.

**Effect of Financial Performance on firm value**

Based on the accounting results in table 1.7 above shows that the financial performance variable has a positive effect on firm value, which can be seen from the comparison between ttable and tcount, ie ttable is smaller than tcount, with ttable value 1,665 and tcount 11,376 and the level of significance is much smaller than 0.5. Thus Ha2 received.



### **Effect of corporate social responsibility disclosure on firm value**

Based on the accounting results in table 1.7 above shows that the disclosure variable Corporate Social Responsibility does not affect the firm value, which can be seen from the comparison between  $t_{table}$  and  $t_{count}$ , ie  $t_{table}$  is greater than  $t_{count}$ , with a  $t_{table}$  value of 1,665 and  $t_{count}$  -1,185 and the level of significance is far greater than 0.05. Thus  $H_{a3}$  was rejected.

## **DISCUSSION**

### **Effect of the ASEAN Corporate Governance Scorecard on firm value**

From the results of the study note that the ASEAN Corporate Governance Scorecard variable does not affect the firm value in a positive direction. So it can be stated that the higher the ACGS score the higher the company value. The ineffectiveness of the ASEAN Corporate Governance Scorecard on firm value is due to the fact that the implementation of good corporate governance is felt by companies going public as a demand for existing regulations, not as an important requirement for companies, so there is a lack of awareness of these companies to implementing good corporate governance.

In addition, companies that go public in Indonesia only implemented good corporate governance after the economic crisis that hit Indonesia in 1997, whereas the implementation of good corporate governance cannot be done directly or in the short term, because implementing good corporate governance requires time, planning, and information about characteristics, culture, and relationships between company organs. For example, there are companies who think that transparency means disclosing important company secrets to outsiders, which will threaten the company's presence in selling its products and services.

The results of this study support the findings of Adhiprasetya & Zulaikha (2019), which shows that the ranking of the Corporate Governance Perception Index (CGPI) has no significant effect on firm value. However, the results of this study are not in line with research conducted by Halim & Christiawan (2017) which states that the Corporate Governance Perception Index (CGPI) has a significant impact on company performance.

### **Effect of financial performance on firm value**

From the results of the study note that financial performance as measured by Return on Assets affect the firm value. Significant influence between profitability on firm value due to the large profitability of a company becomes a reference point for investors in valuing a company. While the positive effect between the level of profitability on the value of the company is due to the higher profitability of a company, it shows a good prospect

of the company so that investors will respond positively to these signals and the value of the company will increase.

Companies need to pay attention and continue to improve ROA by increasing profits. ROA results state that the company produces in favorable conditions, so if the ROA is high it will give a positive signal to investors. This is an attraction for investors to own company shares. High stock demand will directly increase the value of the company. Thus financial performance has a positive and significant effect on firm value.

These results support research conducted by Leonardo & Khairunnisa (2019), and Susanti, et al (2019) which states that financial performance has a significant positive effect on firm value. However, the results of this study are not in line with research conducted by Lutfia, et al (2019), Lastanti & Salim (2019) found that financial performance has no effect on firm value.

### **Effect of corporate social responsibility disclosure on firm value**

From the results of the study note that the variable Corporate Social Responsibility disclosure does not affect the firm value with a negative direction. The absence of disclosure of Corporate Social Responsibility to the firm value, due to the disclosure of Corporate Social Responsibility in companies that are included in the 50 TOP ASEAN Corporate Governance Scorecard tends to be stable, while the value of the company as measured by Tobin's Q indicates an increase and decrease. This shows that the increase or decrease in the value of the company is not influenced by the value of CSR. Shareholders do not pay much attention to CSR activities carried out by the company. Another cause is that in Indonesia CSR activities are still new, this is evidenced by the Law on CSR recently issued by the government in 2007, namely Law No. 40 of 2007 Article 74 concerning Social and Environmental Responsibility of Limited Liability Companies so that CSR reporting has not been respected by investors.

The results of this study are supported by research by Sumantri & Andini (2019) finding that disclosure of Corporate Social Responsibility has no effect on firm value. However, the results of this study are not in line with research conducted by Mukhtaruddin et al. (2019), and Safira & Saifi (2019) found that the disclosure of Corporate Social Responsibility affects the firm value.

## **CONCLUSION**

Based on the results of the analysis and discussion carried out, the following conclusions can be drawn: 1) The ASEAN Corporate Governance Scorecard variable does not affect the firm value in a positive direction; 2) Financial Performance variable has a positive effect on firm value; 3) Variable



disclosure of Corporate Social Responsibility does not affect the firm value with a negative direction.

### Limitation

This research is inseparable from the shortcomings and limitations. Limitations in this study are as follows: 1) Companies that are sampled in this study have not included all the countries in ASEAN that are included in the ASEAN scorecard measurement, so they do not reflect the overall performance of ASEAN companies; 2) The observation period is limited during 2015-2017.

### Suggestions

As explained earlier that this study contains limitations. But the results of this study can at least motivate further research. Considering the existing limitations, it is expected that future research will improve the following factors: 1) In subsequent studies, the following research will include all countries included in the ASEAN Corporate Governance Scorecard, namely Indonesia, Malaysia, the Philippines, Thailand, and Vietnam; 2) To obtain better research results, further research can extend the research period.

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# ROLE OF INDEPENDENT DIRECTOR IN CORPORATE GOVERNANCE

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## ABSTRACT

*A company is the common platform of various stakeholders, such as customers, employees, investors, shareholders etc. It is an instrument that can attract huge capital for doing business. Every transaction in a company should be fair and transparent to its stakeholders. A company having good Corporate Governance and an effective Board of Directors attract investors and ensure investment. Independence of the Board is critical to ensure that the board fulfils its role objectively and holds the management accountable to the company. The practice across jurisdictions indicates that the presence of Independent Director is answer to that. The present write up delves into the current scenario in Indian Corporate Sector and examine the role of Independent Director in Corporate Governance, in particular. As a system arrangement in corporate governance, implementation of the independent director will help improve structure of corporate governance, maintain interests of all stockholders, and protect rights and interests of small-and-medium size of investors. There exist such many issues as insufficient information of independent directors, weak independence, low enthusiasm, and shortage of talents in the practice of the independent director system in India. Therefore, we should strengthen and optimize the independent director system with case study Satyam case of unethical conduct and fake audit.*

**KEY WORDS:-** Independent Director, Corporate Governance, CEO, Board of Directors, Stakeholder, minority, company, voting.

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## INTRODUCTION

The board provides "balance" between the key managers and the shareholders. The law imposes fiduciary duties on the directors. The Directors have to perform the duty of care (due diligence in decisions) and the duty of loyalty (to the shareholders). Their conducts add business judgment will be judged by courts accordingly, Boards of directors are vital for the success of companies. In today's world, nobody can afford the "luxury of unilateral mistakes, sleepy companies and isolationism". "If companies cannot compete, they perish". Regarding the powers of the board, the American Bar Associations Model Business Corporation Act states that "all corporate powers shall be exercised by or under the authority of, and the business and affairs of the corporation managed under the direction of, its board of directors, subject to any limitation set forth in the articles of incorporation. In other words, authority resides in the board of directors as the representatives of the stockholders. The board delegates authority to

management to implement the company's mission". Solomon and Solomon (2004) felt that, for a company to be successful, it must be well governed. A well-functioning and effective board of directors is sought by every ambitious company. "A company's board is its heart and as a heart it needs to be healthy, fit and carefully nurtured for the company to run effectively. The advantages of having a strategic board are compelling. It allows a company to gain valuable expertise, enables strategic relationships, and facilitates financing, serves as a think tank for strategic thinking, establishes accountability, attracts the best employees, facilitates exposure to new ideas, balances stockholders interests, helps to avoid mistakes and proactively manages change. The smaller the board, the greater the director involvement. An independent director is an independent person appointed to the board to ensure that his view is not internally focused. Independent directors are taking a higher profile role than ever before in balancing shareholder and management interest. Since the 1990's more and more professional non-executive directors (NEDs) have come into



existence, Chief executives are beginning to realize the importance of the role of these highly experienced individuals. An independent board of directors in public listed companies is seen as an integral element of a country's corporate governance norms. Board independence has taken on a pivotal status in corporate governance that it has become almost indispensable. Consequently, governance reform in recent years has increasingly pinned hope as well as responsibility on independent directors to enable higher standards of governance. Cadbury Committee Report has led the development of corporate governance norms in various countries such as Canada, Hong Kong, South Africa, Australia, France, Japan, Malaysia, and India, just to name a few. Similarly, the U.S. requirement of independent directors has also resulted in readjustment of corporate governance norms in various countries. This was a reaction primarily to ensure the prevention of corporate governance scandals such as those involving Enron and WorldCom in their respective countries.

The section 149(4) of the Companies Act, 2013 states that every listed public company must have at least one-third of the total number of directors as Independent Directors (Singh 2015)<sup>1</sup>. The increase in the number of minority shareholders has increased the need for the Independent directors. The corporate governance has went over many changes in the recent years and the concept of Independent Directors is one of the most important changes among those. In 2009, the role of Independent Directors took a huge dent both in India and overseas after the Satyam scam. Large number of Independent Directors resigned the post which highlighted the powerless state of the Independent directors in the Indian Corporate Governance. The position of Independent Directors in a corporate governance dominated by promoters and controllers was very weak. According to the definition by International Finance Corporation<sup>2</sup> Independent directors must fulfill certain minimum requirements. The standard must be maintained in appointing the Independent directors to ensure integrity of decision making. The Independent directors must be unhampered by the circumstances to ensure their decision making is neutral.

<sup>1</sup> Avtar Singh, Company Law, Eastern Book Company, 2016

<sup>2</sup> (n.d.). Indicative Independent Director Definition - IFC. Retrieved June 1, 2018, from <https://www.ifc.org/wps/wcm/connect/9d10d4804091a9a7b3f4b3cdd0ee9c33/Independent+Director+IFC+Definition+2012.pdf?MOD=AJPERES>

## HYPOTHESIS

The Independent Directors are not equipped with enough powers to protect the rights of minority shareholders.

## REVIEW OF LITERATURE

The board Independence is thought to be an important step in ensuring the better functioning of the Independent Directors in Corporate Governance (Gupta). The Liberalisation Privatisation and Globalisation of 1991 played a vital role in the emergence of Independent directors in India(Koshy).The presence of Independent directors improves the quality of Corporate Governance(Lawrence and Stapledon).The independent director has to make the declaration of his independence at first meeting of the board and subsequently during every financial year the company and the company and the independent director must abide by the provisions of Schedule IV(Mittal).Thus, the Independent Director cannot be held accountable for matters outside his purview and knowledge(Clarke).Clause 49 provides that the Independent Director of a Company shall hold a meeting by only inviting independent directors(Singh 2015).The recent exposure of high-profile cases of fraud in India shows that the Independent Directors are taking interest in reviewing fraud risk management framework which was drafted to mitigate the risk of fraud(Ringe).The wealth maximisation has become the key corporate objective of the shareholders, legislators all over the world have understood the role the independent directors can play in protecting the rights of minority shareholders(Iwu-Egwuonwu 2010).Companies may bear the fruit of independent directors by having a same person as an Independent directors of all those companies, it may help in smooth functioning of all those companies without conflicts(Ferrarini).

## METHODOLOGY

Narrative and Descriptive methodologies are used by the researcher for the study and based on doctrinal sources.

## SOURCES OF STUDY

Only Secondary sources are referred for this research paper Secondary sources are in the form of Books and Articles.

## POWER AND DUTIES OF INDEPENDENT DIRECTORS

The concept of "Invisible hand"(Smith, Adam) proposed by Adam Smith cannot be applied to the work of Independent Directors as their main role is in making sure that they use their utmost powers for the welfare of the company and the



minority shareholders. The Independent Director is required to hold a very neutral view and should not have any interest in the company to function effectively and in the same time looking out for the welfare of the company. The Liberalisation Privatisation and Globalisation of 1991 played a vital role in the emergence of Independent directors in India<sup>3</sup>(Koshy).The presence of Independent directors improves the quality of Corporate Governance(Lawrence and Stapledon)<sup>4</sup>. The board Independence is thought to be an important step insuring the better functioning of the Independent Directors in Corporate Governance(Gupta)<sup>5</sup>. Thus, the need for Independent directors has increased to maintain the neutral functioning of the company. The Companies Act, 2013 has provisions for the Independent Directors. Section 149(4) of the Companies Act, 2013 talks about the Independent Directors. Every listed Public Company is required to have at least one-third of its total number of directors as Independent Directors. The central government may prescribe the minimum number of independent directors in class or classes of public companies(Arindam). The independent director, must be in the opinion of the board, a person of integrity, must possess relevant expertise and experience as per section 149(4)(a), he should not be a promoter of the company or of the holding or subsidiary company. He should have no pecuniary relations with the company and he should also not have relatives who have pecuniary relationships with the company. The independent director has to make the declaration of his independence at first meeting of the board and subsequently during every financial year the company and the independent director must abide by the provisions of Schedule IV(Mittal).

## THE ROLE OF INDEPENDENT DIRECTORS

The role of an independent director is of great importance to the company and its stakeholders. Schedule IV of the Act puts down certain functions for the Independent Directors like protecting the

interest of stakeholders mainly the minority holders, bringing together and harmonising the conflicting interest of the minority shareholders, analysing the management's performance, Resolving in situations where the management and shareholders are in conflict. The Independent Directors must keep themselves updated about the position, activities of the company and the external environment in which it operates. They should not reveal confidential information of the company unless approved by board or permitted by Law. They must actively participate in the committees of the board as Chairpersons or members. They should keep on refreshing their skills, knowledge and familiarity with the company, regularly attending the General Meeting of the company, among many other duties. The familiarization programmes have been introduced whereby the directors would be know with their role and functions in the company(Khanna)<sup>6</sup>. Clause 49 provides that the Independent Director of a Company shall hold a meeting by only inviting independent directors(Singh 2015). Analysing the performance of the other directors, assessing the quality and quantity of Much as Clause 49 does not specify to whom the independent directors owe their allegiance, it also does not contemplate any specific role for them. There is no separate task or function assigned to independent directors. The most prominent among such functions in the context of the majority-minority agency problem could have been for independent directors to consider and approve related party transactions that involve self dealing by controlling shareholders. But, there is nothing of the kind envisaged. Independent directors are treated like any other director for purposes of role and decision making and there is neither a specific privilege conferred nor a specific duty or function imposed on independent directors, in either case specifically by law, on the board.

## WHO IS AN INDEPENDENT DIRECTOR?

An independent director is an independent person appointed to the board to ensure that his view is not internally focused. The actual role varies among the most common roles such as: part time chairman, confidant of the chief executive, expert with specialist knowledge, a community conscience, a contact maker, conferrer of organization status. The actual role performed by the independent directors

<sup>3</sup> (n.d.). India Business Law Journal - Nishith Desai Associates. Retrieved June 1, 2018, from [http://www.nishithdesai.com/fileadmin/user\\_upload/pdfs/Research%20Articles/New\\_directions.pdf](http://www.nishithdesai.com/fileadmin/user_upload/pdfs/Research%20Articles/New_directions.pdf)

<sup>4</sup> (n.d.). Do Independent Directors Add Value? (1999) by Jeffrey Lawrence and .... Retrieved June 1, 2018, from

[https://law.unimelb.edu.au/data/assets/pdf\\_file/002/0/1710254/143\\_IndependentDirectorsReport2.pdf](https://law.unimelb.edu.au/data/assets/pdf_file/002/0/1710254/143_IndependentDirectorsReport2.pdf)

<sup>5</sup> (n.d.). Independency of Independent Directors in Corporate Governance - ICSI. Retrieved June 1, 2018, from (M. Gupta)

<sup>6</sup> (n.d.). the role of independent directors in controlled firms in india - Manupatra. Retrieved June 1, 2018, from

<http://docs.manupatra.in/newslines/articles/Upload/8BC687F7-9B76-4342-A173-28F598A94BE9.pdf>



depends upon background and experience, company situation, current composition of the board, relations between the chairman and independent directors, board leadership structure, recruitment process and training and development.

### **CLAUSE 49 AND INDEPENDENT DIRECTORS**

It is necessary at this stage to examine the specific provisions in Clause 49 relating to independent directors.

#### **BASIC REQUIREMENT**

Boards of listed companies are required to have an optimum combination of executive and non-executive directors, with at least half of the board comprising of nonexecutive directors. As regards the minimum number of independent directors, that varies depending on the identity of the chairman of the board. Where the chairman holds an executive position in the company, at least one half of the board should consist of independent directors, and where the chairman is in a non-executive capacity, at least one third of the board should consist of independent directors. Another condition was imposed in 2008 to determine the number of independent directors. Where the nonexecutive chairman is a promoter or a person “related to any promoter” of the company, at least one half of the board should consist of independent directors. The insertion of this condition was necessitated due to the then prevailing practice. Chairmen of companies retained themselves in a non-executive capacity, but were often relatives of the promoters (in case of individuals) or controllers of parent/holding companies (where promoters were other companies). For example, in family-owned companies, the patriarch or matriarch of the family would be the non-executive chairman, while the day to-day management (in executive capacity) would be carried out by persons from the subsequent generations such as children and grand-children. Promoter-related chairmen were thus able to exert significant influence. With this amendment to Clause 49, chairmen are required to be truly independent to justify the composition of the board with one-third being independent rather than one half.

#### **INDEPENDENT DIRECTORS IN INDIAN COMPANIES**

All the codes of corporate governance deal with who should and who should not be on the corporate board. Any corporate unit can run and control its operations properly if the balance of the directors is proper. Every person in the board should be clear about his role and responsibility. For good governance, it is very important to have clear direction, i.e., what is the role of the board and

management and of the executives? There should be a proper mix of executive and non-executive directors in the board. This has the advantage of combining the executives’ in-depth knowledge of the day-to-day affairs of the company with the wider experience of non-executive directors. Almost all the codes play an important role in selection of the board member, whether executive or nonexecutive. They should be selected based on their merit and for the greater good of the corporate unit. The Combined Code (1998) states: “The board should include non-executives of sufficient caliber and number for their views to carry significant weight in the board’s decisions,” According to this Committee, independent non-executive directors continue to be defined as those non-executive directors that are, “Independent of management and free from any business or other relationship which could materially interfere with the exercise of their independent judgment.” For good governance, it is very important to maintain an independent element in the board. All the codes relating to corporate governance provide clear guidelines about the proportion of the board to be maintained as independent. In the UK, it is recommended that non-executive directors should comprise not less than one-third of the board size and that the majority of the non-executive directors should be independent.

#### **HOW INDEPENDENT ARE INDEPENDENT DIRECTORS IN INDIA**

An independent director is expected to act as watch dog of the board and protect the interest of shareholders. Since they are handpicked by the promoters himself so they prefer to be a friend of the promoters rather than be the watch dog of the board. Though independent director is paid by the company, it must be borne in mind that the company is not only owned by its promoters but all share holders so they are supposed to represent the interest of the minority shareholders. There are circumstances where independent directors are not independent, which broadly includes:-

- their selection procedure is not age limit.
- no specific qualification is required
- no right to interfere in the day-to-day operations
- no time limit for replacement of an independent director

Independent directors are still the only hope to instill discipline in the murky world of corporate finance, provided their independence is not being compromised. If they are no more independent then their appointment in a company will be meaningless. This position deserves to be corrected by empowering SEBI and the Indian government.



### **(a) Selection procedure**

A lot of emphasis is placed on the “independence” of independent directors their selection is still in the hands of owners of the company. No process of selection has been prescribed for the independent directors, as they are directly handpicked by the promoters. Promoters in control may take decisions that are not in the interest of small shareholders, an independent director must keep in mind the interest of all stakeholders. Such procedure for their selection raises question on their independence at the board. They can not be as independent as they are expected to be, if they are going to be appointed by the owners. This procedure has to be changed for the independence of directors. As long as they are appointed by management, the concept of independent directors is a myth, for truly independent directors, they have to be nominated by the SEBI which is a regulatory authority. If they have a right to regulate, then surely they have a right to even suggest the appointment of directors<sup>7</sup>.

### **(b) No age limit**

There is no age limit has been prescribed under Companies Act, 1956 and by the SEBI. According to Indian companies Act a minor can become a director since no age limit is prescribed. This point must be rethink as a person who is under 18, as surely cannot acquire enough experience to become an independent director of a company<sup>8</sup>. It's not the quantity of Independent Directors but the quality of Independent directors that make difference. There must be an age limit which can justify the position of an independent director.

### **(c) No specific qualification is required**

There is need to focus on the quality of independent directors who are going to be appointed. They should be qualified enough so that they can ask right questions at the right time when they are at board. The most important requirement is his ability to stand up for minority shareholders, who are not represented on company boards. They need to be sound in judgment with an inquiring mind. Clause 49 of the Listing Agreement of the stock exchanges and the Companies Bill, 2008 introduced in Lok Sabha's last session does not prescribe the minimum qualification or experience essential. Presence of independent director on the board makes sense only if they are well-educated, can add value to the company, and represent minority shareholders'

<sup>7</sup> Pearce II, J.A, and Zahra S.A. (1991), The relative power of CEOs and Boards of directors, Associations with Corporate Performance Strategic Management Journal 12

<sup>8</sup> [www.vccircle.com/500/news/the-legal-implications-rajus-confession](http://www.vccircle.com/500/news/the-legal-implications-rajus-confession)

interests. The government and SEBI must review the qualification for independent directors.

### **(d) No right to interfere in the day-to-day operations**

An Independent director has no right to interfere in the day-to-day operations of company. They have right to intervene in any misgivings or misdeeds. They are supposed to support the management in getting the delivery of what the objectives of the company are to its shareholders. If a director can not get into a company's day-to-day operations, he cannot understand how it is governed and will not be in the position to fulfill his responsibilities. There is no separate law under which an independent director operates; he has no legal protection from the management so that he can raise his voice fearlessly. For the involvement of independent director in day-to-days operations of company they must be given authority so that they can intervene in the day-to-day operations of company and may be able to raise their voice.

### **(e) No time limit for replacement of an independent director**

There is no guideline prescribing a time limit for replacement of an independent director in case there is a resignation or removal or death of an existing one and promoters are taking a plea that they have not been able to find a replacement, which could stretch for indefinite period. The fees or remuneration of an independent director has grown so substantially in the last three years that an individual is often tempted to have an extended stay in the organization. Most of these directors would go by the decision of the promoters of the company without examining the details of company<sup>9</sup>. To retain the independence of director there is need to rotate such directors periodically or by any other method whereby the independence of independent director is secured.

## **EXECUTIVE DIRECTORS VS. INDEPENDENT DIRECTORS**

Empirical evidence on the association between outside independent directors and firm performance is mixed. Some studies have found that having more outside independent directors on the board improves firm performance (Barnhart et al. 1994; Daily and Dalton, 1992; Schellenger et al, 1989) while other studies have not found a link between outside independent directors and improved firm performance (Hermalin and Weisbach, 1991; Fosberg, 1989; Molz, 1988). However, other empirical evidence does suggest that outside independent directors do play an important role of shareholder advocate. Shareholders benefit more when outside independent directors have control of

<sup>9</sup> [www.uslaw.com/law\\_blogs/?item=342048](http://www.uslaw.com/law_blogs/?item=342048)



the board in tender offers for bidders (Byrd and Hickman, 1992), Beasley (1996) found that outside independent directors reduce the likelihood of financial statement fraud." Bhagat and Black (2007) opined that Enron (with eleven independent directors on its 14-member board) could not prevent wealth destruction. As such, highly independent boards may not be justified, A board should contain a mix of inside, independent, and affiliated directors. Inside directors are conflicted, but well-informed whereas, the independent directors are relatively ignorant about the company. Han and Wang (2004) investigated the relationship between board structure and firm performance using a sample of 490 publicly listed, firms in China. They found significant relationship between firm performance and three characteristics: the rewards to directors, the stock holdings of directors and the existence of independent directors Effect of Independent Directors on Firm Performance: Choi, Park and Yoo (2005) examined the relationship between board independence and firm performance for South Korea and found that the effects of independent outside directors on firm performance are strongly positive. Huang, Hsu, Khan and Yu (2003) examined the stock market reaction to the announcement of outside director appointments in Taiwan. The empirical findings indicate that there exists a significantly positive reaction to the announcements. The appointments of outside directors appear to be more beneficial for a country with poor corporate governance mechanisms. Panasian, Prevost and Bhabra (2004), investigated the impact of the Dey Committee guidelines that boards in Canada comprise a majority of independent directors. They found evidence that adoption of this recommendation positively affected performance, not only for firms that became compliant, but also for those firms that were always compliant and increased their proportion of outsiders on the board. According to Bhagat and Blade (1999), there is no convincing evidence that greater board independence correlates with greater firm profitability. Brown and Caylor (2004) created a broad measure of corporate governance, Gov-Score, a composite measure of 51 factors encompassing eight corporate governance categories: audit, board of directors, charter/ bylaws, director education, executive and director compensation, ownership, progressive practices, and state of incorporation. They found that better-governed firms are relatively more profitable, and pay out more cash to their shareholders. Block (1999) stated that the importance of outside directors is widely debated. Bhagat, Brickley, and Coles (1987); Fama (1980); Fama and Jensen (1983); Gibbs (1993) and others argue that outside directors promote the interest of shareholders. However, others argue that the reverse is true. Their study indicated that the announcement of the

appointment of an outside director (up to a critical mass) is still viewed as supportive of stockholder interests and likely to produce positive abnormal returns.

## INDEPENDENT DIRECTORS AND THE COMPANY PERFORMANCE

The Board has two types of director namely executive and non-executive. Executive directors are responsible for the day-to-day management of the company. They have the direct responsibility for the aspects such as finance and marketing. They help to formulate and implement the corporate strategy. The key strength are the specialized, expertise and wealth of knowledge that they bring to the business. They are full-time employees of the company and should have defined roles and responsibilities. Executive directors are the subordinates or the CEO; they are not in a strong position to monitor or discipline the CEO. It is important to have a mechanism to monitor the actions of the CEO and the executive director to ensure that they pursue shareholder interest. Cadbury (1992) identifies the monitoring role of non executive directors as their key responsibility. Dare (1993) maintains that non-executive directors are effective monitors when they question the company strategy and ask awkward questions. In additional, they are able to provide independent judgment when dealing with the executive directors in areas such as pay awards, executive director appointments and dismissals. Effective monitoring requires that the non-executive directors are independent of the executive director who is a retired ex-director or who works for a firm that provides services to the company, and may be perceived as less than wholly independent, A non-executive director's independence may increase with the passage of time. But this is subject to the independent directors making conscious efforts to contribute to the board process. Duality and performance: This occurs when one individual holds both the positions, namely, CEO & chairman, The CEO is the full time post and has the responsibility for day-to-day running of the company obliging implementing the strategy, and is responsible for the company's performance. The post of the chairman is part-time. The Chairman's main responsibility is to ensure that the board works effectively; hence the role involves the monitoring and evaluating the performance of the executive directors involving the CEO. According to the Cadbury report, the chairman has the responsibility for looking after the board room affairs, and ensuring that the non-executive directors have the relevant information for the board meetings, as also other company information. The Cadbury committee recommended that the posts of CEO & chairman should be separated. Independent non-executive directors are likely to provide sound opinions on



proposals and to become more effective decision monitors and likely to promote the interest of the shareholder

### **LEGAL RESPONSIBILITIES OF INDEPENDENT DIRECTORS**

According to the law, the independent director has the same responsibilities and liabilities as any other director.

**Civil Liability:** The duties of a director are to act honestly and in good faith in the best interests of the company. These liabilities apply to independent directors as well as to the executive director.

**Criminal Liability:** The criminal liability depends on the nature of the offence. Some of the requirements under the law constitute, in their non-performance or performance, a criminal offence, and attract the liability. Proof of any knowledge and or complicity is not required. The offence basically requires proof of failure to exercise the due care (negligence) or of dishonesty. The liability of the independent director depends upon the level of involvement and knowledge. Thus the independent director is more liable when the necessary step to avoid a breach of the criminal code has not been taken.

### **LIABILITIES INDEPENDENT DIRECTORS**

Wrongful disclosure by the chairman and members of the audit committee in company's annual report should attract: disqualification and penalties. If the non-executive director had the knowledge of unlawful acts by the management or the board and fails to act according to the law, then the said director should be made legally liable for such ignorance. The different liabilities of the executive directors and non-executive or independent counterpart should be considered. The persons considered responsible for the contravention committed by the company are: (i) The managing director; (ii) Executive or whole-time director; (iii) Managers; (iv) The company secretary; (v) any person in accordance with whose instructions the board is accustomed to act; (vi) any person who has been entrusted and charged by the board to be an officer in default subject to his or her consent. Non-executive directors are far less liable for the ignorance of the provisions in the Companies Act than their executive counterparts.

### **LIMITATIONS OF INDEPENDENT DIRECTORS**

We discuss some of the major limitations of the role and functions of independent directors in particular and other categories of directors in general. Let us mention at the outset that the limitations arise on account of two sources; one is an internal source;

personality factors of an individual director; while the second is the external source; ownership of a firm; board composition and structure; board process; board strategies; among others. It is pertinent to note that the mere presence of independent directors on a company's board is not enough. We have significant evidence world-wide of corporate failures and poor board performance even with adequate number of experienced independent directors. It is not, therefore, their mere presence on the board but the value they add to the board process which will ensure effective corporate governance.

### **PERFORMANCE MEASUREMENT OF INDEPENDENT DIRECTORS**

The output of the teams and individuals are measured. In most of the organizations, measurement is not done at the board level. Most of the organizations don't know what is to be measured at the board level. Moreover, the director's efforts yield results that are spread over the years, and are not limited to the current year itself. It may be so because directors do not want to expose themselves to the appraisal. The criteria for measuring efforts or inputs of the director should be measured by soft method (not rigorously) to reveal to the independent director how his contribution is being perceived. It has been suggested that the independent directors should appraise themselves with the use of a matrix that shows the effectiveness in each role against the importance of that role. To have the effective use of self-appraisal, the independent director should discuss with the board members as to what are their important roles. The matrix can be used to assess skills or competencies in terms of importance and effectiveness. This kind of analysis can reveal the area which is important to the board and an area of weak contribution by the independent director should encourage the discussion among the board and the remedial action should be thought of. With the use of appraisal technique, an area of the problem can be identified and solution like training, access to key information and greater availability of time can be worked out. The appraisal also helps in identifying the cause of resignation or dismissal. This would reveal whether the independent director was ineffective or he was forced to resign because he was too challenging to the executive management. There are other techniques like appraisal by the chairman, team members, shareholders, confidential feedback, etc.

### **CASE STUDY OF CRITICAL ISSUES OF SATYAM EPISODE**

Even where there is a stellar independent board of directors, it may not be possible for them to perform their role effectively if the conditions that facilitate





proper performance do not exist. The Satyam episode demonstrates some of the reasons why the effectiveness of independent directors in India may continue to be in doubt.

(i) Satyam Computer Services Limited (recently renamed Mahindra Satyam) is a leading information technology Services Company incorporated in India. Satyam's promoters, represented by Mr. Ramalinga Raju and his family, held about 8% shares in the company at the end of 2008, while the remaining shareholding in the company was diffused. Its securities are listed on the Bombay Stock Exchange and the National Stock Exchange. Furthermore, the company's securities are cross-listed on the NYSE. This required Satyam to comply not only with Clause 49 but also the requirements of the *Sarbanes-Oxley Act* as well as *NYSE Listed Company Manual*. Satyam took immense pride in its corporate governance practices. At the relevant time (end 2008), Satyam had a majority independent board, thus over-complying with the requirements of Clause 49. Its board consisted of the following:

#### **Executive Directors**

- (a) B. Ramalinga Raju, Chairman;
- (b) B. Rama Raju, Managing Director and Chief Executive Officer;
- (c) Ram Mynampati, Whole Time Director;

#### **Non-Executive, Non-Independent Directors**

- (a) Prof. Krishna G. Palepu, Ross Graham Walker Professor of Business Administration at the Harvard Business School

#### **Independent**

- a. Dr. Mangalam Srinivasan, management consultant and a visiting professor at several U.S. universities;
- b. Vinod K. Dham, Vice President and General Manager, Carrier Access Business Unit, of Broadcom Corporation;
- c. Prof. M. Rammohan Rao, Dean, Indian School of Business;
- d. T. R. Prasad, former Cabinet Secretary, Government of India; and
- e. V. S. Raju, Chairman, Naval Research Board and former Director, Indian Institute of Technology, Madras.

The board consisted of 3 executive directors, 5 independent directors and 1 grey (or affiliated) director. Amongst the non-executives, 4 were academics, 1 was from government service and the last was a business executive. At a broad level, it can be said that very few Indian boards can lay claim to such an impressive array of independent directors. The board consisted of 3 executive directors, 5 independent directors and 1 grey (or affiliated) director. Amongst the non-executives, 4 were academics, 1 was from government service and the last was a business executive. At a broad level, it can

be said that very few Indian boards can lay claim to such an impressive array of independent directors.

#### **ii. The Maytas Transaction**

#### **iii. Fraud in Financial Statements**

### **CONCLUSION AND SUGGESTION**

Independent directors or non-executive directors of the company monitor and control the chairman/chief executive; they serve as a link with external environment and provide an international perspective. Apart from this independent directors try to improve board processes and bring in specialist knowledge, they provide continuity, help identify alliance and acquisition. It can be concluded that independent directors help maintain an ethical climate in the organization. A company should have a clearly laid out policy where there should be specified role played by him at board, their tenure and age limit, qualification required etc. The focus must be on the quality of person who is going to be appointed. Selection of independent directors by SEBI and government would be fair and bring transparency in the selection procedure as well as can secure their independence to some extent. So far as age limit is concerned which must be review, minor should not be considered eligible for the chair of independent director; the minimum age limit for an independent director must be between 30-35. The person must be well-educated with required experience so that he can justify the role of an independent director. Company must clearly laid down qualification and experience required for the post of independent director in the policy. The appointed director must be rotated periodically to ensure the transparency and fairness in their decision. Legal protection must be provided to independent directors so that they can raise their voice against the management and force their views in the interest of shareholders.

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# EFFECTIVENESS OF MARKETING STRATEGIES ON ENHANCING CULTURAL TOURISM: A CASE STUDY ON TABAKA SOAPSTONE CARVINGS IN KISII REGION, KENYA

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## ABSTRACT

*Cultural Tourism is a growing phenomenon around the world. In Kenya, cultural tourism represents an important part of the tourism sector and largely depends on cultural heritage assets such as traditions, artifacts, and crafts, historical buildings, and gastronomy of host people. While marketing strategy can enhance the number of visitation and revenues to these sites, other strategies may be ineffective to meet the aims of the cultural sites. Investigating the effectiveness of marketing strategies on enhancing cultural Tourism should play a role in enhancing visitation levels. To this end, some authors have suggested marketing strategies for enhancing visitation levels in cultural sites; however, research on the effectiveness of marketing strategies in cultural sites is limited. To address this research gap, the research sought to examine the effectiveness of promotion, price, and brand awareness as marketing strategies on enhancing cultural tourism in Kenya using a case study on Tabaka soapstone carvings. The target population consisted of 300 tourists, 30 employees at the site, and management of the cultural site committee. A stratified sampling technique was used to select 60 tourists while 10 employees were selected through a proportionate sampling technique. Data was collected from both secondary and primary sources. However, the researcher relied mostly on primary sources as it was taken to be accurate as compared to secondary sources. The major tool for the collection of data from tourists and employees was structured questionnaire, while, data from the management was collected via interview. Analysis of data was done descriptively and presented by tables and figures. Limitations of the study were also explored and ethics considered in the study. The study found out that an inadequate number of tourists visiting the site were as a result of ineffective communication techniques employed. Tourism products and services were not presented well to tourists as it was promised to them thus leading to low satisfaction of tourists. They had also developed a perception that the price charged at the site was expensive. The study farther found out that tourists were unable to distinguish the cultural site from others due to unclear logos on site's brochures, websites, and signboards. The study recommended that cultural site management should use websites and local radio stations to enable more target tourists to discover the site instead of tourists depending on friends and relatives as revealed by the study. Offers and discounts during weekdays should be encouraged to enhance visitation during such periods.*



## 1.2. INTRODUCTION

Cultural tourism is a form of tourism that deals with the culture of a country or region. It specifically highlights people's lifestyles regarding their food, art, fashion, architecture, buildings, and other elements that assisted people to shape their culture (Riddhagni & Taylor, 2019). Chen & Rahman (2018) suggest that cultural tourists spend more money as compared to any other type of tourists while in a tourist destination. With the current increase in commodification of cultural products, cultural tourism is becoming much popular in the world as compared to other forms of tourism (AlGarni, 2020). Throughout the world, cultural experiences are sought by tourists who travel from one region or site to another. For example, tourists may travel from Egyptian pyramids to cathedrals of Europe, travel to Fort Jesus in Mombasa, Kenya to cosmopolitan streets of New York. Most countries in the world are focusing on cultural tourism for the growth of their tourism industry. Kenya is one of the countries focusing on cultural tourists as their target market to accelerate its growth in the tourism industry. For a long time, Kenya has promoted its wildlife and beaches as the resources to attract tourists but this has greatly changed in recent times. Kenya is diversifying its tourism products and culture is one of the products that has been developed, packaged, and promoted to the target tourists.

The development of cultural tourism needs a commitment and an investment as it is an incremental process. High financial resources and superior human expertise are needed to develop, package, promote, and sell cultural products of a region, site, or area. Unfortunately, not every community can have the required resources to utilize cultural resources effectively. In the past decade, the tourism industry was considered as having market-ready products for tourists. The marketing of tourism products such as culture was never part of tourist destination management's efforts to develop the destination. Most tourist sites focused on the protection and preservation of history, culture, and natural resources. However, in the current world, tourist sites are promoting and marketing their tourism products to attract new target markets.

Kenya is predominated with nature-based tourism that involves wildlife in the southern part of the country and beaches found along the Indian Ocean. This implies that few regions attract a good number of tourists in Kenya, hence making tourism in Kenya to be spatial. According to the Kenya Tourist Board (2018), the Kisii region received 3% of international tourists as compared to the Coast region that received 65%. Therefore, the study aims to examine the effectiveness

of marketing strategies to enhance cultural tourism in the Kisii region, with a key focus on the Tabaka soapstone cultural site. Foroudi et al. (2020) suggest that the success of a cultural site is connected to effective marketing strategies and positive image. The ways destination assemblies and presents tourism products to its tourists have an overall effect on the repeat of such tourists to a destination. A product in a marketing sense is the core benefit provided or the core problem solved. In this study, Tabaka Soapstone is the product and the core benefit from the cultural site is the historical experience. The strategies involved in developing, packaging, promoting, and selling the cultural site experiences to tourists will determine the number of tourists arriving in the destination. In the case of a cultural site, the core benefit is to provide deep historical experience, and then how the product is shaped will be different than if the core benefit desired is a more secular one. One should focus on one or two core benefits and then communicate those benefits to the target audience (Fader, 2020). However at Tabaka cultural soapstone in the Kisii region, management has been focusing on selling arts as a whole to tourists through intermediaries, hence there was a need to examine how they market their products, and who our target market to Tabaka soapstone site.

Any cultural site aims to receive more target tourists who will remain friendly to the local community and have no negative impact on the resource visited. For Tabaka soapstone carvings site to receive more tourists, it has to identify its products, competitors, and those it will not compete in (Foroudi et al., 2020). An appropriate marketing strategy that aims at meeting tourist's needs and demands should be designed. This would enhance the number of tourists arriving at the cultural site. According to Kenya Tourist Board (2018), visitation to the western circuit which includes Tabaka soapstone carvings is 3% of international Tourists compared to the coast which is 65%. Inappropriate marketing strategies are thought to contribute to low visitation levels. Given this discrepancy, there was a need to investigate the effectiveness of marketing strategies in enhancing cultural Tourism in the Kisii region, in Kenya. This would improve the visitation of tourists to the region thus enhancing the living standards of local people.

## 1.3 SIGNIFICANCE OF THE STUDY

The study's purpose is to identify the effectiveness of marketing strategies to enhance the number of visitations to the Kisii region, Kenya. This, in turn, will improve the cultural tourism in the western circuit.

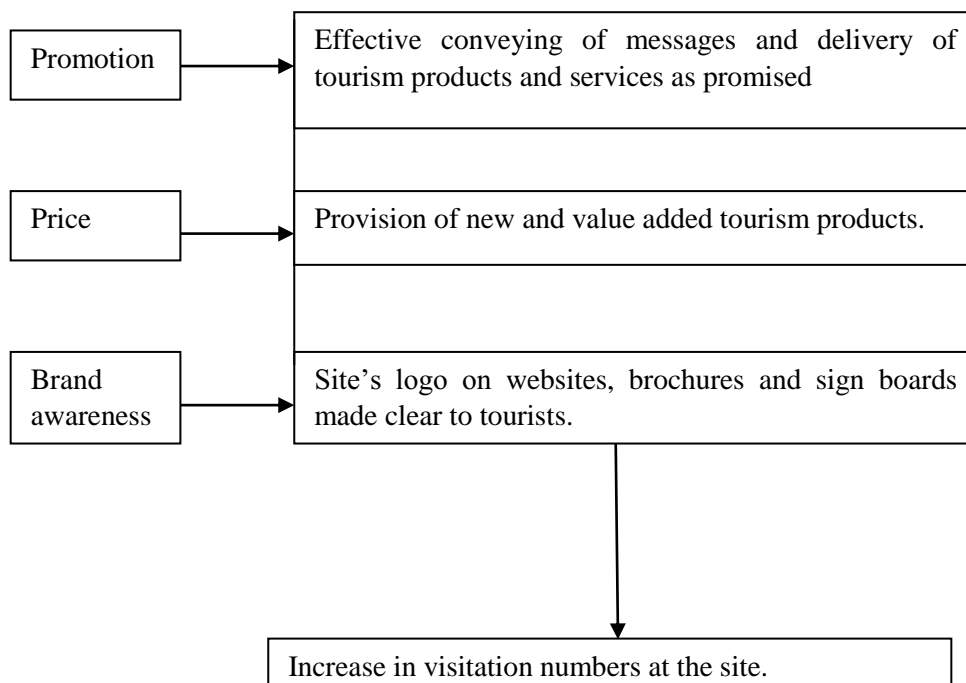


### 1.4 OBJECTIVES

The objectives of this study were:

1. To identify the effectiveness of promotion on enhancing cultural tourism in Tabaka soapstone carvings at the end of the study.
2. To identify the effectiveness of price strategy on enhancing cultural tourism in Tabaka soapstone carvings at the end of the study.
3. To identify the effectiveness of brand awareness on enhancing cultural tourism in Tabaka soapstone carvings at the end of the study.

### CONCEPTUAL FRAMEWORK MODEL



Source: Authors, 2020.

## LITERATURE REVIEW

### 2.1 HISTORICAL DIMENSION

Arrivals of tourists in Africa have been low in the last decade as compared to other continents such as the United States of America and Europe. According to United Nations World Tourism Organization (2020), France, Spain, and United States topped the list in the international tourists' arrivals while no African country featured in the top ten list of countries leading in international tourists' arrivals. This implies that Africa as a continent has not tapped into potentials of tourism in the current era of globalization. Unfortunately, African countries such as South Africa, Mozambique, Tanzania, and Kenya are greatly dependent on tourism for their economic growth. There are many tourism

resources that African countries such as Kenya need to exploit to enhance their international tourists' arrivals.



The Kenyan tourism industry is ranked as the fastest growing industry and the second highest foreign exchange earner after tea (Steinmetz, 2020). In the year 2019, the tourism industry earned Ksh 163.56 billion from Ksh 157 billion in the year 2018 with international tourists' arrivals increasing by 1.167% (Steinmetz, 2020). The Kenyan government attributed the increase of earnings from the tourism industry to effectively market strategies carried out by the Kenya Tourist Board.

## 2.2 PROMOTION AND CULTURAL TOURISM

Diarta (2017) defines promotion as a marketing mix element that enables marketers to educate, convince or remind consumers and other business to business users of a product of a firm with aim of influencing their opinion or eliciting a response. A tourist destination creates awareness of its product through performing promotion activities such as placing ads on social media platforms, designing flyers, promoting through local radio or televisions. According to Walker and Moscardo (2016), promotion increases demand a product and can as well act as an accessibility control tool in a cultural site. Accessibility in this study implies access to information regarding Tabaka Soapstone by the audience through advertising material and media promotions. Camilleri (2018) suggests that promotion entails selecting target tourists of a tourist destination, position, and integrate different tools of communication to deliver the intended message. Unfortunately, Tabaka soapstone depends on middlemen to sell tourists' products that it develops. This implies that the Tabaka Soapstone site management has not devised an effective promotional strategy to increase the number of tourists visiting the site.

The site is managed and run by the community members, majority of host community members could not see benefits of the site and thus may lead to them to withdraw their support from the site and join different enterprises that earn more revenue as compared to depending on a low number of tourists' arrivals at the site. According to Morrison (2018), a destination management organization need to know its customer better for it to perform well. This implies that effective promotion begins with a good tourist database management system that identifies potential tourists to the cultural site. Hamed (2017) suggests that destination organization management should retrieve information regarding their customers and align their tourism product and service promotion to the particular needs and preferences of the target market. This, in turn, will influence tourists' opinion and elicit their response to visiting the destination. All the authors agree that promoting a tourist destination such as Tabaka Soapstone cultural site would increase tourist visitation. However, there exists a gap in the effectiveness of promoting activities to enhance tourist visitation. Therefore, the study sought to examine the effectiveness of the promotional activities of the Tabaka Soapstone cultural site to enhance cultural tourism in the Kisii region, Kenya. .

## 2.3 BRAND AWARENESS

Brand refers to the perception and feelings of consumers regarding a particular product and its performance (Almeyda-Ibáñez & George, 2017). It entails all things of a product or service that have meaning to consumers. According to Della Corte and Aria (2016), branding is a source of competitive advantage for tourist destinations that have embraced it. Bassano et al (2019) support Della Corte and Aria (2016) by highlighting that tourist destinations use branding to differentiate themselves from competitors and earn a prominent place in the minds of their tourists. Branding, according to Foroudi et al (2016), increases tourist loyalty for a tourist destination. Tabaka soapstone carvings have not bundled tangible and intangible attributes that should be associated with the brand to meet the guest's needs and wants. Thus, it is unable to develop positive brand associations. The features being branded must be presented as a single-minded product to make the brand work effectively.



The authors above agree that the image and quality of brands should match the expectations and perceptions of the consumer and evolve dynamically concerning the changing environment. However, the authors did not highlight the effectiveness of brand awareness in enhancing visitation to a cultural site such as Tabaka Soapstone. In developing a destination brand, destination management should recognize all contact points of the tourists and convey an appropriate message that will enable them to put the visited cultural site on the prominent place of their minds. Each brand contact should deliver a message, whether good, bad, or indifferent. The destination should aim at delivering a consistent and positive message with each contact. Therefore, the study sought to examine the effectiveness of brand awareness in enhancing visitation to the Tabaka soapstone cultural site in the Kisii region.

#### 2.4 PRICE STRATEGY

Neuts (2020) defines price as the amount of money consumers need to pay to acquire products. Price plays both tactical and economic role for the tourist destination (Gibbs, 2018). According to Faith and Agwu (2018), the price charged over a given product reflects the value of the product being provided and commensurate with the quality of experience. Ei and Karamanis (2017) found out that people travel to exotic places to perform specialist cultural tours and pay whatever amount asked when they perceive that the value of the product or service provided is equal or greater as compared to the cost. Lutz and Newlands (2018) argue that price can be utilized to democratize or discriminate experiences provided to tourists. This implies that low prices charged for entry to a cultural site such as Tabaka Soapstone may facilitate access for all. Whereas a high price charged for entry to a cultural site would discourage some people from visiting the cultural site and if the price is extremely high, it may exclude some people from visiting the cultural site based on economic grounds. This could justify the reason Tabaka soapstone carvings are receiving a low number of domestic tourists. Novais, Ruhanen, and Arcodia (2018) suggest that a destination organization management can set a competitive price in a particular segment through a well-defined positioning price strategy.

A change in the price level from premium to super-premium may need alteration of product, change of customers, and change of promotion and distribution channels. This implies that altering the price charged in a cultural site can change all other marketing mixes dramatically. Tabaka soapstone carvings site cannot compete with international tourist destinations if looks and operates in a local economy. Authors agree that setting a price strategy on enhancing the sale of the product, in this case increasing visitation of tourists to a cultural site depends on other elements of the marketing mix and market conditions. However, the authors do not address the effectiveness of price strategy in increasing visitation to cultural sites. Price decisions do not incur costs in sales but assist in determining the level of revenue achievable. In most instances, cultural sites would encourage visitation by discounting their entry fees or services to move unsold tourist products. Therefore, this study tried to identify the effectiveness of price strategy at Tabaka soapstone on cultural tourism in the Kisii region.

#### 2.5 SUMMARY of the literature review and knowledge gap

It has been observed that most cultural tourist destinations that depend on intermediaries to promote their product end up receiving a low number of tourists thus generating low revenue. Creating brand awareness and building preference and loyalty among cultural tourists would enhance the number of tourists visiting a cultural site without necessarily depending on seasonality. Entry fees, tourists' product prices must be favorable to the target market so as to enable them to perceive activities and products as equivalent to their money paid.

The researcher under this study identified the effects of depending on intermediaries to promote cultural site's products and recommended appropriate ways of promoting a cultural site. The researcher also determined appropriate procedures of creating cultural site's brand and building of preference and loyalty among cultural tourists to avoid destinations depending on seasonality. Appropriate pricing methods were also suggested in the study to avoid discriminating cultural tourists who may not be able to participate in enhancing cultural tourism.

#### 3.0. METHODOLOGY

A case study was employed to conduct the research. Case study holistically describes and analyses of a single entity. The case study enabled the study of the Tabaka Soapstone cultural site's effectiveness of marketing strategies in detail. Due to the time limit in examining dependent variables (marketing strategies), it was better to adopt a case study as it uses smaller



samples for in-depth analysis. The target population of this study included management of cultural site's committee, three hundred tourists, and sixty employees of cultural sites. From the 300 tourists, stratified sampling was employed to select 60 participants in line with Kock and Haday's (2018) recommendation that a minimum sample of 20% is enough for educational research that has less than 1000 members as a target population. Proportionate sampling was used to select 10 employees from 30 (see table 3.1.).

The study used a structured questionnaire to collect data from employees and tourists at Tabaka Soapstone cultural site. An interview was used to

collect data from the management of a committee of cultural sites. The interview was used in the study because it provides high response quality with low refusal rates. Also, a structured interview was used because it is a multi-method data collection that involves cross-examining, questioning, and probing techniques (Lancaster, 2017). The structured interview enabled the researcher to seek more details from the cultural site management regarding their marketing strategies effectively to increase the number of tourists.

**Table 3.1:**  
**Sampling size matrix**

Description	Population	Sample Size
Employees	30	10
Tourists	300	60
Management of committee on cultural site	1	1
<b>Total</b>	<b>361</b>	<b>71</b>

Source: Authors, 2020

#### 4.0. DATA ANALYSIS AND INTERPRETATION

##### Demographic Information

Demographic information was based on gender, academic qualification, occupation, age, and the length of stay of the respondent in the cultural site. The

demographic data of the respondents were analyzed by the use of quantitative analysis. The cultural site is visited by both male (58%) and female (42%) counterparts that came to engage in different activities in the site. The total number of male tourists used in this study was 35 while female tourists were 25.

**Table 4.1.**  
**Gender representation of tourists**

Male	Female	Total
35(58%)	25(42%)	60 (100%)

Source: Authors, 2020.

The result reveals that, there is no greater disparity in gender in visiting the tourist site. Therefore gender

disparity had no effect in marketing strategies on enhancing cultural Tourism.

##### Level of education

**Table 4.3 Tourists' level of education**

Primary	Secondary	Tertiary/University	Total
8(13%)	20(33%)	32(53%)	60

Most tourists who visited the site had university /tertiary qualification (53%). Less than half were either in secondary school or had completed (33%).

Less than a quarter numbers of tourists that visited the site had only reached primary level of study (13%). From table 4.3 above, it is evident that tourists

who had attained the highest level of learning visited the site most.

##### Employees' length of stay at the cultural site

The Table 4.4 below indicates the length of time that each employee had been in the cultural site before the





study was carried out. This was to find out whether marketing strategies were formulated. employee had been in the cultural site when the current

**Table 4.4 Employees' length of stay at the cultural site**

Years	Number of employees	Percentage
Less than 1 year	1	10%
1 year	0	0
2 years	1	10%
3 years	2	20%
More than 3 years	6	60%
Total	10	100 %

From table 4.4 above majority of employees had stayed at the cultural site for more than three years (60%). This indicates that most are aware of the marketing strategies which have been in place. They therefore possess more information concerning the site.

### RESULTS OF THE ANALYSIS

The analysis of data in this section was presented descriptively. The results have been presented as per objectives and research questions of the research study. The results have been presented by use of tables, graphs and percentages.

### 4.2 Effectiveness of promotion on enhancing cultural tourism in Kisii region

Effectiveness of promotion findings of the cultural site are based on tourists' discovery of the site, tourists' motivations to the site, tourists' satisfaction at the site, attractiveness of marketing strategies..

#### 4.2.1 Tourists' discovery of the site

Table 4.5 below indicates the means of communication that enabled the tourists to discover Tabaka cultural site. This was to find out whether the form of communication used reached more target tourists in an effective manner.

**Table 4.5 tourists' discovery of the site**

Means of communication	Number of Tourists	Percentage
Friend/Relative	39	65%
Radio/Television	0	0
Newspaper	6	10%
Website	15	25%
Other	0	0
Total	60	100%

*Source: Authors, 2020*

From table 4.5 above, most tourists discovered the cultural site through relatives and friends (65%). A quarter of the tourists knew the site through websites (25%) while less than a quarter of tourists discovered through newspapers (10%). It is evident therefore to say that an inadequate number of tourists visiting the cultural site is due to ineffective communication techniques used.

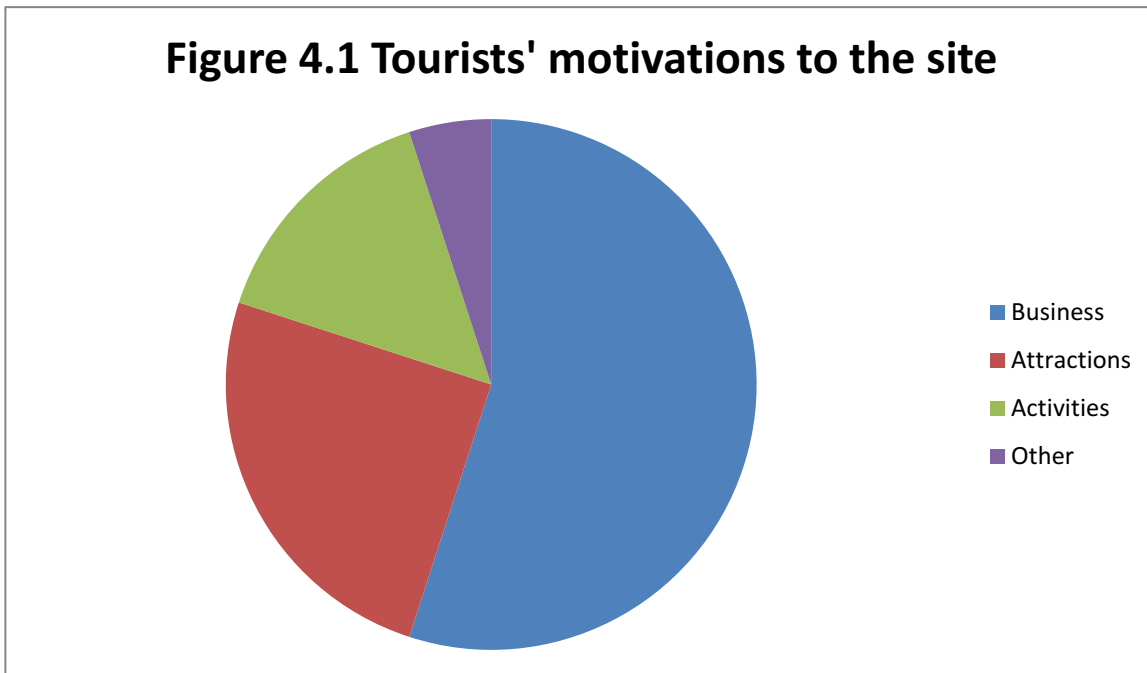
According to the Republic of Kenya (2020), creating awareness of local cultural sites among local people is a core development issue and a goal in its own right. The government of Kenya has developed a community education program that aims at providing

local people with the importance of visiting their attractions. They have facilitated county events that aim at making attractions known to local people. From the study, it is evident to say that serious attention is needed in selecting the appropriate media in reaching target tourists of the cultural site.

#### 4.2.2 Tourists' motivations to the site

Figure 4.1 below indicates the driving factors that made tourists to visit the cultural site. This was to find out whether the message conveyed out to tourists in regard to attractions and activities was effective.

**Figure 4.1 Tourists' motivations to the site**



Source: Authors, 2020

From figure 4.1 above the majority of the tourists visiting the cultural site for business purposes (55%). A quarter of the tourists visited the site to view attractions (25%) while less than a quarter of tourists came for tourists' activities (15%). A very little number of tourists came for different reasons such as learning the art of making tourists' souvenirs using soapstone and Gusii farming practices (5%). It is evident, therefore, to say that the cultural site's attractions and activities have not been communicated well to the target tourists.

According to Li, Huang, and Duan (2017), promotion is used to increase demand, and deliver information surrounding a site. From this study, it is evident to say that appropriate identification of cultural site's attractions and activities should be done and communicated well to target tourists.

#### 4.2.3 Tourists' satisfaction at the site

Table 4.6 below indicates acceptance of satisfaction by the tourists that visited the site. This was to find whether the tourists met their expectation at the site.

**Table 4.6 Tourists' satisfaction at the site**

Respondent	Number of tourists satisfied	Percentage
Yes	15	25%
No	45	75%
Total	60	100%

Source: Authors, 2020.

From table 4.6 above, the majority of tourists that visited the site were not satisfied (75%) by the services offered. Only a quarter of tourists were satisfied (25%) by the services offered. It is evident, therefore, to say that tourism products and services were not well presented to tourists as it was promised to them before.

#### 4.3 Effectiveness of price on enhancing cultural tourism

Effectiveness of price findings of the cultural site is based on tourists' favorable time to visit the site, the price charged for site's products and services offers at low season, and employees' rate on motivating factors to visit the site. The data was collected from Tabaka soapstone cultural site as explained by the figure and tables below.

### 4.3.1 Tourists' favorable time to visit the cultural site.

Table 4.7 below indicates the preferred time by tourists to visit the cultural site. This was to find whether tourists took advantage of time when products and services were lowly charged.

**Table 4.7 Tourists' favorable time to visit the cultural site.**

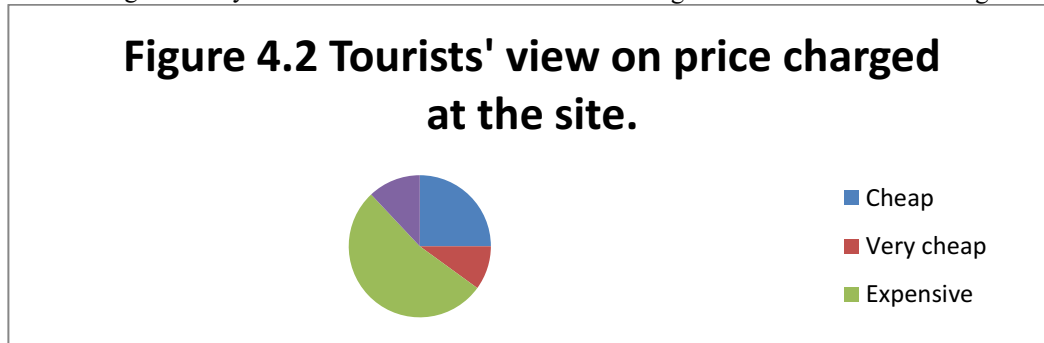
Time	Number of tourists	Percentage
Holidays	15	25%
Weekends	33	55%
Week days	12	20%
Total	60	100%

From table 4.7 above, most of tourists visited the site during weekends (55%) while a quarter visited during holidays (25%). A few number of tourists visited during week days (20%). It is evident therefore to say that the cultural site had not put measures to attract tourists during week days.

### 4.3.2 Tourists' view on Price charged at the site

Figure 4.2 below indicates the view of tourists on price at which tourism products and services were charged at the cultural site. This was to find out whether the price charged was affordable to the target tourists

**Figure 4.2 Tourists' view on price charged at the site.**



From the above figure, the majority of tourists viewed the site as expensive (53%) while a quarter viewed it as cheap (25%). It is evident therefore to say that the site appeared expensive to the most tourists who visited it.

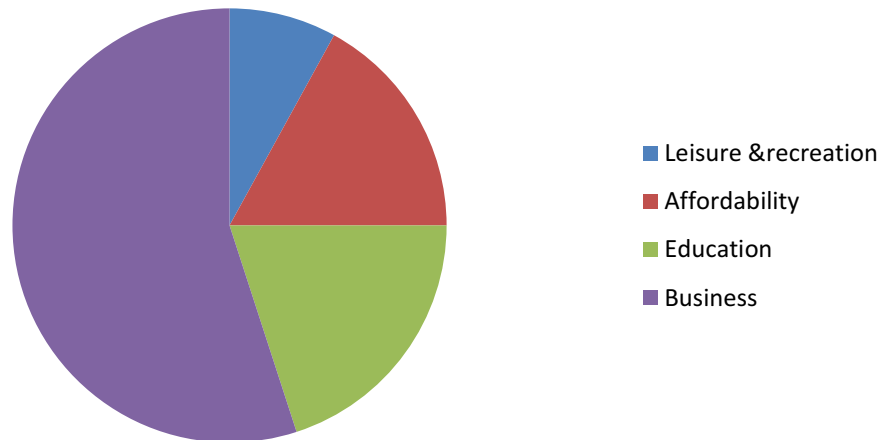
According to Goffi, Cucculelli, and Masiero (2019), tourism strategies should be tourist demand focused and based on the resources of the destination so as to create a sustainable tourism development. Increasing admission prices can have a double benefit by

increasing revenue for preservation efforts. However, this can discourage tourists who are price sensitive from visiting the site as observed in the study.

### 4.3.3 Tourists' rate on motivating factors to visit the site

Figure 4.3 below indicates the motivating factors to visit cultural site according to tourists' rating. This was to find out what motivated tourists to tour the site.

**Figure 4.3 Tourist's rate on motivating factors to visit the site.**



From figure 4.3 above, most tourists visited the site because of business (55%) at the site while less than a quarter visited the site for leisure and recreation purposes (8%). Very few numbers of tourists visited the site for education (20%) and affordability (17%) purposes. It is evident therefore to say that the price charged at the site was not encouraging to most of the tourists visiting the site.

**4.4 Effectiveness of brand awareness on enhancing cultural tourism**

Effectiveness of brand awareness findings of cultural site are based on Tourists' distinction of

cultural site from any other, Tourists' appreciation from the site. The data was collected from Tabaka soapstone cultural site.

**4.4.1 Tourists' distinction of cultural site from others**

Table 4.8 below outlines the number of tourists who were able and unable to differentiate the cultural site from any other site. This was to find out whether tourists understood the tourism products and activities offered at Tabaka soapstone.

**Table 4.8 Tourists' distinction of cultural site from others**

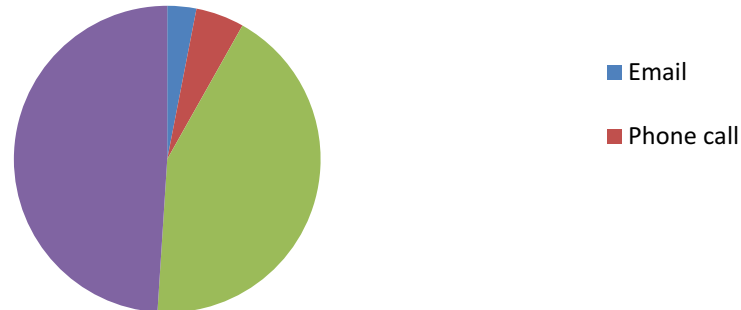
Number of tourists who were able to distinguish the site	Number of tourists who were unable to distinguish the site	Total
15(25%)	45 (75%)	60 (100%)

From table 4.8 above three quarter of tourists (75%) were not able to distinguish the cultural site from others. Only a quarter of tourists (25%) were able to distinguish the cultural site from any other. It is evident therefore, to say that the cultural site's attractions and activities were not well communicated to the tourists

**4.4.2 Tourists' appreciation from the site**

Figure 4.4 below outlines the channel through which tourists had received appreciation through the site's management. This was to find out whether the tourists got appreciation after visiting the site.

### Tourists' appreciation from the site.



From the figure 4.4 above, majority of tourists never received appreciation (48%). Only 42% of tourists received appreciation through word of mouth while 5% of tourists received through phone call and 3% through Email. It is evident therefore to say that the cultural site management did not put appropriate measures to ensure all tourists received recognition. This would have enhanced repeat of visitation by the tourists to the site.

#### 4.4.3 Communication of site's marketing strategy by management to employees

Table 4.9 below indicates number of employees in regard to how well the site's marketing strategy was communicated to them. This was to find out whether employees were involved in formulating the site's marketing strategies.

**Table 4.9 Communication of site's marketing by management to employees**

Rate	Number of employees	Percentage
Very well	5	8%
Well	15	25%
Poor	30	50%
Very poor	10	17%
<b>Total</b>	<b>60</b>	<b>100%</b>

From table 4.9 above, half of the employees (50%) rated communication of the marketing strategy by management to them as poor while a quarter of employees (25%) rated it as well communicated to them. Few tourists rated communication of the marketing strategy as very well (8%) communicated. It is, therefore, evident to say that management at the site had not involved the employees in the formulation of the marketing strategy.

#### 4.5 Findings of interviewee on effectiveness of marketing strategies

The study sort to find out the feelings of the interviewee on various issues concerned with the effectiveness of marketing strategies on enhancing cultural tourism in the Kisii region. The study found the following from the interviewees:

##### 4.5.1 Challenges experienced in implementing marketing strategies.

According to the cultural site management, most tourists who visited the site were price-conscious

and thus spend less at the site. This, therefore, posted a great challenge to the site management as it had to consistently develop innovative travel packages and new products to attract valued-oriented tourists.

Changes in technology, according to the cultural site management created this tough competition with other cultural sites in western Kenya, as new technology had facilitated a platform for unlimited choices, where tourists tailor-make their desired experiences. This had led to the formulation of new strategies to meet tourists' demands. Most of the tourists had not inculcated the culture of traveling to the site. The management of cultural sites highlighted the instances where the tourists who had visited the site most, had only traveled twice to this site. This showed that most of the tourists had not identified themselves with the cultural site's brand.



#### 4.5.2 What the cultural site management should do on site's awareness

According to the management of the cultural site, management should frequently update new activities on its website and encourage tourists to use Facebook and twitter while providing their compliments, complaints, and views in regard to the site. Therefore, it can be concluded that employing new technology on the cultural site would enhance communication between the site and tourists thus increasing the number of tourists visiting the site.

### SUMMARY OF THE FINDINGS, RECOMMENDATIONS AND CONCLUSION

This section attempts to summarize the key findings of the study. It also gives the conclusion as well as the recommendations in regard to the problem under investigation.

#### 5.1 SUMMARY OF THE STUDY

The purpose of this study was to identify the effectiveness of marketing strategies on enhancing Cultural Tourism in Kisii region. The results were analyzed depending on the objectives of the study.

##### 5.1.1 Effectiveness of promotion on enhancing cultural Tourism

From the information collected it was evident that an inadequate number of tourists visiting the cultural site is due to ineffective promotion techniques used. The study aimed at identifying the effectiveness of promotion on enhancing cultural tourism in the area of study. The study underscored tourists' motivations for the site. This was to find whether the message conveyed out to tourists in regard to attractions and activities was effective. It was found out that the majority of tourists visited the site for business purposes. This meant that the cultural site's attractions and activities had not been communicated well to the target tourists. It was found that the majority of tourists that visited the site were not satisfied with the services offered. Only a quarter of tourists felt satisfied with services. It was therefore concluded that tourism products and services were not well presented to tourists as they were promised to them before.

According to professor Kieyah of the institute of public policy Research and Analysis of Kenya, there had been a definite vacuum in the regulation of consumer matters (Daily Nation, 2013). He argued that the enactment of the consumer protection act, 2012 was to provide a solution towards protecting consumers from exploitation by the organization. The act encouraged the representation of consumers when

designing products so as to ensure that the products developed met customers' needs. The involvement of tourists in designing and presenting cultural products at the site could have led to more satisfaction in terms of quality and price charged.

##### 5.1.2 Effectiveness of price on enhancing cultural tourism

The study found that the cultural site had not put measures to attract tourists during weekdays as most of the tourists visiting the site during holidays and weekends. From the information collected majority of tourists viewed the site as expensive while less than a quarter viewed it as cheap. It was evident therefore to say that the site appeared expensive to most tourists.

GOK (2018) designed a strategy that aimed at encouraging civil servants to travel to local tourist destinations. It thought of countering tourism seasonality that had greatly affected the tourism industry by giving travel incentives to its employees. Most cultural sites including Tabaka had been receiving a low number of tourists during weekdays but this is likely to change due to outlined policy by the government. From the study, the cultural site should provide offers that are attractive to civil servants especially during weekdays in order to motivate them to visit the site.

##### 5.1.3 Effectiveness of brand awareness on enhancing cultural tourism

It was found that tourists were unable to differentiate the cultural site from others. This showed that the site's logo had not been well designed and communicated to tourists. The majority of tourists did not receive appreciation after visiting the site. This revealed that the site had not inculcated the culture of recognizing tourists. The site should, therefore, be made unique by making the logo clear on brochures, websites, and signboards and also create a good relationship with tourists.

According to Kim, Choe, and Petrick (2018) brand awareness rely on several factors based on loyalty, perceived quality, associations, and awareness. From the study, it can be observed that the cultural site had not formed effective relationships by the tourists and therefore this had led to a low repeat of visitation at the site.

#### 5.2 Recommendation

The cultural site management should identify appropriate communication techniques that would reach more target tourists. It should encourage use of website and local radio station to enable more target tourists discover the site instead of tourists depending on friends and relatives as revealed by the study.



Proper description of tourism products and services should be done when presenting such products and services to target tourists. The message conveyed to tourists in regard to attractions and activities should be accurate and detailed. From the study it was evident that most of tourists visited the site for business purposes that involved buying soapstone instead of carrying out non-consumptive activities.

Tourists should be promised on what they will find at the site on their arrival at the site. Most of tourists under study felt unsatisfied with the products and services offered to them. This might have been as a result of providing tourists with a lot of expectations before arrival.

Offers and discounts during week days should be encouraged in order to enhance visitation during such periods. From the study, majority of tourists visited during weekends. Provision of such offers and discounts would reduce overcrowding of tourists during weekends on attractions thus avoiding degradation of such attractions.

Prices charged on Tourism products at the site should be harmonized to reduce the perception by many tourists as expensive. This will encourage many tourists to travel to the site as they will see the site as affordable.

The site should be differentiated from others through making site's logo clear on brochures and websites. This would enable tourists to identify themselves with the site and visit it again.

Employees should be involved in formulating marketing strategies. This will enable them easily implement such strategies to meet tourists needs and wants thus satisfying them. Appropriate communication of formulated strategies to employees will enable them deliver them effectively.

### 5.3 CONCLUSION

From the finding of this study it was concluded that effective promotion should entail proper conveying of messages and adequate delivery of tourism products and services as it was promised to target tourists. This will enable tourists discover the site and tourism products presented to them. It was also concluded that while pricing tourism products, great consideration should be given to tourists' view on price so as to encourage many tourists to visit the site. Products and services offered to the tourists visiting the site should be enhanced and personalized so as to differentiate the site from others. Price sensitivity of tourists that appeared to be the great challenge to management as observed from the study should be addressed by consistently innovating travel packages and new products to attract valued-oriented tourists. The study

farther concluded that in order to differentiate the cultural site from others, site's logo on sign boards and brochures should be made clear to tourists. Long term relationship development between tourists and cultural site should be enhanced through frequent recognition of visiting tourists. This will encourage repeat of visitation. New technology should be an opportunity to cultural site rather than a challenge as it was found in the study.

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# THE ROLE OF ISLAMIC EDUCATIONAL INSTITUTIONS IN ENSURING SOCIAL STABILITY

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## ABSTRACT

*The article analyzes the reforms carried out in the field of religious education and upbringing during the years of independence in the Republic of Uzbekistan on the basis of scientific literature.*

**KEY WORDS AND PHRASES:** religion, Islam, religious tolerance, freedom of conscience, religious confessions, mosque, madrasah.

## DISCUSSION

It is known from history that the development of the system of religious education in our country and its development has a long history. The word madrasah (Arabic - place of teaching, classroom) is a secondary and higher specialized religious school in Islam, which trained scholars, school and madrasa teachers, and clerics. In addition to religious knowledge, special attention is paid to secular sciences in these educational institutions. After the independence of Uzbekistan, there has arisen an opportunity to study these topics objectively. [1: 4-p] It is true that great scholars who contributed to world civilization, both religious and secular, emerged from these educational institutions. During the years of independence, in order to strengthen the spiritual and enlightenment foundations of public life in our country, to implement the basic concepts and principles of national independence, to increase the sense of involvement and responsibility for the fate and future of our country, to strengthen ideological immunity against foreign ideas, much attention has been paid to educational issues and significant work has been done. Similarly, at a time when the processes of globalization are intensifying in the world today, and new threats and dangers to peace and stability are growing, life itself requires an enlightened struggle against ignorance. In this context, the events taking place in cyberspace, the spread of information on the

Internet and social networks, which is alien to our ancient religion of Islam and our sacred values, lead to misunderstandings of the essence of Islam, essence of humanity, in the minds of young people. In this regard, the task of further developing the socio-spiritual sphere, strengthening a healthy environment in families, neighborhoods and society as a whole, educating young people, preserving our peaceful life and the purity of our sacred religion is becoming more important than ever.

The normative and legal acts, Decree of the President of the Republic of Uzbekistan dated April 16, 2018 No PF-5416 "On measures to radically improve the activities of the religious and educational sphere" [2], Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 409 of May 31, 2018 "On approval of the Regulation on the procedure for state registration, re-registration and liquidation of religious organizations in the Republic of Uzbekistan" [3], Resolution No. 651 of August 13, 2018 "On measures to create additional conditions for education in foreign religious educational institutions" [4] adopted in order to regulate the essence of these issues, to solve the problems in the system at a higher level than ever before, to ensure social stability in the country, set a number of tasks.

The main problem is clear to everyone, including our public. In today's dangerous period, fanatical movements are carrying out their activities among young people in such ways as to influence



migrant workers in foreign countries, propaganda through "social networks", the opening of various informal telegram channels, the involvement of family members, relatives and neighbors, the organization of secret "cells", the distribution of extremist material in print and electronic form, the promotion of missionary work.

According to experts, there are now more than 100,000 web-sites dealing with content that promotes various forms of extremism. In the process of conducting conversations via the Internet, young people are inculcated with ideas such as the land of disbelief, migration, jihad, martyrdom, the restoration of the caliphate, and they are invited into lands of various conflicts and disputes. The goal of use of fanatical, stubborn, zombie militants, who are deprived of their abilities to think rationally and see any orders of their leader as a kind of rule, who have been actively involved in such hotspots of disputes by extremist and terrorist movements who are under influence of certain political forces in peaceful regions of the world to trigger various disputes and instabilities is clear to many. The main issue is the misinterpretation of these issues, how these issues are inculcated in the minds of young people in educational institutions operating in our country, and secondly, there is a need for appropriate staff to study the undiscovered heritage of works and manuscripts of scholars who have contributed to world civilization in our country. Particular attention should be paid to whether professors, researchers, clerics, students, imams, and scholars are completing tasks set ahead of them with diligence.

The land of Uzbekistan is one of the ancient cradles of Islamic science and culture. In order to study such a rich historical, scientific and spiritual heritage of our people, to introduce it to the world community, and most importantly, to reveal the true human nature of Islam, the Center of Islamic Culture of Uzbekistan was established in Tashkent, the Islamic University was transformed into the International Islamic Academy. Also, at the initiative of the President of the country, the foundation was laid for the construction of the "Center of Islamic Civilization" in Tashkent, which has a truly majestic appearance, which has really started a new approach to the development of the field. In particular, the majestic building of the center, which is being built on the initiative of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev, meets the goals and objectives of the center. Preserving, studying and promoting the rich scientific and spiritual heritage of our great ancestors requires the formation of specialists who will be able to convey the history of Islam, its essence of peace, goodness, humanity and creativity and high morals to the members of society in the future.

The great responsibility of area specialists is also explained by the various conflicts in the Fergana Valley in the Central Asian region in the initial years of independence, the subsequent extremist, terrorist activities of the fanatical forces, the presence of fanatical youth, the strong tendency to acquire Islamic knowledge. Today, there are two Islamic schools in the Fergana Valley: Mulla Kyrgyz madrasah in Namangan region and Sayyid Mukhyiddin maxdum madrasah in Andijan.

Mulla Kyrgyz Madrasah is an architectural monument in Chorsu Square, Namangan, which was built in 1910-1912 at the expense of the investor and patron of science Mulla Kyrgyz Akhund Mashrabboy oglu (1850-1922). Built in the central part of the city, the Mulla Kyrgyz Madrasah is fundamentally five-sided and surrounded by cells. The mosque and the classroom were built adjacent to each other and they were roofed with domes. [5]

Andijan "Sayyid Muhyiddin Mahdum" Secondary Special Islamic School In 1992, «Sayyid Muhyiddin Mahdum» Secondary Special Islamic School was established in Andijan region. The school is located in the village of Jalabek, Altynkul district, Andijan region, and began its activities in an eighteen-room building, the construction of which has not yet been completed. Soon, the building was completely renovated and put into operation with the help of the residents of the neighborhood. In these educational institutions, students are taught Islamic sciences, the science of the Qur'an, tajweed, fiqh, tafsir, hadith, as well as secular knowledge. They are taught by mature specialists, educators and teachers with many years of experience in these disciplines. [6] At the same time, the country supports the initiative to open a school of hadith, schools of Islamic jurisprudence, a special study of the areas taught in Islamic educational institutions. Another important aspect is that in order to strengthen the religious knowledge of our women in these educational institutions, to educate them in society in the spirit of devotion to our national and religious values, clubs are organized, there women are divided into groups, gradually trained by specialists and presented with certificates of achievements when they finish the courses successfully.

Today, in order to ensure social stability in the country, to study the heritage of scholars, special attention is paid to the activities of Islamic educational institutions. As a result of this attention, in order to improve the skills of imams and women mentors of the Fergana Valley, one of the regional centers of advanced training in the Republic is in service in the valley. Today, in the Fergana Valley, especially in Andijan, in the 4th quarter of 2019, more than 500 "Enlightenment Against Ignorance" events were held. These events were organized in the



form of various roundtable discussions, seminars and trainings in educational institutions and various organizations. Families in need of social assistance were interviewed. In order to hold these events at a high level and achieve results, a total of 54 representatives of various fields from the Fergana Valley visited Tashkent for a specially organized 15-day training course. In addition, special training courses organized by specialists in each region of the country at the Family Research Center for Women Mentors and community counselors have been delivering lectures on the role of religious values in strengthening the family, the role of family and marriage, child rearing and other social sciences in Islam.

In conclusion, the role of the holy religion of Islam, as well as Islamic educational institutions to provide the stability of the country, its tranquility, and the enlightenment of its youth, their recognition of good and evil is invaluable. Therefore, in carrying out these good deeds, the issue of mature personnel, who have undertaken the honorable task of introducing the heritage of Uzbek scholars to the world, educating worthy heirs, will not lose its relevance today and in the future.

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# PROTECTION OF DESIGN IN INDIA

Lalit Som

## ABSTRACT

We encounter various objects in our day to day life, which we can recognize by observing their design. Products which are artistically designed can grab the attention of the customer the moment they see it. These designs can take the form of Art, drawings, graphics etc. These designs may be created by professionals which includes engineered designs or architectures blueprints for any property, interior designs etc. Industrial Design is the use of both applied art and applied science to improve the aesthetics, ergonomics, functionality, and/or usability of a product, and it may also be used to improve the product's marketability and even production. The role of an industrial designer is to create and execute design solutions for problems of form, usability, physical ergonomics, marketing, brand development, and sales. Industrial design studies function and form and the connection between product, user, and environment. Generally, industrial design professionals work in small scale design, rather than overall design of complex systems such as buildings or ships. Industrial designers don't usually design motors, electrical circuits, or gearing that make machines move, but they may affect technical aspects through usability design and form relationships. Usually, they work with other professionals such as marketers to identify and fulfill customer needs and expectations. This paper makes an exploration into the arena of designs protection in India. The author sketches out the major provisions of the Designs Act 2000.

**KEYWORDS:** Design , Industrial design, piracy, burden of proof.

## INTRODUCTION

Consumers are influenced by the appearance of the article of their choice. Many people blindly choose the article which catches their eye by appearance. At the time of purchase, people are attracted by a design which has an artistic merit. Some articles with a particular design may attract the public and within a short period, the whole stock may be sold in the market. Hence, design of goods increases profits by attracting customers<sup>1</sup>.

Producers hunt for an attractive design which will increase sales. Some intellectuals do hard work by putting much thought, time and expense to find a design for a particular article which will increase sales. The object of design registration is to see that the creator of a profitable design is not deprived of his reward by others applying it to their goods without his permission<sup>2</sup>.

Design according to the Indian Designs Act, 2000, means only the features of shape, configuration, pattern or ornament or composition of lines or color or

combination thereof applied to any article whether two dimensional or three dimensional or in both forms, by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and are judged solely by the eye, but does not include any mode or principle or construction or anything which is in substance a mere mechanical device, and does not include any trade<sup>3</sup>.

## Design act 2000

Earlier this Act was governed by the *Design Act, 1911*. In order to bring the Design Act at par with the International law the enactment of the Design Act, 2000 took place. So, presently the design laws are regulated by the *Design Act of 2000*. It is an Act to consolidate and amend the law relating to the protection of designs. It was published in the Gazette of India and came into force on 12.05.2000. This Act is a complete code in itself and is statutory in nature. It extends to the whole of India<sup>4</sup>.

<sup>1</sup> Law of Intellectual Property- Dr. S.R Myneni

<sup>2</sup> Ibid

<sup>3</sup> <http://www.ipcell.iisc.ernet.in> (visited on 28-10-2013)

<sup>4</sup> <https://blog.ipleaders.in/salient-features-design-act-2000/amp/>



## Design

The expression "Design" means only the features of shape, configuration, pattern or ornament applied to any article by any industrial process or means whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and are judged solely by the eye. The design means the features applied to an article and not the article itself. The features are conceived in the author's intellect who give those ideas conceived by him a material (visual) form as a pictorial illustration, or as a specimen, prototype, or model. By registration under the Act, the features are protected as design. The protection is given for independently created industrial designs that are new or original, for example, the distinctive shape of a coke bottle or a pen or a textile design. The protection of design is for a maximum period of fifteen years<sup>5</sup>.

## INDUSTRIAL DESIGN: MEANING.

Industrial design protection is provided only for the aesthetic feature of a product, not for its functional design. Industrial design laws generally protect designs applied on industrial products which are aesthetic and non functional. Such designs merely enhance the aesthetic appeal of industrial products. Typically industrial designs are applied on products like furniture, packaging, watches, textiles and handicrafts. The economic value of these products lies in enhancing their aesthetic appeal to consumers. Designs which are functional are not registrable under the Designs Act, thus if a designer makes an article in a certain shape not to make it appeal to the eye of a consumer but solely to make the article perform a function, then it does not become registrable.

## What it does not include?

1. It does not include any mode of construction or any trademark as defined under clause (v) of sub-section (1) of Section 2 of the *Trade and Merchandise Marks Act, 1958*.
2. It does not include 'property mark' as defined in section 479 of the *Indian Penal Code, 1860*.
3. It does not include any artistic work as defined in clause (c) of section 2 of the *Copyright Act, 1957*<sup>6</sup>.

<sup>5</sup> The Designs Act, 2000, Gazette of India, Extraordinary part H-Section I, 2002.

<sup>6</sup> The Designs Act, 2000, Gazette of India, Extraordinary part II-Section I, 2002.

## Salient features of design act 2000

- India is a member of the World Trade Organization's Paris Convention. It has signed the Patent Cooperation Treaty which allows all the signatories of the convention to claim priority rights.
- Under the Act of 2000, Locarno classification has been adopted in which the classification is based only on the subject matter of design. Under the previous provisions, the classification was made on the basis of the material which has been used to make that material.
- The introduction of "Absolute Novelty" makes it possible to judge a novelty on the basis of prior publication of any article. This is applicable in other countries also.
- As per the new law, a design can be restored which was absent in the previous enactment. Now, the registration of a design can be restored.
- The Act allows the district courts to transfer cases to the high courts where the jurisdiction is present. It is possible only in cases where a person is challenging the validity of any registration.
- Laws regarding the delegation of powers of the controllers to other controllers and the duty of examiner are also mentioned in the new Act.
- The quantum of punishment is also enhanced under the Act in case of any infringement.
- The secrecy of two years of a registered design is also revoked.
- Provisions regarding the avoidance of certain restrictive conditions are also there so as to regulate anti-competitive practices in contractual licenses.
- Whenever a license is brought within the domain of public records and that too publicly, the registration is likely to be taken into consideration. Anyone can get a certified copy of it in order to inspect the same.
- The laws regarding the substitution of the application before registering a design are also mentioned in the new enactment.
- Under new provisions, power has been given to district court to transfer cases to the high court where the court is having jurisdiction. This is only possible if the person is challenging the validity of the design registration.



- Incorporates the provisions regarding delegation of powers of the controller to other controllers and duty of examiner.
- Under the new provision, the quantum of punishment is also enhanced in case of infringement.
- It revokes the secrecy of two years of a registered design.
- It contains provisions for the avoidance of certain restrictive conditions so as to regulate anti-competitive practices within contractual licenses.
- The registration is taken into consideration when it is brought within the domain of public records that too physically. Anyone can inspect the records and get a certified copy of it.
- It contains provisions for substitution of the application before registering the <sup>7</sup>.

### Objectives of design act 2000

- The primary objective of the Design Act is to protect the designs.
- The Design Act Of 2000 is an Act to consolidate and amend the law relating to the protection of designs.
- Its main objective is to protect new or original designs from getting copied which causes loss to the proprietor.
- The important purpose of design registration is to see that the creator, originator or artisan of any design is not deprived of his reward for creating that design by others copying it to their goods or products.
- An industrial design helps in drawing a customer's attention and helps in increasing the commercial value of an article. Therefore, helps in expanding its market.
- There are many competitors who adopt evil ways to reduce the competition in the rival groups by exploiting the designs to their advantage. Thus, it is necessary to have laws to safeguard the interests of the owners of these designs. In order to fulfill this objective, the Design Act of 2002 came into existence <sup>8</sup>.

<sup>7</sup> <https://blog.ipleaders.in/salient-features-design-act-2000/amp/>

<sup>8</sup> <https://blog.ipleaders.in/salient-features-design-act-2000/amp/>

### Essential Requirements for registration Novelty and originality

A design can be considered for registration only if they are unique. A combination of previously registered design can also be considered only if the combination produces new visuals. In a case **Hello Mineral Water PVT. LTD. v. Thermoking California Pure**, a design of water dispenser having a cylindrical shape was not considered as new on the grounds that mere shape and form is not sufficient to prove novelty.

### Design must be unique, a Prior publication is not acceptable

The design must not be a published one. If the design is already published than the design is not eligible for the publication. There should not be any tangible copy available already in the market if you are seeking registration of the design that is in digital format. Displaying of the design in any fashion show by the creator is the publication of that design. Secret and private use of the design does not amount to the publication and can be used for the experimental purpose.

It was held in **Kemp and company v. Prima Plastics LTD.** that disclosure of design by the proprietor to any third person cannot be claimed as publication provided that the disclosure must be in good faith.

### Making application of design to an Article

The applicability of the design should be to the article itself. It can be informed of a three-dimensional figure. There are two-dimensional figures also included in this act i.e any painting or any graffiti on the walls or print on the bedsheets.

### The design must not be contrary to the order and morality

The design must be registrable under the Design Act, 2000. It must not be prohibited by the Government of India or any institution so authorized. The design must be capable of registering under Section 5 of this act. The design which can cause a breach of peace and may hurt the sentiments of the people may not be allowed to get register.

### What is to be considered to register under this Act?

Looking forward to registering a design under Design Act, 2000, one must ensure following features in your design which are:

- The work must be capable of selling and made separately.
- It must be original and new to the market. The plagiarised design will not be considered under this act.
- It should be purely distinguishable from other designs.



- It must not relate to obscenity or any material which is inappropriate.

### Rights of the proprietor of the design

When a proprietor applies for the registration of the design he shall automatically get 'copyrights in design' for the period of 10 years from the date of registration. This period can be extended if the proprietor wants to continue with the design. The Design Act should not be confused with the Copyrights act because there are many products which can be registered under both the acts but their remedies cannot be sought in both the acts individually.

### Who is entitled to seek Registration?

As per the provisions of Design Act, 2000 any proprietor who is seeking registration of a design which is original and unpublished previously in any country which does not seem to be contrary to any law and order of that country can file an application for registration. A proprietor as per Section 2(j) includes that person who

1. is the author of that design
2. acquired design for a valid consideration and
3. Any person to whom the design has been devolved from the original proprietor.

In case there is more than one author than the design must be applied by the joint authors only.

### Locarno classification

Locarno agreement is an agreement as per which the designs are registered under the Act. It classifies goods for the purpose of registering them which helps in Design searches. It divides designs into different classes which are mainly function-oriented.

### Procedure for registration of design in India

Chapter 2 of the Design Act deals with the registration of designs and the procedure to be followed for the same. The following steps must be followed:

- An application for the registration shall be made in the patent office in the prescribed form along with the prescribed fee. The class in which the design is to be registered must be specified in the application and the article(s) to which it is to be applied. There are separate applications which need to be filed for each class of article.
- The controller will give the application for examining it so as to check whether the design is capable of being registered or not. If everything seems perfect then the controller will accept the application and proceed further.

- If there is any objection, then the applicant or his agent will be asked to make necessary amendments so as to register the design and nullify the objection.
- If the objection does not get removed within three months after the hearing, the application will be withdrawn and it must be noted that

### Application for registration of designs

The application for registration of designs is given under Section 5 of the Design Act, 2000.

- The controller registers a design under this Act after verifying that the design of any person, claiming to be the proprietor, is the new or original design not previously published anywhere and is not against any public policy or morality. Provided that such a design should be capable of being registered under this Act.
- The applications under the Act shall be filed in the Patent Office in the prescribed manner along with the prescribed fee for filling the form.
- The design should be registered in a specific class and not in more than one class. In case of any doubt regarding the class in which the design should be registered, the Controller will decide the matter.
- The controller may even reject any design and not register it. In such a case, the person aggrieved may file an appeal before the High Court.
- If any application is not complete within the prescribed time limit owing to the fault of the applicant then it shall be abandoned.
- A design when registered shall be registered as of the date of the application for registration.

A wide variety of items that can be registered under the Act include cutlery, dresses, etc.

### Items that cannot be registered as a design under the Act

- Signs, emblems or flags of any country.
- Size of any article, if changed.
- Structures and buildings.
- Integrated circuits' layout designs.
- Trade variations.
- Any principle or mode of construction of any article such as labels, tokens, cartoons, cards, etc.
- Books, calendars, certificates, jackets, forms-and other documents, greeting cards, maps and plan cards, postcards, leaflets, stamps, medals, dressmaking patterns.



- A mechanical contrivance.
- Workshop alterations of components of an assembly.
- Parts of any article which is not manufactured and sold separately.

### Duration of the registration of a design

The total time for which a design can be registered is 15 years. Initially, it was 10 years, which could be extended for another 5 years by paying a fee of Rs. 2000 to the Controller but it should be done before the expiry of that 10 years period. The proprietor of any design may even file an application as soon as the design gets registered for such an extension.

### Appeal for cancellation of the registration of a design

The registration of any design can be canceled anytime after it gets registered by filing a petition for such cancellation in *Form 8* along with a fee of Rs. 1,500 to the Controller.

The grounds for such cancellation are as follows:

- The design has been already registered in India previously.
- It has been published in India or somewhere else before the date of registration.
- The design is not original or new.
- It is not registrable under the Act.

### Entitlement of registration under design act 2000

According to the Design Act of 2000, a proprietor who wants to get his design registered and it is original and is not published previously anywhere in any country and the one which does not seem to be clashing to any law and order of that country, can file an application for getting the design registered. A proprietor includes the persons who:

- Is the author of the design;
- Has acquired the design for a valid consideration and
- Anyone to whom that design has been devolved from the original titleholder.

In case if there is more than one author of the design, then the design must be applied by the joint authors.

### Copyright in registered designs

After the registration of a design, the proprietor shall have the copyright of the design for 10 years from the date of registration.

If you want to extend the copyright period for the second period of 5 years then before the expiry of the original said ten years an application must be filed in the Controller's office along with the prescribed fee.

### Protection under Design Act:

The Designs Act only protects registered designs not the unregistered designs. Hence, fashion designers who have not duly registered their designs cannot get the benefits of the Act. It is pertinent to note that a fashion design, which is a trademark, cannot get protection under the Designs Act.

Further, The Designs Act 2000, is so drafted to permit protection of the non-functional aspects of an object, having visual appeal, such that design that include the features of shape configuration, pattern, ornament or composition of lines or colours applied to any two dimensional or three dimensional or on both forms. Such a design right remains in force for a period of ten years, extendable subject to conditions, for a total period of 15 years.

Section 22 of The Design Act states that in the case of piracy of a registered design, the infringer shall be liable to pay the registered proprietor of the design a sum not exceeding Rs25,000 (\$451) recoverable as a contract debt; if the proprietor elects to bring a suit for the recovery of damages for any contravention of the rights conferred to him and for an injunction against repetition of it, damages may be awarded and the person may be restrained by injunction.

The design registration system in India is time bound and the fastest of all IP registration procedures. Moreover, in view of the resources invested in creating a new design, the registration procedure is economical and cost effective. Once registered the proprietor enjoys monopoly and exclusive rights not only against copies of the protected design, but also against substantially similar products<sup>9</sup>

### PIRACY OF A REGISTERED DESIGN

Infringement of a copyright in design is termed as Piracy of a registered Design. It is not lawful for any person during the existence of copyright to do the following acts without consent or license of the registered proprietor of the design-

- (a) To publish or to have it published or expose for sale any article of the class in question on which either the design or any fraudulent or obvious imitation has been applied.
- (b) To either apply or cause to apply the design that is registered to any class of goods covered by the registration, the design or any imitation of it.
- (c) To import for the purpose of sale any article belonging to the class in which the design has been registered and to which the design or a

<sup>9</sup> <https://www.candcip.com/fashion--ip>





fraudulent or obvious imitation thereof has been applied<sup>10</sup>.

A distinction is made between fraudulent and obvious imitation. The only common factor between the two is that both should be imitations. Thus even in the case of fraudulent imitation the design applied must be an imitation of the registered design. In a fraud the imitation has been made with the intention to deceive another person with the knowledge that what is being done is a violation of the other persons right. Where, therefore, fraudulent imitation is established even if the imitation is rather clumsy and not obvious, the Court will declare it as an infringement of copyright in the design. There must be exact duplication, an imitation of the registered design. Nothing less than imitation is sufficient to establish piracy<sup>11</sup>.

#### A. Test to determine infringement-

The court has to determine whether the alleged infringement has the same shape or pattern and must eliminate the claim of similarity due to similarity of functions, e.g. similarity of functions would result when two articles have same shape due to the inherent nature of goods, two pens will necessarily be similar in having an ink tube, a cap and nib for writing. This element of functional similarity is to be eliminated. The Judge has to look at the two articles and check out their similarities and differences and through the eyes of person with average intelligence see whether the defendant's article is substantially different from that of the plaintiff<sup>12</sup>.

#### B. Judicial remedy-

The judicial remedy for infringement of a registered design recommended in the Act is damages along with an injunction. Section 22(2) stipulates remedy in the form of payment of a certain sum of money by the person who pirates a registered design. A suit in the appropriate manner for seeking the relief in the form of an injunction is also recommended<sup>13</sup>.

#### C. Jurisdiction of the Court-

A suit under section 22 is to be instituted in a District Court or a High Court depending upon the quantum of damages claimed. The provisions of this section do not exclude action for passing off and for rendition of accounts. A person complaining infringement of his

design can certainly ask for accounts from the defendant to show the profits earned by the defendant which would be the loss sustained by him which he could claim as damages. A suit for injunction restraining infringement of registered design and for rendition of account is, therefore, maintainable only when filed in the appropriate court<sup>14</sup>.

#### D. Burden of proof-

The general principle of law is that the party making the charge, i.e accusing another party of an act has to establish the occurrence of such an act. The burden of proof is thus on the plaintiff who brings an action to establish the fact of piracy of his design.

#### E. Defences which may be set up by the Defendant-

In a suit for infringement, a defendant may present evidence and argue the following defences-

- (a) The plaintiff has no title to sue. He may question whether the plaintiff is a registered proprietor of the design or his duly authorized agent or licensee.
- (b) The design is not entitled to protection. Disentitlement to protection can be pleaded on the grounds that the design has been previously registered in India; it has been published in India prior to the date of registration; the design is not a new or original design.
- (c) The plaintiff's own conduct is tainted in law. Law expects the party approaching its doors to approach with clean hands.
- (d) Delay and acquiescence- The institution of the suit within a reasonable time after the discovery of the infringement is expected of the plaintiff. The unreasonable delay in institution of the proceeding would amount to Acquiescence on the part of the plaintiff to such an infringement. Acquiescence of piracy is a reasonable ground to deny the plaintiff any of the reliefs prayed for.
- (e) The Copyright on a design is limited by time, the defendant on proving the expiry of period of registration is entitled to use the design and the plaintiff is not entitled to any relief.

#### CASE LAWS ON VIOLATION OF DESIGNS-

A.C Footwear Co. vs Deiem (India) Pvt Ltd, (2006) 32 PTC 91

<sup>10</sup> Law relating to Intellectual Property- Dr.

B.L. Wadehra

<sup>11</sup> Ibid.

<sup>12</sup> Law relating to Intellectual Property- Dr.

B.L. Wadehra

<sup>13</sup> Ibid

<sup>14</sup> Ibid



The subject matter of dispute was the design in respect of the sole of the shoe which had been registered with the Controller of Patents and Designs, Calcutta. It was the submission of the petitioner that design ought not to have been registered in view of the dual plea; firstly that the design had been previously registered in India and secondly, the design was not a new or an original design. The plea raised by the respondent was that the petitioner was pirating the design of respondent no.1 which was original. Moreover, there was prior registration of design in favour of another company. Both the designs appeared to be practically identical. The direction was given for cancellation of registration of designs.

Britannia Industries vs Sara Lee Bakery, 2001 PTC 23 (Mad)

Britannia industries filed a suit for interim injunction restraining the respondent from committing the acts of piracy of the applicant's registered design of its biscuits by the manufacture of the impugned product 'Milk Wala' 'Milk cream biscuits' bearing the design which is identical with or similar to applicant's design. The Court held on facts, that the main features in both the biscuits are not substantially same in the eyes of the customer, namely, children. Therefore, there is no infringement by the respondent in respect of the Designs Act.

Texla Metals and Plastics Pvt. Ltd. Vs Anil K. Bhasin, 2001 PTC 146 (Del)

The court held that the concept of a new or an original type of design is relatable to the publication of such a design or its availability to the public in India. The court further held that if the contention that the defendant has received brochures from Malaysia, Korea and Japan with regard to such goods, the mere receipt of such brochures would amount to publication of such designs within India.

Escorts Construction Equipment Ltd Vs Action Construction Equipment Pvt Ltd, 1999 PTC 36(Del)

The Delhi High Court had occasion to interpret this part of the definition (as contained in the Designs Act, 1911). This case was concerning the alleged illegal copying of a design by the respondent of Pick-N-Carry Hydraulic Self Mobile Cranes manufactured by the plaintiff. Though the case was not directly coming under the Designs Act, the Court examined whether the said design was capable of registration under the Designs Act. After examining the definition of design

under the Act, the Court held that the design in question was incapable of registration. According to the Court the definition made it amply clear that the primary object of the Act was to protect shape and not function, or functional shape. "The expression 'design' does not include a method or principle of construction or features or shape or configuration which are dictated solely by the function which the article to be made in that shape or configuration has to perform." Rejecting the contention of the plaintiff who claimed protection of certain specific parts of the crane, the Court held: "The aforesaid parts of the crane are made in a particular shape so as to interrelate with others mechanically. These parts of the crane are not made to appeal to the eye but solely to make the crane work or function. Most of the key components or parts, unseen in the crane for which they were required, had only to pass the test of being able to perform their function. They would be judged by performance and not by appearance. Consequently, the aforesaid key components or parts are incapable of being registered as designs".

In *Disney Enterprises Inc. v. Prime Housewares Ltd.*, the international registration of industrial designs became a matter of conflict in India. A Mumbai based company Prime Housewares used to manufacture characters like Mickey Mouse, Donald Duck, etc. a suit was filed by the Disney enterprises for the infringement of their international registered designs.

The court held that the plaintiff's trademark is protected but not the designs under the Indian law. An order was passed by the court for the infringement of the trademark of the enterprises. The Indian company was asked to deliver all the infringing material to the enterprises so that it could not be used further.

In the case of *Bharat Glass Tube Limited v. Gopal Gas Works Ltd.*, the respondents (Gopal Glass Works) had registered their design for diamond-shaped glass sheets and had a certificate of the same. The appellants started using this design for marketing. These designs were made in collaboration with a German company.

After knowing that the appellants are using their design, they moved to the Court. The appellants contended that the respondents' designs were not new since the German company had been using it since 1992 and it was already published in the U.K. Patent Office so it lost its originality. When the matter went to the High Court on appeal then it restored the designs to the respondents. When the matter reached the Supreme



Court, it upheld the decision of the Calcutta High Court.

## CONCLUSION

A design is something that catches the eyes of the consumers. The design itself may not be of much use to the consumers yet the uniqueness or attractiveness may tempt them to purchase it. The more unique the design, the better are the chances of demand increasing. Manufacturers are ever willing to come up with something new that meets the eye in order to push their sales right up. The strong competition among various manufacturers benefits the consumers in the end as they enjoy a variety in products offered by different manufacturers.

However it cannot be forgotten that the creator of the design has spent a whole lot of time and money in preparing the design, and it is certainly unfair if the design is copied and put to use by others without the knowledge and permission of the creator. Companies invest large sums in research and development of products coming up with innovative and useful designs. Therefore the protection of the industrial designs becomes very important in today's times when such designs are prone to copying.

In India, the Designs Act, 2000, is a legislation meant to protect industrial designs. A design to be registerable under the Act, must be of some shape, configuration, pattern or ornamentation or composition of lines or colours applied to such article in any form by any industrial process or means. However it does not include any mode or principle of construction or anything which is in substance a mere mechanical device and does not include any Trade or Property mark or artistic work. In order to get statutory protection under the Designs Act, 2000, the design has to satisfy the definitional requirements of Section 2(d).

The products which have a unique appearance or a pattern or design can be registered under the Act. The main aim of law, hence, is to promote innovation. Design being intellectual property, what law is concerned when it comes to an industrial design is the ornamental or aesthetic aspect of a product.

In the International sphere the Hague Agreement is an international registration system which offers the possibility of obtaining protection for industrial designs in a number of States and/or intergovernmental organizations by means of a single international application filed with the International Bureau of the World Intellectual Property Organization. Hence under this agreement the need to have a series of applications in different countries is done away with. Under the The Locarno Classification a list of classes and subclasses along with an alphabetical list of goods in which industrial designs are incorporated, with an

indication of the classes and subclasses into which they fall and explanatory notes are prepared. The advantage of the Locarno Classification system is that there is an industrial design-specific classification system. Hence industrial design searches are much simpler both at the national and international level. The Paris Convention covers a wider aspect of industrial property like patents, marks, industrial designs, utility models, trade names, geographical indications and repression of unfair competition.

In case of any infringement of any designs registered under the Designs Act, 2000, the judicial remedy is damages along with an injunction. Section 22(2) stipulates remedy in the form of payment of a certain sum of money by the person who pirates a registered design. Thus a suit may be filed in the appropriate Court and appropriate manner.

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## DOSHAGATI WITH APPLICATION OF PRASANGATANTRAYUKTI

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### ABSTRACT

*Gati or movement is mainly caused by Dosha. Pitta and Kaphadosha takes the help of Vata dosha for their movement, when these Doshas becomes morbid by consuming Apathyaahara and Vihara, moves to different part of body and leads for manifestation of diseases. Doshagati are the different kinds of movements of Dosha. They may or may not be able to produce a disease, Knowledge of Doshagati is the fundamental concept of Ayurveda. Its diagnostic & therapeutic usefulness are completely mentioned in Ayurvedic classics and this can be understood by PrasangaTantrayukti.*

**KEYWORDS:** *Gati, Dosha, Doshagati, Ayurveda, PrasangaTantrayukti*

### INTRODUCTION

Ayurveda as expounded a principle *Tridoshavada*, Vata-Pitta-Kapha are somatic *Doshas*, *Doshas* are moving in entire body, when they stop at a place then they manifest *Vikara*, they are responsible for the destruction and support of the body when they are abnormal and normal respectively. Health can be summarized as *Prakritigati* of the *Dosha* and whereas *Vikrutagati* defines illness. *Doshagati* is fundamental concept of Ayurveda, In the present paper an attempt is being made to understand *Doshagati* with application of *PrasangaTantrayukti*.

**Dosha:** *Dosha* means which vitiate the other substances after getting themselves vitiated.<sup>[1]</sup>

**PrasangaTantrayukti:** The ending of explanation of primary monograph in one chapter leading to the start of the secondary premise explained in another chapter and thereby providing the conclusion for the primary monograph is due to the adaptation of *PrasangaTantrayukti*.<sup>[2]</sup> For example – In *Vedotpatti* chapter of *Shushrutasamhita*, *Purusha* (living organism) is the sum total of the *Mahabhutas* (or the five primary elements such as earth, water, fire, air and ether) and the *Atma* (the soul), that medical treatment made of *Purusha*. And he is the subject matter of every action and it has repeated in the chapter of *Bhootavidhya* that the *Purusha* is the

combination of all the five *Mahabhutas* and the *Atma* and *Purusha* is the subject matter of all sort of medical treatment.

It also applies to a situation where in, when the essence of topic is repeated in different words at different places.

**DoshaGati:** *Charakacharya* has conferred various states (*Avasthaagati*) of *Dosha* they are: Decrease, normalcy and increase, other three courses of *Doshas* are upward, downward and oblique or transverse movement. Yet another set of three state of *doshas* are by their movement to *Kostha* (thoracoabdominalcavity), *Shaka* (*Tvak* and other *Dhatu* except *Rasa*) and vital organs, bones and joints.<sup>[3]</sup>

### MATERIALS AND METHODS

Classical texts were reviewed to get the knowledge about *Doshagati* with application of *PrasangaTantrayukti*. Materials were explored through available texts, published articles and authentic websites. The collected materials were critically analysed and conclusion was drawn.



## DISCUSSION

### LAKSHANA- 1 WITH USE OF PRASANGA TANTRAYUKTI

1. *Vata-Pitta-Kapha* are moving all-over the body if it is *Aprakupita* in *Shareera* (normal in body) leads to *Shubhparinama* (good results), such as *Bala-varnaprasadana* (gives strength and colour) and if are *Prakupita* (morbid) then are considered as *Vikaras* because of *Ashubhaphala* (ill results).<sup>[4]</sup>
2. Disease manifest at the place where the aggravated *Dosha* circulating all over the body, become obstructed due to abnormality in the *Srotas* (Channels of the body)<sup>[5]</sup>
3. Vital parts of the body are protected from aggravated *Vata*, this aggravated *Vata* is responsible for aggravation of *Pitta*, *Kapha* and both gets alleviated and this work of these *Pitta* and *Kapha* depends upon *Vata*. *Vata* is treated by the *Vasti*, *Vasti* considered as the safeguard of vital organs.<sup>[6]</sup>
4. Some of the major *Srotas* include those carrying *Prana* or vital breath, *Anna* or food, *Rasa* or plasma, *Mamsa* or muscle, *Meda* or adipose, *Asthi* or bone, *Majja* or marrow, *Shukra* or reproductive element, *Mutra* or urine, *Purisha* or faeces and *Sweda* or sweat. As regards *Vata-Pitta-Kapha*, they are capable to move all over the body and all the *Srotas* serving as their passages.<sup>[7]</sup>
5. The *Vata-Pitta-Kapha* always circulate through all the body channels, the *Vata* owing to its subtle characteristics its really impeller of other two. When *Vata* is provoked, it propels the other two *Doshas* and dislodge them here and there causing various disease.<sup>[8]</sup>

### LAKSHANA- 2 WITH USE OF PRASANGA TANTRAYUKTI

1. *Doshas* are *Paramanuroopi* (*Dosha* are minute in nature)

Minutest units in to which all organs of the body are divided are known as *Paramanu* and they can't be counted because – they are extremely numerous (*Atibahutwata*), they are extremely subtle (*Atisaukshmat*) and they are beyond the sensory perception (*Atiindriyatwat*). *Vayu* because of its specific nature of fast action is associated with these *Paramanus* and is responsible for their union and disjunction.<sup>[9]</sup>

2. Channels of *Dosha*

Specific varieties of the channels of the circulation in the human body are the same in number as the structural entities in the human body, ceases either to maintain the continuity or to undergo diminution in the absence of the respective channels of circulation.

Channels of circulation carry the *Dhatus* undergoing transformation to their destination.<sup>[10]</sup>

3. Manifestation of morbidity by *Dosha*

*Vyanavayu*, which by nature stimulate the process of circulation, always causes the circulation of *Rasadhatu* all-over the body simultaneously and continuously. *Rasadhatu* during the process of circulation, get stucked due to vitiation of the channels of circulation, at the site of morbidity diseases will manifest.

As the rains are caused by the clouds in the sky, similarly *Doshas* get vitiated in that particular spots, that is where they get stuck due to vitiation of channels of circulations, to cause the morbidity in the body.<sup>[11]</sup>

4. *Dosha* are *Swatantra* or *Aswatantra* (*Dosha* are independant or dependant)<sup>[12]</sup>

Examples- 1) Vitiated *Vata* provokes either *Kapha* or *Pitta* or both of them and along with them obstruct the channels of circulation to cause pain in the organ of heart, umbilicus, flanks and urinary bladder. If not eliminated through the downward path because of obstruction, it remains confined to *Pakwashaya*, *Pittashaya* or *Kaphashaya* either independently (*Swatantra*) or in association with other *Doshas* (*Paratantra*) it becomes palpable for its round shape for which it is called as *Gulma*.<sup>[13]</sup>

2) *Vayu* gets aggravated because of intake of unctuous food, exertion, suppression of natural urges, *Udavarta* (upward movement *Vata* in the abdomen) and emaciation. This aggravated *Vata*, while passing through sides of abdomen, cardiac region, urinary bladder and anus, suppress the power of digestion and stimulates *Kapha*. This *Kapha* arrest the movement of *Vayu*, as result of which the latter gets located between the skin and muscle tissue of abdomen and causes swelling of abdomen.<sup>[14]</sup>

### SO DOSHALAKSHANA ARE OF 4 TYPES

- *Sarva-Shareera-Chara* (pervades entire body)
- *Paramanuroopi* (minute in nature)
- *Na upaghata-manyata* (will not get disintegrated)
- *Deha-utpatti- hetu* (cause for manifestation or support of body)

### FROM DOSHA – MANIFESTATION OF VYADHI / VIKARA WITH USE OF PRASANGA TANTRAYUKTI,

1. *Tridoshas* are the cause for the origin of the body, in normal state spread in the lower, middle and upper part respectively. The body is supported by *Tridosha*. These when abnormal become the causes of destruction.<sup>[15]</sup>
2. The *Lakshana*, *Karma* and *Nirukti* of *Vatadidosha*, which is responsible for the



manifestation of *Vraṇa* is being explained.<sup>[16]</sup>

3. *Vikāra* is *Vishamata* of *Dhatu*, here *Dhatu* refers to *Dosha*, *Rasadidhatus* and *Malas*. *Vikāra* refers to *Vishamata* of *Dhatu* (derangement of tissues) and *Samya* is *Samata* of *Dhatu* (normalcy of tissues). In *Vyavahara* (practise) *Vishamata* of the *Dhatu* is *Aswasthya-hetu* (cause of disease).<sup>[17]</sup>
4. *Dehadhatu* refers to *Dhatu*, *Dosha* and *Mala*. The one which are *Virodhi* (opposite) to these *Dosha*, *Dhatu* and *Mala* is considered as *Viruddha* (opposite). It hampers the functions of *Rasadidhatus*.<sup>[18]</sup>
5. After listening the properties of *Vata*, in *Vatakalakaleeyaadhya* of *Charaka Sutra sthana Kumarsirabharadwaja* spoke, substances having a similar *Guna* (quality), *Prabhava* (action) as that of *Vata*, repeated practice of such will lead to vitiation of *Dhatu*.<sup>[19]</sup>

### **KUPITADOSHA WITH USE OF PRASANGA TANTRAYUKTI**

Here *Kupita* means both *Vridhdhi* and *Kshaya*, due to *Vikruti* only there will be a *Vatadi-Prakopa*.<sup>[20]</sup>

- *Jwara* which is caused by the affliction of passion, grief, fear, anger, and evil spirits including germs is called *Abhishangaja-jwara*. *Vata* get aggravated by passion, while *Pitta* get aggravated by anger and all three *Doshas* are afflicted by *Bhootas* (evil spirits).<sup>[21]</sup>
- Abnormalities of *Jatharagni* (digestive power) leads to the morbid accumulation of the *Mala* (*Dosha* and bodily waste) and in turn it tends to cause multiple diseases, and particularly *Udararoga*.<sup>[22]</sup>
- *Svatantrarogas* (independent or primary diseases) - Have their own specific causes, comforting methods and clearly manifest features.
- *Paratantrarogas* (secondary or associated diseases) - Which do not have their own specific cause.

Similarly, *Doshas* also remain independently or depending on other *Doshas* and accordingly varying presentations are seen in each disease. Such a fact should be understood by observation with presence of mind.<sup>[23]</sup>

### **CONCLUSION**

*Dosha* are moving all over the body, when they will stop their disease manifests. There is no specific site so that's why four *Karyas* are told for *Dosha* and they are 1. *Sarva-Shareera-Chara*

(pervades entire body), 2. *Paramanuroopi* (minute in nature), 3. *Na upaghata-manyata* (will not get disintegrated), 4. *Deha-utpatti- hetu* (cause for manifestation or support of body). So, these all are considered as *Gati* of *Dosha* based on *PrasangaTantrayukti*.

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## FORMULATION OF SEQUENCES OF DIOPHANTINE 3-TUPLES THROUGH THE PAIR $(3,6)$

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### ABSTRACT

*This paper aims at formulating sequences of Diophantine 3-tuples through the pair  $(3,6)$*

**KEY WORDS:** *Diophantine 3-tuple, sequence of Diophantine 3-tuples*

### INTRODUCTION

The problem of constructing the sets with property that product of any two of its distinct elements is one less than a square has a very long history and such sets have been studied by Diophantus. A set of  $m$  distinct positive integers  $\{a_1, a_2, a_3, \dots, a_m\}$  is said to have the property  $D(n), n \in \mathbb{Z} - \{0\}$  if  $a_i a_j + n$  is a perfect square for all  $1 \leq i < j \leq m$  or  $1 \leq j < i \leq m$  and such a set is called a Diophantine  $m$ -tuple with property  $D(n)$ .

Many Mathematicians considered the construction of different formulations of diophantine triples with the property  $D(n)$  for any arbitrary integer  $n$  [1] and also, for any linear polynomials in  $n$ . In this context, one may refer [2-13] for an extensive review of various problems on diophantine triples.

This paper concerns with the construction of sequences of diophantine 3-tuples  $(a, b, c)$  such that the product of any two elements of the set added by  $(-2), (-9), (-14), (-17), D(k^2 + 8k - 2), D(k^2 - 8k - 2)$  in turn is a perfect square.

**Sequence: 1**

Let  $a = 6, c_0 = 3$

It is observed that





$ac_0 - 2 = 16$ , a perfect square

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(-2)$ .

Let  $c_1$  be any non-zero polynomial such that

$$ac_1 - 2 = p^2 \tag{1}$$

$$c_0c_1 - 2 = q^2 \tag{2}$$

Eliminating  $c_1$  between (1) and (2), we have

$$c_0p^2 - aq^2 = (c_0 - a)(-2) \tag{3}$$

Introducing the linear transformations

$$p = X + aT, \quad q = X + c_0T \tag{4}$$

in (3) and simplifying, we get

$$X^2 = ac_0T^2 - 2$$

which is satisfied by  $T = 1, X = 4$

In view of (4) and (1), it is seen that

$$c_1 = 17$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(-2)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 43$$

exhibits diophantine 3-tuple with property  $D(-2)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 81$$

exhibits diophantine 3-tuple with property  $D(-2)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 131$$



exhibits diophantine 3-tuple with property  $D(-2)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where

$$c_{s-1} = 6s^2 - 4s + 1, \quad s = 1, 2, 3, \dots$$

**Sequence: 2**

Let  $a = 6, \quad c_0 = 3$

It is observed that

$$ac_0 - 9 = 9, \text{ a perfect square}$$

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(-9)$  .

Let  $c_1$  be any non-zero polynomial such that

$$ac_1 - 9 = p^2 \tag{5}$$

$$c_0c_1 - 9 = q^2 \tag{6}$$

Eliminating  $c_1$  between (5) and (6), we have

$$c_0p^2 - aq^2 = (c_0 - a)(-9) \tag{7}$$

Introducing the linear transformations

$$p = X + aT, \quad q = X + c_0T \tag{8}$$

in (7) and simplifying we get

$$X^2 = ac_0 T^2 - 9$$

which is satisfied by  $T = 1, \quad X = 3$

In view of (8) and (5), it is seen that

$$c_1 = 15$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(-9)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 39$$



exhibits diophantine 3-tuple with property  $D(-9)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 75$$

exhibits diophantine 3-tuple with property  $D(-9)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 123$$

exhibits diophantine 3-tuple with property  $D(-9)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where

$$c_{s-1} = 6s^2 - 6s + 3, \quad s = 1, 2, 3, \dots$$

**Sequence: 3**

Let  $a = 6, c_0 = 3$

It is observed that

$$ac_0 - 14 = 4, \text{ a perfect square}$$

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(-14)$ .

Let  $c_1$  be any non-zero polynomial such that

$$ac_1 - 14 = p^2 \tag{9}$$

$$c_0c_1 - 14 = q^2 \tag{10}$$

Eliminating  $c_1$  between (9) and (10), we have

$$c_0p^2 - aq^2 = (c_0 - a)(-14) \tag{11}$$

Introducing the linear transformations

$$p = X + aT, \quad q = X + c_0T \tag{12}$$

in (11) and simplifying we get

$$X^2 = ac_0T^2 - 14$$



which is satisfied by  $T = 1, X = 2$

In view of (12) and (9), it is seen that

$$c_1 = 13$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(-14)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 35$$

exhibits diophantine 3-tuple with property  $D(-14)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 69$$

exhibits diophantine 3-tuple with property  $D(-14)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 115$$

exhibits diophantine 3-tuple with property  $D(-14)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where

$$c_{s-1} = 6s^2 - 8s + 5, \quad s = 1, 2, 3, \dots$$

**Sequence: 4**

Let  $a = 6, c_0 = 3$

It is observed that

$$ac_0 - 17 = 1, \text{ a perfect square}$$

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(-17)$ .

Let  $c_1$  be any non-zero polynomial such that

$$ac_1 - 17 = p^2 \tag{13}$$

$$c_0c_1 - 17 = q^2 \tag{14}$$



Eliminating  $c_1$  between (13) and (14), we have

$$c_0 p^2 - a q^2 = (c_0 - a)(-17) \tag{15}$$

Introducing the linear transformations

$$p = X + aT, \quad q = X + c_0 T \tag{16}$$

in (15) and simplifying we get

$$X^2 = a c_0 T^2 - 17$$

which is satisfied by  $T = 1, X = 1$

In view of (16) and (13), it is seen that

$$c_1 = 11$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(-17)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 31$$

exhibits diophantine 3-tuple with property  $D(-17)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 63$$

exhibits diophantine 3-tuple with property  $D(-17)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 107$$

exhibits diophantine 3-tuple with property  $D(-17)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where

$$c_{s-1} = 6s^2 - 10s + 7, \quad s = 1, 2, 3, \dots$$

**Sequence: 5**

Let  $a = 6, c_0 = 3$



It is observed that

$$ac_0 + k^2 + 8k - 2 = (k + 4)^2, \text{ a perfect square}$$

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(k^2 + 8k - 2)$ .

Let  $c_1$  be any non-zero polynomial such that

$$ac_1 + k^2 + 8k - 2 = p^2 \tag{17}$$

$$c_0c_1 + k^2 + 8k - 2 = q^2 \tag{18}$$

Eliminating  $c_1$  between (17) and (18), we have

$$c_0p^2 - aq^2 = (c_0 - a)(k^2 + 8k - 2) \tag{19}$$

Introducing the linear transformations

$$p = X + aT, \quad q = X + c_0T \tag{20}$$

in (19) and simplifying we get

$$X^2 = ac_0T^2 + k^2 + 8k - 2$$

which is satisfied by  $T = 1, X = k + 4$

In view of (20) and (17), it is seen that

$$c_1 = 2k + 17$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(k^2 + 8k - 2)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 4k + 43$$

exhibits diophantine 3-tuple with property  $D(k^2 + 8k - 2)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 6k + 81$$

exhibits diophantine 3-tuple with property  $D(k^2 + 8k - 2)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where



$$c_4 = 8k + 131$$

exhibits diophantine 3-tuple with property  $D(k^2 + 8k - 2)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where

$$c_{s-1} = 2(s-1)k + 6s^2 - 4s + 1, \quad s = 1, 2, 3, \dots$$

**Sequence: 6**

Let  $a = 6, c_0 = 3$

It is observed that

$$ac_0 + k^2 - 8k - 2 = (k - 4)^2, \text{ a perfect square}$$

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(k^2 - 8k - 2)$ .

Let  $c_1$  be any non-zero polynomial such that

$$ac_1 + k^2 - 8k - 2 = p^2 \tag{21}$$

$$c_0c_1 + k^2 - 8k - 2 = q^2 \tag{22}$$

Eliminating  $c_1$  between (21) and (22), we have

$$c_0p^2 - aq^2 = (c_0 - a)(k^2 - 8k - 2) \tag{23}$$

Introducing the linear transformations

$$p = X + aT, \quad q = X + c_0T \tag{24}$$

in (23) and simplifying we get

$$X^2 = ac_0T^2 + k^2 - 8k - 2$$

which is satisfied by  $T = 1, X = k - 4$

In view of (24) and (21), it is seen that

$$c_1 = 2k + 1$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(k^2 - 8k - 2)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where



$$c_2 = 4k + 11$$

exhibits diophantine 3-tuple with property  $D(k^2 - 8k - 2)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 6k + 33$$

exhibits diophantine 3-tuple with property  $D(k^2 - 8k - 2)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 8k + 67$$

exhibits diophantine 3-tuple with property  $D(k^2 - 8k - 2)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where

$$c_{s-1} = 2(s-1)k + 6s^2 - 20s + 17, \quad s = 1, 2, 3, \dots$$

It is noted that, in each of the above sequences, the following relations are observed:

- The triple  $(c_s, c_{s+1} + 6, c_{s+2})$  forms an arithmetic progression.

**Sequence: 7**

Let  $a = 3, c_0 = 6$

It is observed that

$$ac_0 - 2 = 16, \text{ a perfect square}$$

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(-2)$ .

Let  $c_1$  be any non-zero polynomial such that

$$ac_1 - 2 = p^2 \tag{25}$$

$$c_0c_1 - 2 = q^2 \tag{26}$$

Eliminating  $c_1$  between (25) and (26), we have

$$c_0p^2 - aq^2 = (c_0 - a)(-2) \tag{27}$$

Introducing the linear transformations





$$p = X + aT, \quad q = X + c_0T \tag{28}$$

in (27) and simplifying, we get

$$X^2 = ac_0 T^2 - 2$$

which is satisfied by  $T = 1, X = 4$

In view of (28) and (25), it is seen that

$$c_1 = 17$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(-2)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 34$$

exhibits diophantine 3-tuple with property  $D(-2)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 57$$

exhibits diophantine 3-tuple with property  $D(-2)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 86$$

exhibits diophantine 3-tuple with property  $D(-2)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where

$$c_{s-1} = 3s^2 + 2s + 1, \quad s = 1, 2, 3, \dots$$

**Sequence: 8**

Let  $a = 3, c_0 = 6$

It is observed that

$ac_0 - 9 = 9$ , a perfect square

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(-9)$ .



Let  $c_1$  be any non-zero polynomial such that

$$ac_1 - 9 = p^2 \tag{29}$$

$$c_0c_1 - 9 = q^2 \tag{30}$$

Eliminating  $c_1$  between (29) and (30), we have

$$c_0p^2 - aq^2 = (c_0 - a)(-9) \tag{31}$$

Introducing the linear transformations

$$p = X + aT, \quad q = X + c_0T \tag{32}$$

in (7) and simplifying we get

$$X^2 = ac_0T^2 - 9$$

which is satisfied by  $T = 1, X = 3$

In view of (32) and (29), it is seen that

$$c_1 = 15$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(-9)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 30$$

exhibits diophantine 3-tuple with property  $D(-9)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 51$$

exhibits diophantine 3-tuple with property  $D(-9)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 78$$

exhibits diophantine 3-tuple with property  $D(-9)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where



$$c_{s-1} = 3s^2 + 3, \quad s = 1, 2, 3, \dots$$

**Sequence: 9**

Let  $a = 3, \quad c_0 = 6$

It is observed that

$$ac_0 - 14 = 4, \text{ a perfect square}$$

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(-14)$ .

Let  $c_1$  be any non-zero polynomial such that

$$ac_1 - 14 = p^2 \tag{33}$$

$$c_0c_1 - 14 = q^2 \tag{34}$$

Eliminating  $c_1$  between (33) and (34), we have

$$c_0p^2 - aq^2 = (c_0 - a)(-14) \tag{35}$$

Introducing the linear transformations

$$p = X + aT, \quad q = X + c_0T \tag{36}$$

in (35) and simplifying we get

$$X^2 = ac_0T^2 - 14$$

which is satisfied by  $T = 1, \quad X = 2$

In view of (36) and (33), it is seen that

$$c_1 = 13$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(-14)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 26$$

exhibits diophantine 3-tuple with property  $D(-14)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 45$$



exhibits diophantine 3-tuple with property  $D(-14)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 70$$

exhibits diophantine 3-tuple with property  $D(-14)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where

$$c_{s+1} = 3s^2 - 2s + 5, \quad s = 1, 2, 3, \dots$$

**Sequence: 10**

Let  $a = 3, \quad c_0 = 6$

It is observed that

$$ac_0 - 17 = 1, \text{ a perfect square}$$

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(-17)$  .

Let  $c_1$  be any non-zero polynomial such that

$$ac_1 - 17 = p^2 \tag{37}$$

$$c_0c_1 - 17 = q^2 \tag{38}$$

Eliminating  $c_1$  between (37) and (38), we have

$$c_0p^2 - aq^2 = (c_0 - a)(-17) \tag{39}$$

Introducing the linear transformations

$$p = X + aT, \quad q = X + c_0T \tag{40}$$

in (39) and simplifying we get

$$X^2 = ac_0T^2 - 17$$

which is satisfied by  $T = 1, \quad X = 1$

In view of (40) and (37), it is seen that

$$c_1 = 11$$



Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(-17)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 22$$

exhibits diophantine 3-tuple with property  $D(-17)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 39$$

exhibits diophantine 3-tuple with property  $D(-17)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 62$$

exhibits diophantine 3-tuple with property  $D(-17)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where

$$c_{s+1} = 3s^2 - 4s + 7, \quad s = 1, 2, 3, \dots$$

**Sequence: 11**

Let  $a = 3, \quad c_0 = 6$

It is observed that

$$ac_0 + k^2 + 8k - 2 = (k + 4)^2, \text{ a perfect square}$$

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(k^2 + 8k - 2)$ .

Let  $c_1$  be any non-zero polynomial such that

$$ac_1 + k^2 + 8k - 2 = p^2 \tag{41}$$

$$c_0c_1 + k^2 + 8k - 2 = q^2 \tag{42}$$

Eliminating  $c_1$  between (41) and (42), we have

$$c_0p^2 - aq^2 = (c_0 - a)(k^2 + 8k - 2) \tag{43}$$

Introducing the linear transformations



$$p = X + aT, \quad q = X + c_0T \tag{44}$$

in (43) and simplifying we get

$$X^2 = ac_0T^2 + k^2 + 8k - 2$$

which is satisfied by  $T = 1, X = k + 4$

In view of (44) and (41), it is seen that

$$c_1 = 2k + 17$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(k^2 + 8k - 2)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 4k + 34$$

exhibits diophantine 3-tuple with property  $D(k^2 + 8k - 2)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 6k + 57$$

exhibits diophantine 3-tuple with property  $D(k^2 + 8k - 2)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 8k + 86$$

exhibits diophantine 3-tuple with property  $D(k^2 + 8k - 2)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where

$$c_{s-1} = 2(s-1)k + 3s^2 + 2s + 1, \quad s = 1, 2, 3, \dots$$

**Sequence: 12**

Let  $a = 3, c_0 = 6$

It is observed that

$$ac_0 + k^2 - 8k - 2 = (k - 4)^2, \text{ a perfect square}$$

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property  $D(k^2 - 8k - 2)$ .



Let  $c_1$  be any non-zero polynomial such that

$$ac_1 + k^2 - 8k - 2 = p^2 \tag{45}$$

$$c_0c_1 + k^2 - 8k - 2 = q^2 \tag{46}$$

Eliminating  $c_1$  between (45) and (46), we have

$$c_0p^2 - aq^2 = (c_0 - a)(k^2 - 8k - 2) \tag{47}$$

Introducing the linear transformations

$$p = X + aT, \quad q = X + c_0T \tag{48}$$

in (47) and simplifying we get

$$X^2 = ac_0T^2 + k^2 - 8k - 2$$

which is satisfied by  $T = 1, X = k - 4$

In view of (48) and (45), it is seen that

$$c_1 = 2k + 1$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property  $D(k^2 - 8k - 2)$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 4k + 2$$

exhibits diophantine 3-tuple with property  $D(k^2 - 8k - 2)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 6k + 9$$

exhibits diophantine 3-tuple with property  $D(k^2 - 8k - 2)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 8k + 22$$

exhibits diophantine 3-tuple with property  $D(k^2 - 8k - 2)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_s, c_{s+1})$  where



$$c_{s-1} = 2(s-1)k + 3s^2 - 14s + 17, \quad s = 1, 2, 3, \dots$$

It is noted that, in each of the above sequences 7-12,

the triple  $(c_s, c_{s+1} + 3, c_{s+2})$  forms an arithmetic progression.

In conclusion, one may attempt for obtaining sequences of higher order Diophantine tuples with suitable properties.

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## SCIENTIFIC EXPEDITIONS AND RESEARCH WORKS IN THE FIELD OF SANATORIUM AND RESORTS IN UZBEKISTAN

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### ABSTRACT

*This article describes the process of studying the existing medicinal waters in Uzbekistan, their use for therapeutic purposes, as well as the establishment of sanatoriums. In particular, the research work carried out by Russian and local doctors and the activities of the N.A. Semashko Institute of Physiotherapy were analyzed.*

**KEYWORDS:** sanatorium, resorts, Semashko, Chartak, porcupines, Polvontosh, Chimyon, Evseev, V.M.Faybushevich, Yo.K.Mo'minov, S.A.Qosimov, A.K.Shukurov, R.P.Po'latov.

### DISCUSSION

The activity of sanatoriums and resorts plays an important role in the restoration of human health, and the main stages of the formation of this sector in Uzbekistan include the period of the former Soviet Union.

In 1925-1990, scientific research was carried out in health resorts and sanatoriums in Uzbekistan. We can divide these studies into two directions in turn. The first is scientific expeditions to the field, the second is scientific research in the field. The purpose of the first type of research was to identify new sources of mineral resources in the territory of Uzbekistan and on this basis to open resorts or sanatoriums in those areas. The second type of scientific research consisted of studying the problems that arose in the field and expressing their scientific views on them.

In 1917-1931, doctors, physicists, chemists, geologists, radiologists published 48 scientific papers on resorts[1]. In addition to studying the healing places expedition doctor resorts physicists, chemicals, mineralog, geologists involved. Since the 1930s, sanatoriums and resorts in Uzbekistan have not only provided medical treatment and recreation to the population, but also organized scientific expeditions to the regions to develop this area. In particular, in 1932, the Uzbek Hydrometeorological Institute organized an expedition to study the health resorts in the country. The members of the expedition left Tashkent

on June 21 to study the Pedov mineral source in Fergana district [2].

From 1932 to 1950 in Uzbekistan, the staff of the Research Institute of Balneology and Physiotherapy named after NA Semashko studied 45 mineral water sources, 18 muddy lakes, 38 climatic sites. As a result, treatment facilities for 430 inpatient beds (Tashkent mineral water, Chartak, Jayron-Khona, Polvontash, Chimgan, South Olamushuk, Vanovskaya) were established[3].

1934 - 1936 years, named after Semashko physiotherapy and resorts Research Institute and the Central Asian countries by researchers at the University of Og'aliq Nomozgoh of the valley, steeplechase, Yong'oqzor, three red, Khoja Ipak, naked and Zarkent spas and sanatoriums. Its results were published in the collections of the Research Institute of Physiotherapy and Balneology named after N.A Semashko[4].

In 1934-1939 in the resort of Shohimardon doctors (Belyakova, Zakharyan, Kashirtsev, Akapyan, etc.), climatologists and geophysicists (prof. Chernyavsky, associate professors Lutherstein and Eisershtat), hydrologist (Beder), botanist (prof. Sovetkin,) prof. He conducted research under the direction of N.I. Ragoza. "Works of state scientific-research institute Physiotherapy and Balneology named after N.A Semashko resort Shakhimardan" is the result of this research. In addition, research has shown that "changes in blood pressure under the influence of solar baths in Shohimardon", "Changes in the blood of patients with pulmonary tuberculosis



in the conditions of Shokhimardon mountain climate resort", "Shokhimardon resort as a mountain-climate station for patients with tuberculosis" and " Four PhD dissertations entitled "Pulmonary tuberculosis" were defended at the resort "Shohimardon"[5].

N.A. Semashko resorts and physiotherapy research institute named by the Department of resorts 1934 - 1940 years, more than 60 therapeutic areas, including 30 mountain climate, there are 18 sources of mineral water of 17 balneal and curative mud pools identified. Most of the studied mountain-climatic areas until the 1950s functioned as resorts, sanatoriums, rest homes, children's sanatoriums. For example, the institutions in Bosh Chorbog, Qizillangar, Shohimardon, Ak-Tash, Vodil, Gova are among them.

The second period of research in the field of balneology in the Republic began after the Second World War, and during this period N.A. Employees of the Semashko Institute of Balneology and Physiotherapy studied the water in deep wells. From 1941 to the early 1950s, more than 100 mineral water sources were studied in Uzbekistan. Of these, 45 mineral springs brought to the surface and 15 natural mineral springs were found to have healing properties.

In the years following World War II, spa activities began to develop separately. Scientists such as R.I.Evseev, V.M.Faybushevich, Y.K.Muminov, G.M.Freydovich, A.P.Drynkin, L.G.Moldavanova have developed sulfur, radon, which have different chemical composition and properties. Saline, siliceous, alkaline, mineral waters, medicinal mud, favorable climatic conditions were studied.

The Soviet Union accepted care structures based on the rich comprehensive study of the use of solar radiation. R.I.Evseev, V.M.Faybushevich, G.M.Freydovich, R.A.Katsenovich, E.A.Chernyavskiy, Yo.K.Muminov, Z.A.Dalimov, A.P.Drynkin, M. The effect of local medicinal products on various diseases in modern physiotherapy by scientists such as I.Ketko, A.S.Sadikov, S.A.Kasimov, A.K.Shukurov, R.P.Pulatov, U.M.Shogulamov, T.V.Tolmacheva and developed using various methods such as electrophoresis, microwave, ultrasound. In January 1972, the first republican scientific-practical conference on improving the work of sanatoriums was held in Tashkent[6].

In 1971-1975, 1 doctoral and 23 candidate dissertations were defended at the institute. Published 4 collections, 3 medical recommendations on balneology and physiotherapy, reflecting the scientific activity of the Institute, as well as 13 medical recommendations, prepared 263 works and delivered 150 lectures by the staff of the Institute[7]. In 1976-1980, researchers in the field of

medicine in Uzbekistan published more than 100 scientific papers [8].

During the years 1984-1988 by the staff of the Institute Adonai (Nagornaya), hydrogen sulfide (Ch important or n) and iodine-bromine (Ch o rtak) mineral water sources on the basis of the initial deformation of osteartroz and studied physical therapy for patients with intervertebral osteokondroz complex issues. Inflammatory and damaged joint diseases (rheumatoid arthritis, arthritis and arthrosis) after trauma rehabilitation of the patient with the physiological factors that series and in combination, using ultrasound, fonoforez krizanol, CMT electrophoresis using a 5% solution of the treatment method developed. In 1984, an important event took place in the life of the institute - the only pediatric physiotherapy and balneology clinic in the country began to provide services for 120 beds, and in 1988 for 200 beds. The construction of an entire children's complex, which includes all types of treatment with physiotherapy and spa factors, has been completed. As a result, Institut scientific achievements Qobul (1987) and Beijing (1988) and international exhibitions.

It should also be noted that scientific expeditions have scientifically studied waters or other types of mineral resources that the locals consider to be medically beneficial. As a result of these studies, substances that are considered to be rich in some minerals have not been found to be beneficial to human health. In 1982, 1986, 1987 and 1988 the Uzbek Research Institute of Physiotherapy and Balneology named after NA Semashko inspected the site of Khoja Ubbon in Romiton district of Bukhara region. Water from the spring and the soil of the adjacent area have been studied several times in the laboratory of the Ministry of Health of the USSR S physiotherapy and balneology and the Republican Institute of Soil Science and Grochemistry. According to research, the water of Hodja Ubbon spring turned out to be ordinary water itself. Also, no changes were found in the mineral composition of the soil[9].

In short, the study of the resort resources of the republic is closely linked with the activities of the Research Institute of Balneology and Physiotherapy named after N.A Semashko.

1. Beginning in the 1920s, the construction of health resorts and sanatoriums began in the territory of Uzbekistan. Several scientific expeditions were organized to identify these places, and on the basis of the results of these expeditions, local health facilities were established.

1. In studying the work of resorts and sanatoriums, scientists have also been engaged in scientific research. These studies were mainly aimed at solving problems in the field and developing this direction. Also, a number of



expeditions were organized in the regions to identify new mineral resources.

2. According to the results of scientific research, not only the construction of sanatoriums near mountainous and healing springs, but also the construction of such sanatoriums in urban areas has begun. During the 1930s and 1960s, the construction of resorts and sanatoriums intensified.

3. According to the results of the study, resorts and sanatoriums are divided into several types. This distribution came mainly from the main direction of that resort or sanatorium. For example, certain health facilities were adapted to serve patients with tuberculosis. The purpose of these sanatoriums was to help shorten the recovery time of patients with this disease. There were also special health resorts and sanatoriums in the area to protect the health of children.

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## AN ANALYSIS OF THE DOCTRINE OF ULTRA VIRES FROM THE INDIAN PERSPECTIVE

Lalit Som

### ABSTRACT

*The doctrine of Ultra Vires is a very important innovation of the judiciary, which has played and still continues to play a very important role in the Indian Scenario. The present paper attempts to delve into the intricacies of the Doctrine of Ultra Vires in India, and then it presents a comparative analysis of the same with the United Kingdom. The paper explains the need and scope of the Doctrine, and it also highlights the judicial viewpoint of the same. It also shows the journey of the Doctrine in India, starting from its introduction to its downfall in the country, and the various actions taken by the businessmen to evade or escape from the Doctrine of Ultra Vires. It also depicts the consequences and effects of the same, and also brings light on the various issues that the business enterprises face in carrying out its social obligations. The doctrine of Ultra Vires is also subject to a lot of exceptions, which are also discussed in this piece. The paper ends with a comparative analysis with the United Kingdom and finally points out to the current status of the Doctrine of Ultra Vires in India.*

**KEYWORDS:** *ultra vires doctrine, company law*

### INTRODUCTION

In today's world, it is very important that every human act is censured irrespective of whether it is an individual or a group act. The reason behind the same is that censuring helps to resolve the problem of lack of control that people tend to show in exercising self-restraint towards plenty of temptations that are present in our society. Censuring has become a necessity even in a Company, which is nothing but an artificial person, with no physical manifestation after incorporation. So, in order to regulate the scope of the business, there is a need for some kind of an official document, otherwise, the business activities of the companies might end up into an unregulated market and chaos. To achieve this purpose, the companies prepare the Memorandum of Association which contains an object clause highlighting the objects for which the company is formed. This object clause implies that the company cannot do any sort of activities which are beyond its objects, and if they do so, then it will be rendered as an ultra vires act. The Doctrine of Ultra Vires plays a pivotal role in determining whether a company has acted in a manner which is outside the scope of its authority. Through this paper, I will analyse the concept of the "Doctrine of Ultra Vires" and its applicability in India. This paper is also an attempt to highlight the evolution of the doctrine and deal with

various aspects of it. The paper not only portrays the journey of the doctrine in India, but it also talks about its applicability across countries such as the United States of America & United Kingdom.

The word "Ultra vires" is a Latin term which means "beyond the powers of" and is commonly used to refer to the acts undertaken by a corporation or its officers, which are outside the powers granted to them under law or corporate charter. The historical existence of the Doctrine of Ultra Vires can be traced back to the period of 1855 when the concept of limited liability was made applicable. The concept of Limited Liability made the liability of the shareholders limited. So, before this concept, the creditors were protected as the shareholders were liable to an unlimited extent but after this concept, the creditors found themselves to be in an unsecured state. So, in order to protect them, the doctrine of Ultra Vires was formulated. This doctrine can be applied not only in cases of companies and corporations but also in other areas, such as matters of legislation. It is also applicable to LLP's keeping in mind the similar characteristics that they possess to that of a corporation. Though the doctrine was never codified, it sets out the main criteria for deciding the legitimacy of an act. In 1875, the case of Ashbury Railway Carriage and Iron Company (Ltd.) v. Hector Riche for the first time mentioned the Doctrine of Ultra



Vires.<sup>1</sup> In the present case, Ashbury Railway Carriage and Iron Company were involved in the business of maintaining, selling and lending of Railway Carriages. It was found out that the company acted beyond its scope as they extended the loan to Riche for the purpose of Building railway in Belgium. Later, the company refused to perform their part in the contract by saying that their act was beyond the object clause in their Memorandum of Association. Riche sued the company for the same and the company took the defence of Doctrine of Ultra Vires. Riche argued in favor of the enforceability of the contract on the grounds of approval of the contract by the board of directors of the company. The court, in this case, held that even though the board of directors of the company had ratified the contract, the same will remain void and will be unenforceable. This was further upheld in the case of Attorney General V. Great Eastern Company.<sup>2</sup> The court, in this case, held that of Ashbury case was correct about the doctrine but the same needs to be reasonable and fair.

The Doctrine announced its presence for the first time in India in the case of Jahangir R. Modi V Shamji Ladha,<sup>3</sup> which further got approval by the Landmark case of Laxman Swami Mudaliar v LIC of India.<sup>4</sup> The court said that the act continues to be Ultra Vires even if it was approved by the Shareholders. This lead to the companies formulating strategies to evade the Doctrine of Ultra Vires. The companies were trying to formulate an object clause which would include every business possible. This was an attempt to avoid the application of the doctrine. The object clause had quite a wide and vague meaning and they were formulated in a manner where the ancillary objects were not dependent on the main object.

### NEED AND SCOPE OF THE DOCTRINE

Even though the United Kingdom recognized the very existence of the concept of Ultra Vires long back in the year 1612, however, it was only in the year 1855 when it was for the first time acknowledged as an important principle of law.<sup>4</sup> In 1866, the doctrine of Ultra Vires got judicial recognition in India by the

virtue of a Bombay High court judgment. Earlier, the doctrine of Ultra Vires was not needed because it was sole proprietorships and partnerships that were the most common type of businesses that existed and operated during that period. Both, sole proprietorships and partnerships, have one feature in common, that is, of unlimited liability where no distinction is made between the owner of the business and the business itself and in case the business goes into crisis, then the creditors have the option of juicing the owners down to their last penny to recover the loans.<sup>5</sup> In such cases, the creditors are always protected and they always have an assurance of recovering back their money, even if it would mean that the owner has to attach his personal assets to indemnify the debt of the firm.

However, in 1855, the parliament of the United Kingdom established the concept of Limited Liability Partnerships by introducing the Limited Liability Act by the virtue of which the partners will have limited liability in their business beyond which they won't be liable to indemnify the debt of the company.<sup>6</sup> This Act separated the company from its partners and they were no longer be exposed to the unlimited liability for the debts of the company. They will only be held liable to the extent of their capital contribution in the business or according to their profit sharing ratio, as the case may be. After the introduction of the Limited Liability Act, 1855, the creditors started having concerns regarding their ability to get back their money given to LLPs as loans. In order to provide some relief to the creditors and ensure that the partners did not misuse the concept of limited liability, the doctrine of ultra vires was formulated which renders any transaction beyond the capacity of the company as void.

The said doctrine applies to all the incorporated companies which have a separate existence in the eyes of law and those companies which have not been registered, such as partnerships and sole proprietorships will not fall under the ambit of the doctrine of ultra vires. However, not every illegal transaction or abuse of power falls within the meaning of the Doctrine of Ultra Vires, but it includes only those transactions that go beyond what a company is authorized to do. The object, goal or purpose of the company is highlighted by the object clause of the Memorandum of Association of the company and if the company exceeds the authority provided to it by its object clause of the of the Memorandum of Association, then it will fall under the scope of the Doctrine of Ultra Vires.

<sup>1</sup> 1874-75) L.R. 7 H.L. 653

<sup>2</sup> (1880) 5 AC 473

<sup>3</sup> (1866-67) 4 Bom HCR 185

<sup>4</sup> Chandok S, "CRITICAL ANALYSIS OF THE DOCTRINE OF ULTRA VIRES"

<<http://jciil.syndicate.com/wp-content/uploads/2016/09/Publication-Submission-Simran-Chandak.pdf>> accessed September 15, 2018 <sup>6</sup> *Ibid.*

<sup>5</sup> *Ibid.*

<sup>6</sup> *Ibid.*



## EVASION OF DOCTRINE

After the introduction of the Doctrine of Ultra Vires, businessmen have been seen making attempts to evade the same. They have tried to evade the Ultra Vires rule by widening the scope of their object clause. They have included all kinds of objects in their object clause of the Memorandum of Association, which a company may want to adopt in the ordinary course of their business. This, however, results in making the object clause incapable of indicating what their main object is as both main objects and general powers are stated in the objects clause of the memorandum. However, in such cases, the general powers will be taken as ancillary to the main objects and if the company is unable to carry out the main object for which it was incorporated, then it may be ordered to be wound upon the petition of the shareholder thereof.

The same can also be explained through the case of *In Re, German Date Coffee Co.*<sup>7</sup> In this case, a company incorporated to acquire and use a German patent for making coffee from dates and can also acquire other patents and inventions by purchase or otherwise in order to improve the patent or to make extensions of the patent. The majority shareholders on realizing that the German Patent could not be obtained allowed the company to continue but a petition was filed by two shareholders contending that the company should wound up on the grounds that the main object for which the company was formed had become impossible to achieve. The question before the court was whether the doctrine of Ultra Vires is applicable in this case or not? The court while answering this question held that the main object of the company was to acquire the German patent and all the other things mentioned in the object clause of the memorandum were just ancillary to that object and since the main object cannot be fulfilled, it was correct to say that the company should be wound up.

However, the use of the main object rule has been prevented by including a statement in the object clause of the Memorandum of Association, that is, “all the objects are independent and in no way ancillary or subordinate to one another.” This statement is called the independent object clause. By including this clause, then it is asserted that all the objects mentioned in the object clause are independent and not subordinate to another and the failure to fulfil one of them cannot be the basis for ordering the winding up of the company. The use of Independent object clause was criticized by the House of Lords but the device was allowed and held to be sufficient to avoid the main objects rule. In

the case of *Cotman v. Brogham*, there was a rubber company, which underwrote shares in an oil company.<sup>8</sup> Their object clause contained many objects and one of them was to subscribe for shares of other companies and also in addition to this there was another clause which states that each of the objects must be considered independently and on this ground, the court declared that the underwriting was not ultra vires. In *Re Introductions Ltd*, the court held that an “independent objects clause” cannot convert power into an object and explained the distinction between power and an object.<sup>9</sup> The former is required to be mentioned in the object clause of the memorandum and not the latter but if the powers are also mentioned then the same must be exercised to give effect to the objects stated there in.

## JUDICIAL VIEW OF THE DOCTRINE

The doctrine of Ultra Vires like the law of natural justice is not a codified law and has arisen from the various judicial pronouncements. Although the doctrine is not a direct enactment made by the legislatures, the same has a lot of importance in the contemporary period, keeping in mind the various developments happening in constitutional law and enactment of various socio-economic laws in India.

One can also observe a change that took place gradually in the attitude of the judiciary towards the doctrine over a period of time. Initially, the doctrine was not given any attention by the Judiciary. The most common type of businesses prior to 1855 was in the nature of sole proprietorship and partnerships. The reason for not having the doctrine was the fact that the court thought that the rules regarding the abovementioned businesses were sufficient in protecting the interests of the investors and creditors. However, it was only after 1855 when the doctrine got the much-deserved prominence. It was introduced in relation to the statutory companies in the background of the important developments that were taking place at that time. The most important of them was the introduction of the concept of one of them was of limited liability which made it possible for the members to have a limited liability only to the extent of their capital contribution. So, initially when the members were exposed to unlimited liability, the creditors and the investors considered themselves protected and secured but once this concept was introduced, they found themselves in a miserable condition. Hence, in order to protect the interest of the creditors, there was a need of a device that could

<sup>7</sup> (1882) 20 Ch. D. 169

<sup>8</sup> (1918) A.C. 514

<sup>9</sup> [1969] 1 ALL E.R. 887



achieve the same and thus this drew the attention of the pioneers towards the Doctrine of Ultra Vires.

The Judicial trend regarding the Doctrine of Ultra Vires is quite similar to that of the British Authorities. Nawal Kishore, C.J. in his judgment stated that the word “ultra vires only means something has been done by a person or by a body of persons which was beyond his or their powers”.<sup>10</sup> In another case, it was stated that “The expression ultra vires which strictly spoken implies an absence of jurisdiction, is often used to imply an absence of competency, hence the use of expression such as void, nullity, null and void without jurisdiction”.<sup>11</sup> Satish Chandra J. in the case of Anand Prakash & Others v. Asst. Registrar held that “The essence of the doctrine of ultra vires is that the act is done in excess of powers possessed by the person in law. This doctrine proceeds on the basis that the person has limited powers. If a person exists for a limited purpose alone and that purpose is defined by law whether expressly and, or by implications, the doctrine of ultra vires governs him and confines him to that purpose, the person can act within the four corners of its contesting instrument. The doctrine prevents him from acting beyond the conferred powers”.<sup>12</sup> In P. Janardhan v. Union of India the court said that “The term ultra vires simply means beyond the power or lack of power. An act is said to be ultra vires when it is excess of the power of the person or authority doing it”.<sup>13</sup>

### CONSEQUENCES AND EFFECTS OF THE DOCTRINE

In the case of in S. Sivashanmugham And Others v. Butterfly Marketing Private Ltd, the court held that a contract outside the purview of the objects clause of the memorandum of association of the company is an ultra vires contract and therefore, cannot be enforced by or against the company.<sup>14</sup> For e.g. A borrowing undertaken by the company will be an ultra vires borrowing if the said is done to carry out acts which overhaul the object clause of the Memorandum of Association of the company. However, steps have been taken by the Judiciary to protect the interest of such lenders, who under the assumption that the company is acting within its authority and not beyond it, has

provided them with the funds. It has been held that "An ultra vires act is not necessarily void for all purposes and the law would strive to protect innocent third parties who had relied upon the apparent validity of such an act."<sup>15</sup> Therefore, in case of an Ultra Vires borrowing, the lender can resort to any of the following measures/Reliefs:

- Injunctions — this will apply only if the money given to the company has not been spent and an injunction will be provided to prevent the company from using the borrowed money.
- Tracing— the lender can also recover the said money as long as the company possesses the same in its original form, as it was lent.
- Subrogation— if the borrowed money is spent in indemnifying the debts of the borrowing company, then the lender can subrogate and subsequently, will step into the shoes of the creditor who has been indemnified by the company with his money and can sue them to the extent of the money forwarded by him.

### Some more effects

- Personal liability of Directors- It is the responsibility of the directors to ensure that the funds of the company are being utilized only for lawful businesses of the company within the frame of their authority, as provided in the Memorandum of Association, and if the funds of the company are used for a purpose outside the purview of the memorandum, then the directors themselves will be personally liable for that.
- Ultra vires property - An ultra vires act of the company of purchasing some property will represent the company's corporate capital, and the company will continue to have right over that property even though it was acquired in a wrongful way.
- Ultra vires contracts – Such contracts are “Void Ab Initio”, and cannot become intra vires by ratification, lapse of time, estoppel etc.

### EXCEPTIONS TO THE DOCTRINE OF ULTRA VIRES

The Doctrine of Ultra Vires also has certain exceptions where the same is not applicable. These are:

<sup>10</sup> State v Nanga and Others AIR (1951) Raj page 25 Para 3

<sup>11</sup> Madhvan Pillai V State of Kerala AIR (1966) Kerala 214

<sup>12</sup> AIR (1968) All 22

<sup>13</sup> AIR (1970) Mysore Page 171

<sup>14</sup> (2001) 105 Comp. Cas Mad 763

<sup>15</sup> White and another v South Derbyshire District Council [2013] P.T.S.R. 536 90



- An act which is within the powers of the company but is beyond the authority of the directors specifically may be ratified by its shareholders in an appropriate format.
- An act which is within the powers of the company but is committed irregularly can be validated by the consent of its shareholders.
- If the company through an ultra vires act, acquires any property in the form of an investment, will continue to possess such right over that property.
- While applying the said doctrine, the consequences which are incidental to the concerned act will not be invalid unless the same is expressly prohibited by the Companies Act.
- There are some acts under the Company law, which are not explicitly mentioned in the memorandum of Association, but are impliedly within the power of the company and subsequently cannot be said to be ultra vires.
- An act of the company which is ultra vires of its Articles of Association can be validated by altering the Articles of Association.

### CSR AND THE DOCTRINE

In the light of the recent developments that have taken place in the field of corporate ethics, one can say that the question of the social obligation of the businesses to serve the community cannot be taken for granted. Nowadays, Companies also have a crucial role in an individual's life in one way or the other way, and thus, companies should not be viewed as a private domain but instead, it must be viewed as a responsible member of the society that has certain obligations with respect to the society. Profit is quite essential for the smooth functioning of any company but the same cannot be made the primary purpose of the company. A company has an obligation to serve the community at large. In India, it was the Sachar Committee that investigated the matter of social responsibilities of companies and observed that it is not possible for any business house to live in isolation from the national problems like unemployment, overpopulation, the problem of pollution etc. Now, when we look at both the Doctrine of Ultra Vires and CSR together, it has been seen that the doctrine comes in the way of discharging the social obligations of the company and therefore renders such activities as void due to the fact that the same is not mentioned in the object clause of the Memorandum of Association. Therefore, if the company does an act in furtherance of its social

responsibility which has not been explicitly stated in the objects clause, the same can be declared as Ultra Vires by the court and the company may not be able to continue with such activities.

The Sachar Committee while dealing with this problem stated that "It is possible that a company may be required to alter its memorandum of association with respect to the object of the company so as to carry out its activities as an obligation to the concept of social responsibility. We do not envisage any difficulty in such a course, because we have no doubt that shareholders themselves are conscious of the responsibility of the company to discharge its social obligation and it will be very co-operative to assist the management in permitting alteration to be made so that his obligation is discharged by the company without the risk of his action being declared to be ultra vires, as being beyond the objects of the company".<sup>16</sup>

However, even when the memorandum is amended, the court may take a different stand due to the fact that the new activities are not a part of the main objective of the company and is only power which can be exercised by achieving the main objects of the company and may declare the activity as ultra vires the objects.

The best way to deal with this problem is to have reforms in the doctrine. The main reason behind this is that if a company is considered to be as good as a natural person then any activity undertaken in order to fulfil its social obligation cannot become ultra vires.

This issue was also dealt with in the case of Dr. Lakshmanaswami Mudaliar vs. Life Insurance Corporation & Ors,<sup>17</sup> in which there was a company which got the authority from its Memorandum of Association to carry out any charitable or benevolent object or for any general public, general or useful object.

Accordingly, in pursuance of the shareholder's resolution, the directors made a payment of two lakh rupees in favor of trust. But the court, in this case, declared the same to be void stating that the transaction was an ultra vires act as the company was authorized to carry out charitable objects only if it is useful in attaining the company's own objects. It was observed that the benefit arising out of the fund utilized was incidental and thus ultra vires.

<sup>16</sup> Yadav and Ram H, "Doctrine of Ultra Vires under Companies Act 1956" (January 1, 1970) <<http://hdl.handle.net/10603/9793>> accessed September 17, 2018

<sup>17</sup> 1963 SCR Supl. (2) 887





However, it seems that the court has missed the point or purpose of doing charity. Charity is something which is done without any personal motives and for the benefit of the community. So, thus the court needs to widen the scope of the doctrine in order to include all the charitable activities which the business houses may carry out irrespective of whether it is useful or not in attainment of one's own object.

### FALL OF THE DOCTRINE

The Doctrine of Ultra Vires has proved to be quite a controversial concept and has done more damage than any due to the fact that after its implementation, the companies which were found guilty under this doctrine have now started to manipulate the objects clause of the Memorandum of Association. Companies have tried to widen the scope of the Objects clause, which makes it quite vague and ambiguous, to include all the kind of business activities that the company might carry out in their normal course of operations. They end up making all the ancillary objects independent of the main objects. The aim of having ancillary objects is to provide support to the main objects. But by allowing companies to have wide object clauses, they have been given a free license to enter into all kinds of businesses thereby escaping any liability that they would be subject to under the doctrine. Due to these practices, the companies are making the markets irregular and chaotic. The main aim of the doctrine was to prevent the companies from committing any act which is beyond its authority as provided by the objects clause of its memorandum but the companies by manipulating the objects clause have included all sorts of activities so that they won't be liable under the said doctrine. The institution of the Cohen Committee in 1945 was the first step towards the abolition of the Doctrine of Ultra Vires. The main reason behind this step was that the said act was seen as deceptive insurance for the shareholders and a trap for the third parties engaging in business with the company. The committee didn't find anything positive about the doctrine. The opinion of the Bhabha Committee, appointed by the Government of India, was also on the same lines.

A report was submitted by the committee on the basis of which the old Companies Act, 1913 was revoked and the new Act of 1956 was brought into effect. The committee also considered the said doctrine to be illusory protection for the shareholders and a trap for the third party dealing with the company.

Presently, under Section 245(1)(a) of the Companies Act, 2013, the doctrine of ultra vires gives the members and depositors of the company the right to present an application in the Tribunal to restrain the

company from acting in a manner which is ultra vires of the memorandum of association of the company.

### CURRENT STATUS OF THE DOCTRINE

India is a developing country and a growing economy. In such a country, companies hold a lot of importance as they are required to give a boost to the GDP of the country. In the light of this fact, we can say that there is a need for a doctrine which would prevent companies from acting outside the authority as provided under the object of the Memorandum of Association. Hence, the existence of such a doctrine is quite important for the growth of the corporate sector of the country. At the initial stages, every business requires funds and for this, they are dependent upon the various banks and lending institutions. The doctrine of ultra vires protects the interest of the lenders by giving them assurance that their money would be returned if the company acts outside the authority given by their object clause.

The doctrine of ultra vires has a pivotal role in India till date. In the case of Radhabari Tea Company Private Limited vs. Mridul Kumar Bhattacharjee and Other, the court held that any action taken by the board of directors of a company or the company itself which is beyond the powers which are conferred on the company and/or its directors by the objects clause of the Memorandum of Association will be said to be an ultra vires act. Section 245 (1) (a) of the new Companies Act, 2013, envisages the Doctrine of Ultra Vires and states that if a company acts outside the authority given to them by the objects clause of their memorandum of association, then they will become liable under the Doctrine of Ultra Vires. Thus, from the above discussions, we can conclude that the said doctrine will continue to play both an important and dominant role in India. The doctrine is quite an important protection for the investors and it will gain prominence as a doctrine in the time to come.

### COMPARATIVE ANALYSIS OF THE DOCTRINE BETWEEN INDIA AND UK

From the previous discussions, we got a fair idea about how the Doctrine of Ultra Vires operates in the Indian scenario. But in order to delve into the intricacies of the Doctrine, it is very important that we look it from multiple perspectives. In this section, we are going to look at the working of the aforesaid doctrine in the foreign context and try to compare it with the Indian setting.

As previously discussed, the origin of the doctrine can be traced back to England, where the same



got recognition for the first time in 1612.<sup>18</sup> But the same gained prominence only after the introduction of the Limited Liability Partnership Act, 1855. The doctrine was first applied in the case of *Simpson v. West Minister Palace Hotel* in 1860 and then was discussed in the landmark case of *Ashbury Railway carriage & Iron Co. v. Riche* in 1875, where the court further elucidated the doctrine of Ultra Vires.<sup>19</sup> The court said that the objects clause of the memorandum of association states how a company is supposed to act and the same is one of the most important documents of a company and its effect cannot be overruled by mere ratification of the shareholders. This case has a huge contribution to the evolution of the concept in England.

However, even though the concept initially got wide recognition by the judiciary in England but over a period of time, one can see that the significance and scope of the same have been reduced or narrowed down in England by both the judicial pronouncements and statues. There can be a possibility that a transaction or an action might not be mentioned in the objects clause of the memorandum of association but might be important and necessary for the betterment and survival of the business. In that case, the doctrine appears to be more of an obstacle than protection to shareholders and creditors.

This was first observed in the case of *Attorney General V. Great Eastern Railway Co.* where the courts held that if a particular activity is beneficial for the business, then that act won't become Ultra Vires merely due to its absence from the objects clause of the Memorandum of association.<sup>20</sup> This decision ended up reducing the significance of the aforesaid doctrine.

The court further narrowed down the scope of the doctrine in the case of *Bell House Ltd. V City Wall Properties Ltd* by stating that if the directors of a company are satisfied that performance of a particular activity is necessary for achieving the objective of the business even though it is ancillary, then such activity won't be considered as Ultra Vires.<sup>21</sup> This decision thus was considered to be an end of the doctrine in England. Also, the introduction of

S. 110 of the Companies Act, 1989, and S. 31 and S.39 of the Companies Act, 2006 had the same effect on the concept of ultra vires in the country where the former states that even if the objective is not mentioned in the object clause, it will not become ultra vires and can be ratified by the shareholders. Whereas the latter section provided that the ultimate decision as to which activities are within or outside the scope of the business will be taken by Courts after considering the facts and circumstances of the case.

From the above discussion, we get to know how the doctrine saw its downfall. However, the doctrine has not been eradicated completely from England but definitely, its scope has been reduced to a great extent. Now if we look the application of the doctrine from the Indian perspective, it can be said that the doctrine of ultra vires is still playing quite a significant role in the country and will continue to retain this significance in many years to come.

## CONCLUSION

From the above discussion, we can see that there has been a shift in the attitude towards the doctrine of ultra vires, which is quite trivial when one has a superficial look at the doctrine, but the same play a very big role in the functioning of any company or corporation. It has been observed that all actions/transactions that are undertaken by a company can come under the doctrine of ultra vires. The prominence of the doctrine of ultra vires cannot be taken away just because it has not been codified. This paper has clearly shown how the concept of the doctrine of ultra vires has risen to prominence India. Also, it presents an analysis of the applicability of the doctrine in India. The author would also like to recommend that certain changes must be made in the Companies Act, 2013 in order to include the doctrine of ultra vires to further enhance the value of the said doctrine. It can be said that doctrine is very essential to safeguard the interest of the investors against the ultra vires actions of the companies and that doctrine will be there in time to come.

In the case of *Rolled Steel Products Ltd v. British Steel Corporation*, the court held that the multiple usages of the word "Ultra Vires" has created a lot of confusion and the same should be strictly confined to transactions that are beyond power, authority or capacity of a company as provided by the objects clause of the Memorandum of Association and it should not include those transactions that merely reflect abuse of power by the company.<sup>22</sup> The paper

<sup>18</sup> Chandok S, "CRITICAL ANALYSIS OF THE DOCTRINE OF ULTRA VIRES"

<<http://jcil.lsyndicate.com/wp-content/uploads/2016/09/Publication-Submission-Simran-Chandak.pdf>> accessed

September 25, 2018

<sup>19</sup> (1875) LR 7 HL 653

<sup>20</sup> (1880) 5 App Cas 473 HL

<sup>21</sup> (1966) 36 Comm Cases

<sup>22</sup> [1985] 3 All E.R. 52.



shows how impossible it is to avoid the fuss and the confusion that the doctrine creates but at that same time reflects the importance that the doctrine possess under company law. We can say that striking down the doctrine will further increase the problem of confusion and will create a haywire situation. Therefore, it is important that we continue with this doctrine to allow the courts to be more specific while considering what can be said as ultra and intra vires. There is an increasing need to have a precise doctrine which tells what company can or cannot do. To put it on better terms , "Where before the emphasis in case law was upon the decision of the non-illegality of an ultra vires act, so that a defence to the act might not be sustained, the express abolishment of the ultra vires defence raises a new problem making the old distinction necessary, but from a new point of view".<sup>23</sup> There is an absence of a specific statutory provision which protects the interest of innocent third party entering into contract with company. On strict application of the abovementioned doctrine, contract by a third party with a company if found ultra vires will be held void and cannot be ratified or enforced against the third party nor the third party can enforce it.

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## DISSIMILARITIES OF USING ANTITHESIS IN THE LYRICS OF TOLEPBERGEN MATMURATOV

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### ABSTRACT

*In the article, dissimilarities of using antithesis was studied in poet T. Matmurov's lyrics. Attractiveness of antithesis can be observed through analyzing poet's some poems. Depending genre peculiarities of lyrics, it was identified that antithesis is often used effectively in poet's philosophical and publicistic lyrics. It was analyzed that antithesis is used in two forms with its composition. Dissimilarities of structures of poet's antithesis have also been studied.*

**KEYWORDS:** *Antithesis, Antithesis in one line, Antithesis in two lines, Antithesis in one repetition, Antithesis in two repetitions.*

### INTRODUCTION

In the half of the 20th century T. Matmurov was one of the poets who made a great contribution to the development of Karakalpak poetry in terms of content and form. The poet took a warm place in the hearts of readers with his philosophical works which were imbued with deep lyricism. His sang about his homeland with spiritual pride. In his poetries, morality, conscience and appreciating the goodness take the main part. In this article we aim to study the peculiarities of the use of antitheses in the lyrics of T. Matmurov. Because we believe that the discovery of his poetic abilities through a deeper study of one of the artistic phenomena in the education of the poet complements the scientific views in this area.

### MAIN PART

Among the talented people who entered the literature in the 60s of the XX century, T. Matmurov was known in poetry for his unique way, creative style. The poet bequeathed his works such as "Aq terek pe kok terek" (1964), "Lirika" (1966), "Gozzalliq oyandi" (1970), "Aysanem" (1973), "Ashlisiw" (1977), "Arziw Shameni" (1981), "Jaqsiliq sarayi" (1986), "Juldizlar janar" (1989) to his apprentices.

Artistic studies of the poet were held and studied from the scientific point of view by the literary studies M. Nurmuhamedov, S. Akhmetov, K. Khudaybergenov, T. Mambetynizov, K. Mambetov,

S. Bahadirova, K. Orazimbetov, J. Esenov, E. Eshniyazova. However, in the poet's lyrics, the artistic function of the antithesis, the features of its use are not studied insulated. This describes the relevance of the topic chosen for our article.

One of the features of the personal style of education of T. Matmurov is that it artically describes the contrast between good and evil in the world based on the lyrical feelings. The main leitmotif of the poet's education is to create an adjectivetic sense of a pedestal feelings, such as the desire for good, despair of evil, by describing the struggle of good with evil, injustice and honesty, morality. In this case, the poet is rationally use the method of describing the antithesis.

Antithesis describes the symptoms of two or more events, opposing them. In the upbringing of the poet, the method of the antithesis is rationally used to transfer contradictory phenomena into the inner spiritual world of man through a description of the external contradictory events. According to our observations, in the texts of T. Matmurov, the method of antithesis is used more effective than other poets. The main reason for this is a description of the meaning of life, the concepts of good and evil, injustice and honesty. Because an antithesis is a rational way to describe the contradictions.

Having studied the features of using antithesis we noticed that this method is rarely used in the philosophical and journalistic songs of the poet.



Scientist K. Orazimbetov said: "T. Matmuratov was a poet in his own way and with his brand. The poetic skill of the poet is that he creates an artistic image that contrasts with some details and freely gives the idea that he wants to express his thoughts opposite, ". This method of contradiction, i.e. antithesis, is widely used in poethers of the poet, especially in his philosophical songs. Philosophical lyrism, revealing the meaning of life, the concept of good and evil, morality, takes a central place in poetry of the poet. The philosophical lyrism of the poet describes the views and concepts of life, the complex nature of man, morality, dignity, especially the fight of good with evil. Antithesis is used as a really effective method in the implementation of such artistic content.

Antithesis serves to reveal a clear picture of events, with internal contradictions of the object depicted. Improves the visual and aesthetic effect of the work.

Kun siwitip baslandi izgirik,  
 Sondag waqta sargayadi jampirak,  
 Kim soylese kewillerdi muz qilip,  
 Sondag waqta baslanadi patirat,  
 Jaksilikin izi menen gul oser,  
 Jamanlikin izi menen kim oser! [ 3,74]

In this song, the poet compares good and evil in his own way. Preliminary images take on a natural phenomenon, that leaves turn yellow with the onset of cold (whistle). The image then transforms the object into the spiritual world of man, and the word " cold" symbolizes the coldness of the human heart, that is, suffering. These stories are based on the complication of evil. The song uses the method of antithesis, fully reveals and emphasizes the concept of good and evil. The yellowing of the leaves, the cooling of the mood, creates a contradiction on the basis of a truly delicate, invisible inner connection between good and evil, and this resistance is evident in the last lines. Philosophical statement of the lyrical character: "Who grows in the footsteps of evil!" a rhetorical allusion that is the root of evil.

In the song "What is life?" the poet reflected the thoughts and views of the lyrical hero on life. In this song, the lyrical hero is created on the basis of a true lover of life, a demanding hero who is involved in all its phenomena, strives for goodness, honesty and does not give up in the fight against injustice. Philosophical ideas about the nature of people, the complexity of the human inner world, are skillfully introduced into the content of the song by the antithesis method.

Tiri deyin desem  
 Jani jok onin,  
 Oli deyin desem,  
 Tiri kusagan,  
 Ol da bir adam,  
 Olmey turip olgen,

Adamlar ushin,  
 Janip jurippen,  
 Shashka ak tusejak  
 Usi kuyikten. [3,96]

The lyrical protagonist's adornment of bad habits, unpleasant actions, his assessment of people with low mental worlds and worldviews are presented by quoting contradictory concepts in each line. The poet openly described the anger and hatred of the lyrical protagonist for low-spirited, stupid people, who have a negative impact on the development of society, especially through the antithesis "tiri deyin desem jani joq", "oli deyin desem tiri", "olmey turip olgen adamlar" . The content of the poem arouses in the mind of the reader a feeling of disgust from such "living corpses".

T. Matmuratov's publicistic lyrics describe the subjective thoughts of the lyrical hero on social problems. In publicist lyricism, the antithesis is also an effective way of expressing the problems of the period, society, the contrast of the lyrical protagonist with the environment around us. In the verses like "Dunya dartlerimdi menin", "Diagnoz", "Dareje", "Geyparalardi oylap" used an antithesis to describe the lyrical protagonist's value and views on social problems. For instance:

Garri zir juwirar nege jas turip?  
 Tayaq torge shigar nege bas turip?  
 Dunyadan soraman, dunya tas qilip,  
 Eki kozin jumpip turgan emes pe. [4,122]

The poem describes the feelings, inner pains and heartaches of the lyrical hero about social problems. Injustice, uncontrollability, the suffering and devaluation of kindness in society, the artistic content of unjust deeds, as well as the content of the concepts of good and evil are equally described. In particular, the "closing of the eyes of the world" to the supremacy of good over evil is an artistic depiction of the carelessness that leads to disaster in any society. At the same time, the poet achieved an artistic result with the help of antithesis, that is, by contrasting the words "old and young man", "legs - head".

T. Matmuratov divides into two in terms of the formation of antitheses in the lyrics, that is, in terms of semantic relationship: the antithesis of antonyms and the antithesis of non-antonyms.

«Contrast, in its simplest form, is an antonym, but in other words, a form of artistic attitude that opens a wide way to the expressive content of the poem and conveys a high ideological meaning» [5,231].

Literary critic T. Boboev theoretically substantiated the artistic function of antitheses and the importance of antonyms, saying: "Antonyms, contrast pictures, contrasting images and situations form the basis of antithesis. The reason is that the contradictory phenomena are contrasted and



compared with each other, the description of the contrast allows to understand the specificity, in the process of comparison it is possible to reveal the object of the description in depth and concrete". [6, 450].

The function of antonyms of antithesis can be seen in many poems of the poet. In the poems of the poet the antonyms "low-high" are often used in artistic service.

Sen shikkan biyikke shig`a almaspan,  
 Jurtka khamirim jurmes, birak umitpa,  
 Paste dep kulme sen, men khadal bolsam,  
 Biyik bola alrman paste turip ta. [3,42]

These lines from the poem "The nature of the poet" describe the human appearance, character and position of the lyrical hero in the image of the poet. In this poem, too, the antithesis is used to show the art of content. At the same time, the lyrical protagonist's views on honesty and humanity are presented through antithesis. In the above example, with the help of the antonyms "high-low", the human height and low are contrasted, and the meaning of height is explained in depth. Depending on the value of the lyrical hero to the heights and lows, the characteristics of his character are revealed.

Contrasting development of thought in the poems of the poet also makes antitheses with "bitter-sweet" antonyms. While it is used in many poems to convey the joys of life, in the poem below it describes a mother's love for her child.

Ana degen jariklik,  
 Perzentine berib barlik dushshini,  
 Kalsadagi miyi awitkip,  
 Ozi alip kalar ashshini,  
 Sonliktan da onin atasi,  
 "Palegi ashshi" dep kabak uyedi. [3,73]

The poet uses the popular proverb "stem - bitter, fruit - sweet" as a motive to express his ideas and opinions, on the basis of which he uses the antithesis of the greatness of the mother and the infinity of her love on the basis of new poetic thinking.

When using the method of antithesis, not only antonyms are used, but also non-antonyms, that is, words that have opposite meanings in the context. In T. Matmuratov's lyrics we often find such a way of making an antithesis. For instance:

Meyli, dalalarda salkim izildi,  
 Bolsa da terekler japoragi sargish,  
 Miywaga malingan altin guzimdi,  
 Almastirgim kelmes bakharge khargiz,  
 Jaslik, meni shakirmay sen, koya tur,  
 Omirimmin altin guzi kiyatir. [7,82]

The poet's poem, which begins with the words "Kokerek khallaslamas burungyday", gives an assessment of the life of the lyrical hero of middle age. The youth and post-youth period of the lyrical protagonist's life are artistically described by the

antithesis method. In this case, the words "spring and autumn", "youth and golden autumn" are antonyms. The words "spring" and "autumn" are metaphorized, describe the periods of life depending on a person's age and contrast with each other. However, in the last lines, the epithet metaphor "golden autumn" in the opposite sense to the word "youth" is used. In the poem, through context antonyms, the lyrical hero's feelings of love for life in any period are expressed. In the poem "Gul gul donip tursin ana tabiyat" beautiful feelings in the spiritual world of the hero are described by the scenes of nature. The following antitheses were used in these scenes: "I saw a flower grow on a hard rock." At the same time, sensitivity and endurance, which are inherent in human nature, are contrasted through natural objects. This contradiction is conveyed by the metaphorical words "flower" and "hard stone".

The antithesis can be used to draw an emotional image by contrasting the object or event that is the focus of the poet's attention with the object or event that is opposite to it.

The structural specificity of the antithesis in the lyrics of T. Matmuratov is of interest to students. In this case, it is possible to come across antitheses given in one line, two lines and one strophe, or two strophes. In our opinion, each of them has its own peculiarities in application. The antitheses in a row represent a repetitive image, and the antitheses in two rows represent the object of the image as opposite. The antitheses along one or two paragraphs compare either the subject or the event in contrast.

### ANTITHESIS IN ONE LINE

Opposing words (also antonyms) which form antithesis also come in one line in poet's poems. For example, let's pay attention to the following lines from his poem called "Words to my friends":  
 Sometimes I cry, sometimes I might laugh,

Human was brought into being like this. [9,42]

These lines mean lyric character's fate, his thoughts and viewpoint about life and also we can understand that people's lives consist of obstacles such as happiness and sadness, troubles and joy. In this line "Sometimes I cry, sometimes I might laugh", antithesis description was used in one line to give the moral state of the lyric character.

Life is sometimes kind, but evil at times

This line from his poem called "Life can speak" fulfilled the role of antonym. Here, philosophical opinion about life was depicted acceptably with the help of antonyms "kind and evil". The poet was able to express depicting object with inner opposition by means of antithesis used in one line.



## ANTITHESIS IN TWO LINES

In poet's lyrics, antitheses like this are expressed through putting against the two features of depicting object.

People should love flowers,  
 Also its thorns should be loved.

Here, two features of depicting object (flower and its thorn) were put against to express lyric character's precious feelings to his dwelling place. In this way, nature of depicting object is represented by means of antithesis. The main point is portrayed by the eagerness of lyric character to his dwelling place, being ready to any duty of his motherland and loving it with its all nature and peculiarities. So, it is implied that dwelling place is also attractive with its all difficulties and troubles.

## ANTITHESIS IN ONE REPETITION.

In poet's lyrics, the way of portraying with antithesis can be found in linked one repetition form. In most cases, the thought which comes in the first two lines is put against to the last two lines.

Nothing is cold except words,  
 People feel cold with one word,  
 Nothing is hot except words,  
 People melt with one word. [7,10]

The meaning of the first two lines was put in contrast to the meaning of the last two lines on expressing the point of people's inner nature and their unclear, complex behavior. It is possible to make someone cold or melt with the influence of words. In the poem, life truth like this is expressed with antithesis. The thought in the first two lines were given in contrast to the thought of the last two lines.

## ANTITHESIS IN TWO REPETITIONS

In this case, we think that two incidents, two events are put against to each other and compared. Based on this, the inner peculiarity of depicting object is deeply expressed. For instance, two different souls are compared with each other in poet's poem called "Soul":

There's a soul: you feel hardly anything,  
 Sensing coldness like winter,  
 As if forever ice like North Ocean,  
 Saw I it felt cold in both winter and summer.

There's a soul: there grows charming flowers,  
 Poetry is better than it,  
 It is the river of great humanity,  
 Saw I it flows with high waves.[7,70]

In these lines, two different depicting objects are portrayed with their inner differences and specific peculiarities and developed in opposite direction to each other. In the first repetition, it was depicted that a person who is careless to life beauty and shows unfriendly attitude towards people around, while in

the second repetition, we can perceive that a person who feels beauty of life incidents and enjoy them, kind to other people around him. Lyric character's thoughts and feelings are portrayed about people like these. The poet puts in contrast these two repetitions on revealing life truth in large scales like this using antithesis.

## CONCLUSION

Generally, there are some dissimilarities of using antithesis in T.Matmuratov's lyrics and it depends on his specific skills on creativity. Antithesis is often used widely as an effective method on representing good meaning in his philosophical and publicistic poems. In poet's lyrics, antithesis formed with antonym words as well as not antonyms provides the attractiveness of the main point. Antithesis in poet's lyrics is also different in their structures and serves to express the meaning of poem attractively.

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## THE END OF THE KHIVA KHANATE

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### DISCUSSION

It is known that in the early twentieth century, unprecedented events took place in many parts of the world. For example, the democratic movements in Russia began to have a positive effect on the awakening of the peoples of the nation-state.

The February Revolution of 1917 in Russia began to have a positive effect on the growth of the movement for democratic reforms in Turkestan.

This process led to the struggle of the people living in the territory of the Khiva Khanate for democratic freedoms and rights. As a result, meetings, rallies and demonstrations took place in the cities of the Khiva Khanate. At a rally in Petro-Alexandrovsk (now Turtkul) on March 7, 1917, Colonel Zeytsev, the head of the Amudarya branch of the Turkestan Governor-General's Office, was asked to resign. Instead of military administration, the Council of Soldiers and Workers' Deputies and the Executive Committee of Public Security were established in Turtkul. This committee became the board of the Amudarya branch.

From April 1917, a movement for democratic reform began in the Khiva khanate as well. Armed with the idea of independence, the young Khiva people took an active part in this movement with the idea of changing the political situation in the khanate and implementing some democratic reforms. For example, on April 4, Young Khiva residents took an oath of allegiance to the interim government of the Russian military garrison in Khiva.

Attending a meeting dedicated to doing so, he asked the garrison chief to assist them in carrying out some reforms in the khanate[1,22-25].

At a time when the mood of democracy was rising, the young people of Khiva were able to persuade Asfandiyarkhan to give in. On April 5, 1917, the khan signed a program (manifesto) presented by the Young Khiva people in Khiva. The document called for the establishment of an elected Assembly and Council of Supervisors, the control of the state treasury, the construction of railways, the

post office, the telegraph, the opening of new methodical schools, and so on[2,44-45].

A 30-member Provisional Committee (Majlis) was to be set up under the khan to oversee the implementation of the reforms. In some historical literature, the name of the committee is incorrectly indicated as the office mashruta. In fact, the administration was a constitutional monarchy, which was the mode of government in the Khiva khanate at that time. On April 8, a Khiva (chaired by Boboohun Salimov) and a Council of Supervisors (chaired by Husseinbek Devonbegi Matmurodov) was formed under the khan of Khiva to govern the country[3,46] The meeting consisted of 30 people. One of the leaders of the Young Khiva Party, Polvonniyaz Hoji Yusupov (1861-1936), was tasked with stabilizing relations with the Russian government and Russian troops. Later, 19 more people, including 7 Turkmen, were included in the parliament. The young Khivaites became the ruling force in the Khiva khanate[4,105-106]

Forming the Majlis and the Council of Ministers, organizing its activities, ensuring that its documents are based on Islamic law Boboohun Salimov played a key role as a printer. Polvonniyaz Hoji Yusupov writes about this in his memoirs: "Let's not keep it a secret, we wrote in the khan's manpe that it consists of thirty representatives. After that, in consultation with Bobo Akhun Eshan, letters were sent to all the Khorezm fortresses to elect representatives to Turkmenistan, Kazakhstan and Karakalpakstan[5,83].

The Majlis and the Council of Ministers in Khiva signaled that the country was embarking on a new path - reform and democracy. The Majlis and the Council of Supervisors included clerics, businessmen, intellectuals, and heads of Turkmen clans and tribes. The attitude to this news in Khiva society was different.

The young Khivaites were pleased: they saw the establishment of a constitutional monarchy as an expression of the realization of their reformist





aspirations. Their representatives began to lead new institutions of the state. Boboohun Salimov, a well-known figure in the youth of Khiva, became chairman of the Majlis, and their leader, Husseinbek Matmurodov, was elected chairman of the government - the Council of Ministers.

In May 1917, a delegation led by Member of Parliament Polvonniyoz Yusupov was sent to Tashkent for talks with representatives of the Provisional Government. Asfandiyorkhan dissolved the parliament in June, citing military forces led by General Haydar Khoja Mirbadalov, a representative of the interim government in Khiva. Seventeen prominent young people from Khiva, led by Husseinbek Matmurodov, were arrested, and their seats in the Majlis included officials and representatives of high priests. So, the khan appointed a new Majlis (chairman - Ortiq Axun) and the Council of Supervisors (chairman of the government - Ishakhoja Khodjaev). Young Khiva residents all members of his party were declared infidels and began to retaliate ruthlessly against them[6,58].

Thus, Seventeen members of the former Majlis, led by Matmurodov, have been arrested. Boboohun Salimov was also placed under strict control. In order to consolidate the Khan's victory over the Young Khiva, and to put an end to new protests against the existing system in the khanate, the Provisional Government established the post of commissioner in Khiva on 25 July. In September 1917, Colonel Zeytsev arrived in Khiva with a large Cossack detachment. He supported the khan in his struggle against the Young Khiva. On November 21, a "Sharia court of judges" was held against the young Khiva residents. In November 1917, Asfandiyorkhan, with the help of Russian Cossacks, completely abolished the Majlis. The Young Khivaites, defeated in the struggle against the khan's oppressive regime, were forced to leave the country[7,107].

In November-December 1917 Polvonniyoz Yusupov, Nazir Sholikorov (1881 - 1938) arrived in Tashkent, Mulla Jumaniyaz Sultanmurodov in Petro-Alexandrovsk (now Turtkul)[8,176]. Other leaders of the Young Khiva Party, Husaynbek Matmurodov, Ishakhoja Khojaev, Abdusalom Hoji Islamkhodjaev, Hoji Avazberdi Eshonov, were executed on May 18, 1918 by order of the khan[9,12].

These events played a decisive role in the later political life of the Khiva khanate. On the one hand, the forces supporting the order of absolute domination in the khanate were united and intensified, and the khanate ruthlessly shaped its policy. On the other hand, there have been changes in the opposition movement as well. When the crude idea of peaceful reform of society was dashed, some of the Jadids, especially the liberal wing renounced active political struggle, the other part - the Young

Khiva people changed the style of struggle drastically, took the path of armed struggle against the ruling regimes.

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# INFORMATION SYSTEMS DEVELOPMENT PLAN FOR WATER ZIP PURIFIED DRINKING WATER

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## ABSTRACT

*Firms that embrace information systems and technology are most likely in advantage compare to those who are still in traditional systems. Specifically, Enterprise Information Systems (EIS) provides managerial support and operational support. Information systems use their efficiency in gathering, storing, processing, and distributing information to improve the organization's business processes. With information systems and technology, there are so many varieties of strategies that will support the organization to find opportunities to gain more profit.*

*Through information systems, most of the organizations are still standing firm up to now. I.S. is essential for an organization's survival. Competitions in the market keep swelling up, and information systems enable businesses to keep up and survived with those competitions or even give them a competitive edge to its oppositions.*

**KEY WORDS:** *Businesses processes and routines, Enterprise Information Systems, I.T. Infrastructure, Competitive Advantage, Operational Excellence.*

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## 1. INTRODUCTION

Information is vital to the success of an organization. Organizations must understand their internal processes and the nature of the environment to which they must adapt and respond to grow and survive. With information, decision making will be improved, and it will enhance the organization's efficiency and provide an advantage against its competitors [1]. Different business processes need precise and accurate information to function efficiently. With the help of information systems and technology, retrieving important information will be faster and more accurate.

In business, like a water refilling station, accurate information is a must because water is necessary, and a diverse client's need is to be expected. Without precise information, more operational costs, time, and work will be wasted. Business processes that need information are in high need of information technology and systems like in the accounting department where they always need, produce, and distribute information to other departments of the organization [2]. Without information systems and technology, sharing or retrieving information will be hard. The collaboration will not work well, and decision making will be delayed, or a risky decision will be made.



Almost all businesses today are computer-based and very dependent on telecommunication networks, and the internet, even the smallest kind of businesses are relying on technology. If we observe how people do business nowadays, we can say that business without technology is impossible. From communicating customers or vendors, it is essential to have a phone and a network connection. Even in the most straightforward transactions, technology is a must.

Many small organizations are afraid and hesitant to invest in information systems and technology because of various reasons, such as the cost of investment or the fear of what change it would bring to the organization. But even with these reasons, they can't stop people from using technology, nor prevent their competitors from upgrading their business processes by information systems and technology. This paper aims to propose an I.S. development plan to let organizations understand the role of information systems and technology in global business today and give them an idea of how these two will give them a competitive edge against its competitors.

### 1.1 Background of the Company

Purified water is instinctively filtered or processed to be cleaned for drinking. It reduces the unintentional exposure to toxins for it undergoes several processes that would make the water safe to drink. It also has a better taste that is good for everyday consumption. Purified Water Businesses rule the percentage of all water consumers shown by the growth of this kind of business in terms of population and continued existence in any part of the Philippines, both in cities and in rural areas[3].

One of these businesses is the Water Zip Purified Drinking Water that is owned by Nely Napuli. It was established last October 25, 2012, and it is situated in Purok Tambis, Sto. Nino, Wharf Road, Panabo, Davao del Norte. Mrs. Napuli picked this water refilling business, for she was confident that this kind of business is optimal, especially in Panabo City, where most of the water source is not ingestible. She also has the confidence that this type of business would not be quickly down since water is a necessity for humans.

They got their water source from Panabo Water District. While their stickers and the plastic seals used for the water containers are from Watersource System Technology Corporation located in CM Recto, Davao City. Their supplier for the water containers is the Bottle King Enterprises located in Tibungco, Davao City. The business also has a complete permit that makes their business legal and functional.

Water Zip Purified Water runs smoothly for more than seven years, even without any technology used aside from their CCTV (closed-circuit television), calculator, and water filtration machine. All their business operations and transactions are manual, which means they keep records of their business transactions by hand, which may result in inaccuracy or counterfeiting of records. Manually keeping the records has no guarantee that everything that was in record is accurate or correct. By just putting everything in a notebook might cause more significant problems in the future because their records might be damaged, altered, or worst it might be lost.

### 1.2 Business Processes and Current Routines

#### 1.2.1 Business Processes

If one desires to have better chances for success in business, he must complement his knowledge by studying the essential skills needed to operate whatever size business is, either small or medium-sized business[3]. Since Water Zip Purified Drinking Water's business processes are not automated, they carefully record every transaction by hand in a notebook from counting all their full and empty water containers to the delivery, to their daily point of sales, and even to their monthly and yearly inventory.

Currently, they have a total of eight (8) employees. One is the in-charge of administrative duties such as keeping records, logging and handling cash sales, and she is also the one receiving the calls or SMS from the customer's order or delivery request. Three (3) are in the processing area wherein the one is the cleaning and refilling the empty returned containers, while the other is sealing it. The last one is arranging both the empty and ready for sale water containers. He is also helping customers who personally come to the station to lift the containers they order into their car. The other four (4) are in the delivery operation.

Subsequently, Water Zip Purified Water has two (2) delivery trucks. Each of them has a driver and a helper. They are delivering in different areas every single day contingent on the schedule set. Before leaving, the administrative assistant will count first the refilled water containers that the delivery trucks bring. Upon delivery, it is the driver who collects all the payments. He has his records of how many bottles that a customer acquired and returned. After delivery, the administrative assistant will check the driver's record and payment collection. The administrative assistant is responsible for answering customer's calls or SMS wherein they prioritize customers who call rather than the one who just send an SMS. Whenever there is a



delivery request, they will immediately deliver as long as there is an available truck to transport.

The administrative assistant manually checks their daily point of sale. She also keeps a record of the hours rendered by her co-workers and their absences. Their payroll is manually computed every 15<sup>th</sup> and 30<sup>th</sup> of the month. The workers assigned in the water processing area do their overtime whenever there are lots of empty water containers returned. The administrative assistant

also accommodates customers who came by the station for their orders. They also allow weekly payment to their trusted customers. The same with their other operations, their inventory is done manually on a monthly and yearly basis for their investment return.

### 1.2.2 Current Routines

Below is the Event Table of the current business processes of Water Zip Purified Drinking Water.

**Table 1 Water Zip Purified Drinking Water's Daily Event Table**

Time	Task/Routine
8:00 AM – 9:00 AM	* Staff in the refilling room, prepares the machines, and cleaning everything in the room. * The delivery team checks the truck and also cleaning it. * The administrative secretary is preparing the list of orders and delivery.
9-00 AM – 12:00 N.N.	* Normal operation starts (Delivery, cleaning and refilling empty bottles, and receiving orders via call/SMS/directly on the counter).
Noon N.N. – 1:00 PM	* Lunch break
1:00 PM – 4:00 PM	* Back to regular operation
4:00 PM – 5:00 PM	* Reporting of total refilled bottles, reporting the delivery team, computing daily sales

As we noticed, their routines are simple, but they need precise information to function more efficiently. Their routine has no specificity like how many target bottles should be made for the day, where the delivery is, and many more. Though their work looks effortless, each of the employees needs information to do their jobs well.

### 1.3 Problems Found

As the business is running manually for more than seven (7) years, it is inevitable to face various business operations problems. These problems must be addressed for the business to be more efficient and effective in its operation to earn more profit and diminish unnecessary expenses.

Their first major problem is their record keeping. They are all keeping their transaction records by hand in a notebook or paper with no backups. Writing it in a notebook or paper has no guarantee that everything that is recorded is accurate. It can be easily altered, damaged, or lost. Transaction records are one of the cores for businesses, so it must be secure, accurate, and credible.

Since the transactions are recorded manually, computing their daily point of sale is a hassle work for the administrative assistant, considering that she has a lot of responsibility aside from managing the cash sales. At the end of the day, it consumes a lot of time to compute their daily sales that lead to additional payment for the employee's overtime at work.

Inventory is also affected by their manual record keeping. They count and trace everything manually in a

notebook. It is time-consuming to regain the data needed for the inventory. Similarly, in computing their daily point of sale, it also led to extra hours of work to personnel involved in this process.

The other problem we found is in their delivery. Though the delivery operation follows a particular schedule, there will inevitably be customers who abruptly request for water supply. They will undoubtedly transport the orders without minding the gas consumed for an abrupt delivery. They lack records for their customer's consumption, which is why there is a shortage of supply to their customers, leading to repeated transport in the same area.

### 1.4 Goals and Objectives

The main objective of this Enterprise Information System Development Plan is to help Water Zip Purified Water Refilling Station solve the shortcomings of its business processes. This development plan will help the efficiency and accuracy of their business processes and daily event routines.

#### 1.4.1 Specific Objectives

Specifically, this project will provide an essential plan using an information system that will accelerate their business processes. The following are the specific objectives aim by this development plan:

1. Provide a system that will collect all data, store them, process it, and distribute it to end-users who need it.
2. Organize all their data for easy retrieval when needed.

3. Collect their customer's water consumption and make that information to make their water delivery schedule.
4. Compute the employee's salary based on work rendered or delivery done and insurance

5. Make a monthly, quarterly, or annual report of their sales analysis.

### 1.5 Organizational Structure

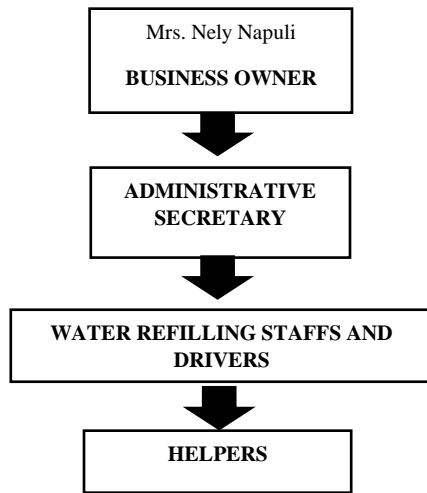


Figure 1 Organizational Structure of Water Zip Purified Drinking Water

### 1.6 Stakeholders

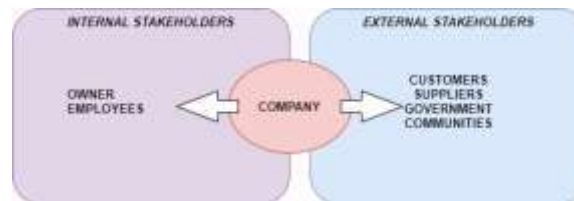


Figure 2 Water Zip Purified Drinking Water Stakeholders

## 2. PROPOSED INFORMATION SYSTEMS

After some research and studies, the authors proposed an Enterprise Information System to help the firm solve its current complications on its business processes and current routines.

### 2.1 Review of Related Studies

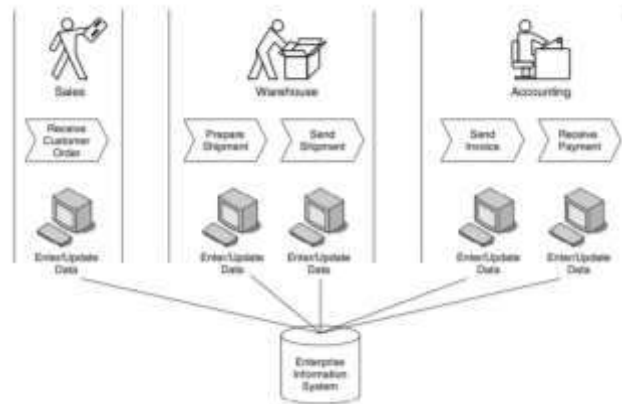
With the rapid growth of technology development, most organizations are also trying to exploit its benefits. Today, businesses with no information systems or technology merely survive. Whether organizations like it or not, the use of technology is inevitable. Many organizations adopt a new technological environment before they are overwhelmed by other firms that embrace the new trend of using technology. As we are in the midst of the

era of globalization, Small-Medium Enterprises (SMEs) are also amid survival. Their understanding and acknowledgment of the importance of information that I.S. and I.T. bring determines their survivability[4]. It is a waste of cost and effort using technology alone without a plan to where and how to use it. An information system is the best option to exploit the benefits of technology.

There are many kinds of information systems that can be used in all various sizes of enterprises. One of them is the Enterprise Resource Planning (ERP) system. Unlike other systems individually set in each department, this system is an integrated enterprise system that supports the entire business process by automating the flow of information and financial

resources across the entire organization on a shared database[4].

To make it clear, below is a representation of what an ERP system does:



**Figure 3 Representation of Enterprise System Function**

Source: Simha R. Magal and Jeffrey Word's *Essential Business Processes and Information Systems* (page 17).

Compare to other non-cohesive departmental systems, ERP offers two main aids to the organization: (1) an incorporated sight to an enterprise that covers all functions and sections; and (2) a shared database where all enterprise transactions are stored, recorded, processed, monitored, and reported[4]. This system is designed to elevate an enterprise's ability to produce appropriate and accurate information that will help them attain improved performance and productivity[5].

Some studies say that with ERP, organizations' quickness with their delivery has increased and improved their services [6]. It also improves decision-making, one of the essential factors in obtaining a competitive advantage[7]. With this system, inventory management is enhanced where less time and effort are needed[8]. Like the other systems, ERP's function cannot be exploited without the willingness of the internal stakeholders to adopt the changes it will bring and without acknowledging this system's potential.

### 2.1.1 Related System

There are a lot of choices in selecting what I.S. an organization should use. It needs a critical study and a clear envision of why an I.S. will be implemented. Today, more and more organizations are using an ERP system. Many studies have proved the effectiveness of ERP. When this system is adequately entrenched to the daily operation, management, and decision-making procedure of an organization, it can deliver a competitive advantage to them[9]. A lot of business functions are improved with the use of ERP, such as improving decision-making by producing accurate and

timely information, efficient delivery of products, and flexibility in meeting diverse client's needs [7][8].

One example of ERP was the one mentioned in one of the case studies of the book *Management Information Systems (Managing the Digital Firm)* by K.C. Laudon and J.P. Laudon[10] that is located at the end of chapter 9. The Border States Industries, which was known before as Border State Electrics (BSE) located in Fargo, North Dakota, was already a user of ERP system called Rigel since 1988. Over the years, they switched to Systems Applications and Products (SAP), which is currently the leading company for ERP systems. Their system provided Border State Industries solutions such as management of sales and distribution, materials management, financials and control, and human resources. At first, the company was having a hard time using the new ERP system from SAP. Eventually, they exploited it after embracing the new technological environment that the system brings and used the best of the system that helps them increased their profits and expand their business to various areas.

Any information systems bring changes to all aspects of an organization. Embracing these changes is the key to use its full potential that will surely deliver a competitive advantage to the organization.

### 2.2 Enterprise Resource Planning System

ERP system is an integrated enterprise system that automates the flow of information and financial resources of an organization that will help their entire business process become efficient. With this system, they can save their operational costs, secure their data, and will have a better vision of the entire organization

that will help them make right and reasonable decisions.

### 2.2.1 Functionality

- Already has a centralized module where all information needed for a specific operation was contained in the same part of the system that will allow the users to manage grouped tasks.
- Inventory management will give users more control and visibility over the organization's stocks.
- Purchasing management for the supply chain of the organization.

- Manufacturing solution gives the organization an overview of all product orders, including time tracking, operations tracking, and inventory handling.
- Sales and CRM (Customer Relationship Management) will support the organization's sales group and make customer service better.
- Data security ensures the organization's data privacy.
- It provides financial tools that will help them cater to online payments.

### 2.2.2 System Architecture

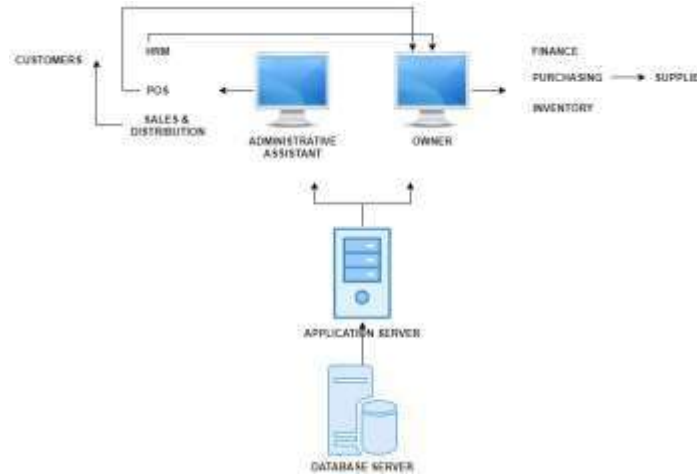


Figure 4 Water Zip Purified Drinking Water System Architecture

### 2.2.3 Economic Feasibility

Cost Description	Cost (PHP)	Total Cost
ERP Software	20,000	
Training Cost	6,000	
Customization of software	5,000	
Software Maintenance	5,000	
		<b>36,000</b>

Table 2 Economic Feasibility of Water Zip Purified Drinking Water

## 3. PROPOSED IT INFRASTRUCTURE

### 3.1 Proposed Computer Hardware

It is crucial to consider an upgrade of existing hardware or add additional investment to it, for it is essential to implement the ERP System.

### Desktop Computer

A personal computer to monitor daily transactions of the entire business and a desktop computer for the administrative assistant will help her manage the business' daily operations.



**Printer**

A printer that will print template invoices that will be used by the delivery team and by the administrative

assistant when a customer order personally at the refilling station, and for other purposes.

**Table 3 Proposed Computer Hardware**

Computer Hardware	Specs	Cost (PHP)	Qty	Total Cost (PHP)
Dell Optiplex 5260	1920 x 1080 All-in-One Desktop Computer with Intel Core i5-8500 3 GHz Hexa-Core, 8GB RAM, 128GB SSD, 21.5" 802.11AC + BT (GTVV0)	32,999.50	2	65,999
Printer	All in One	3,229 PHP	1	3,229
				<u>65,999</u>

**3.2 Proposed Operating Platform**

Authors have proposed Microsoft Windows for the Operating System since here in the Philippines most people are already familiar with the O.S. The familiarity of the user interface is just the beginning for staff. This O.S. has proven itself over many generations of quality service, especially on businesses.

**Microsoft Windows 10 Operating System**

We proposed this O.S. because of its universality that fits any kind of organization. Since the ERP system is a centralized database system, its O.S. cloud-based applications and storage will be perfect for the system. This O.S. also offers robust security through its Windows Defender Security Centre (has security protocols over applications, credentials (logins and passwords), and specific file access.

**Table 4 Proposed Operating Platform**

O.S. Platform	Unit Cost (PHP)	QTY	Total cost (PHP)
Microsoft Windows 10 Pro	14,999	1	14,999
			<u>14,999</u>

**3.3 Proposed Enterprise Software Application**

We recommend the ERPAG ERP System since they offer a module with features that fit the needs of Water Zip Purified Drinking Water. Also, this

ERP system company has many positive reviews that help us decide to recommend their software. The table below shows the full overview of the ERPAG ERP system:





**Table 5 ERPAG ERP System features**

Feature	Description	Specifications
ERPAG General	Set of modules packed into all-in-one MRP cloud-based systems.	<ul style="list-style-type: none"> <li>• Cloud-based</li> <li>• Access via a web browser</li> <li>• No installation</li> <li>• User-friendly interface</li> <li>• Free software maintenance</li> <li>• Free updates</li> <li>• Works on every O.S. (PC, Mac, Linux, etc.)</li> <li>• iOS and Android apps</li> <li>• User-based pricing</li> </ul>
Inventory Management	Advanced inventory management, including LOT, Barcode, and Serial number tracking. It also supports complex products like product variations, a Bill of materials-based items, and Kits/Assemblies. Non-inventory items included for tracking costing in complex assemblies.	<ul style="list-style-type: none"> <li>• Storage locations and bins</li> <li>• Multi-Level Bill of Materials</li> <li>• Lot tracking</li> <li>• Lot Label printing</li> <li>• Expiry dates management</li> <li>• Automatic Inventory</li> <li>• Backordering</li> <li>• Multiple-suppliers (built-in logic)</li> <li>• Tier pricing</li> <li>• Low inventory alerts</li> <li>• Shipments</li> <li>• Detailed item descriptions - attachments, plus display images or drawings</li> <li>• Import items</li> <li>• Inventory variations</li> <li>• Serial number tracking</li> <li>• Custom fields (Item, Supplier, Document)</li> <li>• Barcoding and scanning</li> <li>• Mobile app + Phone camera support for scanning (Android, iOS)</li> <li>• Returned goods Management (RMA)</li> <li>• Min quantity</li> </ul>



Manufacturing	Complete Manufacturing solution for small businesses. Track LOT and Serials, combine items in BOM and get a real-time overview of your work orders even on a mobile device. Also, know your Shop floor with time track, operations track, and inventory handling.	<ul style="list-style-type: none"> <li>• Bills of materials (BOM)</li> <li>• Material planning</li> <li>• Shop floor reporting</li> <li>• Manufacturing cost tracking</li> <li>• Import Bills of Materials</li> <li>• Expiry date management</li> <li>• The expected date for each Work Order line</li> <li>• Re-work of products</li> <li>• Just-In-Time delivery</li> </ul>
Purchasing	The supply chain for small businesses. Ordering based on a predefined set of rules. Minimum qty, back-ordering, automatic fulfillment combined with multiple suppliers, tiered pricing, and multi-currency engine.	<ul style="list-style-type: none"> <li>• Purchase suggestions</li> <li>• Low inventory alerts</li> <li>• Purchase Order auto-fill from fulfillment</li> <li>• Automatic Purchase Order creation</li> <li>• Vendor information and pricelists management</li> <li>• Material forecasting based on BOM</li> <li>• The expected delivery date for materials</li> <li>• Lot tracking</li> <li>• Serial number tracking</li> <li>• Lot Label printing</li> <li>• Stock planning - bookings for production and shipments, future incoming stock</li> <li>• Low inventory alerts</li> <li>• Live inventory adjustments, incl. upload from CSV</li> <li>• Shipment planning and reporting</li> <li>• Attachments, plus display images or drawings</li> <li>• Import Products and Services</li> <li>• Products with variations</li> <li>• Expiry dates management</li> <li>• Custom fields</li> <li>• Barcoding and scanning</li> <li>• Phone camera support for scanning (Android, iOS)</li> </ul>



		<ul style="list-style-type: none"> <li>• Returned goods (RMA)</li> <li>• Multiple warehouses</li> <li>• Transfers between warehouses</li> <li>• Import vendors</li> <li>• Import purchase terms</li> <li>• Import Purchase Order</li> </ul>
Sales and CRM	Provide full support for your sales team. Track opportunities generate complex estimates paired with multi-level BOM. Implement price tier policy using ERPAG price tier engine and customer B2B portal.	<ul style="list-style-type: none"> <li>• Sales order recording</li> <li>• Sales funnel - order fulfillment from quotation to delivery</li> <li>• Automatic fulfillment generation based on sales, low levels</li> <li>• Estimating costs and delivery time</li> <li>• Customer contact management</li> <li>• Customer sales report</li> <li>• Invoicing</li> <li>• Import sales order</li> <li>• Sales management</li> </ul>
Finance	Complete set of financial tools	<ul style="list-style-type: none"> <li>• Invoicing</li> <li>• Actual Costing</li> <li>• Manufacturing overhead cost</li> <li>• Services and operations cost</li> <li>• Cashflow forecast</li> <li>• Sales Report</li> <li>• Cost-profit reports</li> <li>• Order recording</li> <li>• End to end tracking (From sales to manufacturing to ordering, to delivery)</li> <li>• Estimating costs and delivery time</li> <li>• Customer contact management</li> <li>• Customer and sales management</li> <li>• Invoicing</li> <li>• Import customers</li> <li>• Import sales order</li> <li>•</li> </ul>

Source: ERPAG Official Website

Among all these features, we proposed the Inventory Management System, Sales and CRM system, and

Finance. Below is the proposed ERP System Cost per month:



**Table 6 Enterprise System Cost**

ERP Application	Specs	Unit Cost (PHP)	QTY	Total Cost (PHP)
Standard Plan	Five user account  All features  Video Training Material  Integrated in-app chat  E-mail support  Server computing resources: High  Database size: 10GB	3,933.65	3	11,800.95
				<u>11,800.95</u>

**3.4 Proposed Data Management**

Authors proposed this type of data because of the same reason, familiarity for the users, and easy interface that makes it user-friendly.

**Table 7 Proposed Data Management**

Data Management	Type	Specs	Cost	Qty	Total cost (PHP)
Microsoft 365 Family		Up to 6 users  1TB of cloud storage per user  Access (P.C. only)  Excel  Outlook	4,699	1	4,699



	PowerPoint			
	Publisher (PC only)			
	Word			
	Skype			
	OneNote			
				<u>4,699/year</u>

### 3.5 Proposed Network and Telecommunications

Since the ERPAG ERP system is cloud-based, an internet connection is a must. Their office is also located at the center of the city, so a stable connection is assured.

**Table 8 Proposed Telecommunication Network**

Network and Telecommunication	Specs	Unit Cost (PHP)	Qty	Total cost (PHP)
PLDT Enterprise	50mbps (Fiber)  Business-Grade Wi-Fi  Business Landline	2,500	1	2,500
				<u>2,500</u>

### 3.6 Proposed Internet Platforms

Improves customer relationships and transactions.  
 Improving the agility of business transactions, especially in terms of cash payments.



**Table 9 Proposed Internet Platforms**

Internet Platforms	Specs	Cost/Unit (PHP)	Qty	Total cost (PHP)
Social Media Page	Own advertisement  Customer Relationship and Contact	Free	1	Free
Smart Money	Online payment for customer	Free	1	Free
Gcash	Online payment for customer	Free	1	Free
				Free

**3.7 Proposed I.T. workforce**

**Table 10 Proposes I.T. Manpower**

I.T. Personnel	Job Description	Salary
I.T. Support Technician	Installs and maintains computer systems and provides end-user technical support. Primary contact for technological issues. Train or support end-users on software and hardware.	400/day

**4. CONCLUSION AND RECOMMENDATION**

**4.1 Conclusion**

The overall study shows that Water Zip Purified Drinking Water needs an information system and technology to upgrade its business model. They've been sticking to the traditional system, the manual one, and they are still able to manage their organization somehow. But with this proposed development plan, authors have seen the potential of significant improvement for their organization performance and will robust their profit.

**4.2 Recommendation**

Hopping from the traditional system to automated one will surely overwhelm the organization. But we

recommend their earnest patience and willingness to adopt the new environment for the betterment of the business. We recommend the ERP system because it is user-friendly and fits an organization like Water Zip Purified Drinking Water, which jumps off from the traditional system to automated one. Several studies have already proven the effectiveness of the ERP systems as long as the organization is willing to adopt and acknowledge its full potential. It will help the organization achieve operational excellence and it can also provide a competitive advantage.



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## FASCINATING DIOPHANTINE 3-TUPLES FROM THE PAIR OF INTEGERS $\{u, v\}$

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### ABSTRACT

*This paper concerns with the construction of sequences of diophantine 3-tuples  $(a, b, c)$  from the pair of integers  $\{u, v\}$  such that the product of any two elements of the set added by  $D(\alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2)$  is a perfect square.*

**KEYWORDS:** *Diophantine 3-tuples, sequences of triples*

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### INTRODUCTION

The problem of constructing the sets with property that product of any two of its distinct elements is one less than a square has a very long history and such sets have been studied by Diophantus. A set of  $m$  distinct positive integers  $\{a_1, a_2, a_3, \dots, a_m\}$  is said to have the property  $D(n), n \in \mathbb{Z} - \{0\}$  if  $a_i a_j + n$  is a perfect square for all  $1 \leq i < j \leq m$  or  $1 \leq j < i \leq m$  and such a set is called a Diophantine  $m$ -tuple with property  $D(n)$ .

Many Mathematicians considered the construction of different formulations of diophantine triples with the property  $D(n)$  for any arbitrary integer  $n$  [1] and also, for any linear polynomials in  $n$ . In this context, one may refer [2-13] for an extensive review of various problems on diophantine triples.





This paper concerns with the construction of sequences of diophantine 3-tuples  $(a, b, c)$  from the pair of integers  $\{u, v\}$  such that the product of any two elements of the set added by  $D(\alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2)$  is a perfect square. This paper is the generalization of [13].

### METHOD OF ANALYSIS

Let  $u, v$  be any two given non-zero integers. For convenience and clear understanding, take

$$a = u, c_0 = v$$

It is observed that

$$ac_0 + \alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2 = (\alpha k + s - w)^2$$

Therefore, the pair  $(a, c_0)$  represents diophantine 2-tuple with the property

$$D(\alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2)$$

Let  $c_1$  be any non-zero polynomial such that

$$ac_1 + \alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2 = p^2 \tag{1}$$

$$c_0 c_1 + \alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2 = q^2 \tag{2}$$

Eliminating  $c_1$  between (1) and (2), we have

$$c_0 p^2 - a q^2 = (c_0 - a) (\alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2) \tag{3}$$

Introducing the linear transformations

$$p = X + aT, \quad q = X + c_0 T \tag{4}$$

in (3) and simplifying we get

$$X^2 = ac_0 T^2 + (\alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2)$$

which is satisfied by  $T = 1, X = \alpha k + s - w$

In view of (4) and (1), it is seen that

$$c_1 = 2(\alpha k + s) + u + v - 2w$$

Note that  $(a, c_0, c_1)$  represents diophantine 3-tuple with property

$$D(\alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2)$$

Taking  $(a, c_1)$  and employing the above procedure, it is seen that the triple  $(a, c_1, c_2)$  where

$$c_2 = 4(\alpha k + s) + 4u + v - 4w$$

exhibits diophantine 3-tuple with property  $D(\alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2)$

Taking  $(a, c_2)$  and employing the above procedure, it is seen that the triple  $(a, c_2, c_3)$  where

$$c_3 = 6(\alpha k + s) + 9u + v - 6w$$

exhibits diophantine 3-tuple with property  $D(\alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2)$

Taking  $(a, c_3)$  and employing the above procedure, it is seen that the triple  $(a, c_3, c_4)$  where

$$c_4 = 8(\alpha k + s) + 16u + v - 8w$$

exhibits diophantine 3-tuple with property  $D(\alpha^2 k^2 + 2\alpha k(s - w) + s^2 - 2sw - uv + w^2)$

The repetition of the above process leads to the generation of sequence of diophantine 3-tuples whose general form is given by  $(a, c_{\partial-1}, c_{\partial})$  where

$$c_{\partial-1} = 2(\partial - 1)(\alpha k + s) + (\partial - 1)^2 u + v - 2(\partial - 1)w, \quad \partial = 1, 2, 3, \dots$$



A few numerical examples are presented in Table below:

**Table : Numerical Examples**

$\alpha$	$k$	$s$	$w$	$u$	$v$	$(a, c_0, c_1)$	$(a, c_1, c_2)$	$(a, c_2, c_3)$	Property
1	1	1	1	2	3	(2, 3, 7)	(2, 7, 15)	(2, 15, 27)	$D(-5)$
1	1	1	1	3	2	(3, 2, 7)	(3, 7, 18)	(3, 18, 35)	$D(-5)$
1	2	1	1	-2	5	(-2, 5, 7)	(-2, 7, 5)	(-2, 5, -1)	$D(14)$
1	1	1	1	2	2	(2, 2, 6)	(2, 6, 14)	(2, 14, 26)	$D(-3)$
0	0	0	$-2n-1$	$2n$	$2n+1$	$\left( \begin{matrix} 2n, 2n+1, \\ 8n+3 \end{matrix} \right)$	$\left( \begin{matrix} 2n, 8n+3, \\ 18n+5 \end{matrix} \right)$	$\left( \begin{matrix} 2n, 18n+5, \\ 32n+7 \end{matrix} \right)$	$D(2n+1)$
0	0	0	$-2n$	$2n$	$2n+1$	$\left( \begin{matrix} 2n, 2n+1, \\ 8n+1 \end{matrix} \right)$	$\left( \begin{matrix} 2n, 8n+1, \\ 18n+1 \end{matrix} \right)$	$\left( \begin{matrix} 2n, 18n+1, \\ 32n+1 \end{matrix} \right)$	$D(-2n)$
0	0	0	$-2n+1$	$2n$	$2n-1$	$\left( \begin{matrix} 2n, 2n-1, \\ 8n-3 \end{matrix} \right)$	$\left( \begin{matrix} 2n, 8n-3, \\ 18n-5 \end{matrix} \right)$	$\left( \begin{matrix} 2n, 18n-5, \\ 32n-7 \end{matrix} \right)$	$D(-2n+1)$
1	$k$	$s$	-1	$k$	$k+3$	$\left( \begin{matrix} k, k+3, \\ 4k+2s+5 \end{matrix} \right)$	$\left( \begin{matrix} k, 4k+2s+5, \\ 9k+4s+7 \end{matrix} \right)$	$\left( \begin{matrix} k, 9k+4s+7, \\ 16k+6s+9 \end{matrix} \right)$	$D \left[ \begin{matrix} (2s-1)k \\ +(s+1)^2 \end{matrix} \right]$
1	$k$	$s$	$(1-\beta)s$	$k$	$k+s$	$\left( \begin{matrix} k, k+s, \\ 4k+(2\beta+1)s \end{matrix} \right)$	$\left( \begin{matrix} k, 4k+(2\beta+1)s, \\ 9k+(4\beta+1)s \end{matrix} \right)$	$\left( \begin{matrix} k, 9k+(4\beta+1)s, \\ 16k+(6\beta+1)s \end{matrix} \right)$	$D \left[ \begin{matrix} (2\beta-1)ks \\ +\beta^2s^2 \end{matrix} \right]$
1	$k$	2	-2	6	3	(6, 3, $2k+17$ )	(6, $4k+17$ , $4k+43$ )	(6, $4k+43$ , $6k+81$ )	$D(k^2+8k-2)$

## CONCLUSION

The researchers may attempt for the formulation of other sequences of diophantine 3-tuples such that the product of any two elements of the set added by a polynomial with integer coefficient is a perfect square.

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## ASSESSMENT OF PHYSICAL AND CHEMICAL QUALITY OF DRINKING WATER IN ELOBEID CITY, NORTH KORDOFAN STATE, SUDAN

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### ABSTRACT

*This study was conducted in El-Obied City, North Kordofan State. The study comprised of 54 samples of water selected from houses, animal carts (karo), tankers, gerbas and main source of water bara basin and El-khazan (surface water) in El-Obied. The sample was divided over these sources following a process of stratified sampling combined with simple random samples with probability proportional to size of sample over the selected blocks where selection was at random in each stage. Physical and chemical testing of water was done using standard procedures. Two Samples of water were collected from the main sources of water in the City for physical and chemical analysis and 52 samples collected from blocks. The data were analyzed by computer. This study showed that 50% of the samples were without residual chlorine, and only 1.8% of samples were soft water.*

*The study showed that 3.7% of samples had pH above WHO and SSMO Standard and also showed 18.5% of samples had turbidity above 5 NTU.*

**KEY WORDS:** Assessment, physical, chemical, drinking water, El-Obied

### INTRODUCTION

Water is basic to support life, and a palatable (satisfactory, secure and available) supply must be accessible to all. Progressing get to secure drinking water can result in unmistakable benefits to wellbeing. Each exertion ought to be made to attain drinking water that's as secure as practicable (WHO, 2011). The essential capacities of society require water: cleaning for open wellbeing, utilization for

mechanical forms, and cooling for electrical era (Weiner and Matthews, 2003). Africa had the least water supply access of any locale within the world at the starting of the decade. The overall populace with get to a progressed water supply in 2000 was 62%, whereas that for progressed sanitation was 60%, (WHO-UNICEF, 2000). In this way the number of individuals without get to secure water and sanitation is 300 million and 313 million



individually, Get to secure water in rural Africa is as it were 47%. As of 2008, the most recent year for which information are accessible from the UNICEF/WHO's Joint Monitoring Program (JMP), Sub-Saharan Africa accounted for over a third of the 822 million individuals without get to made strides water supply. The locale as a entire is slacking behind in advance towards the MDG target, with 60% of the populace utilizing progressed sources of drinking-water in spite of an increment of 11 rate focuses since 1990, (ADB, 2003). The arrangement of an satisfactory supply of secure water is one of the eight components of essential wellbeing care recognized by the Universal Conference on Essential Wellbeing Care in Alma-Ata in 1978 (WHO, 1997). Much of the ill-health which influences humankind, particularly within the creating nations can be followed to need of secure and wholesome water supply. (Park's, 2015). Surface water begins from rain water. It's the most source of water supply in numerous ranges. Illustrations of surface water incorporate waterways, lakes, watercourses (water source which are dry , but in stormy season ) , man-made supplies and ocean water (Park, 2015).

## MATERIAL AND METHODS

### Study Design

Descriptive cross-sectional study.

### Study area

El-Obeid City is the biggest City in the North Kordofan State. El-Obied is one of the most important cities in North Kordofan and the capital of the North Kordofan State. Its area have been estimated as 81 km square and the distance from Khartoum is about 560 km. The population of the City is estimated as 440483 persons. There are 38000 houses, 40000 families in the City.

### Study population

Water supplies

### Inclusion criteria

Water distribution to household by animal's carts (karo) especially the far household, as well as water from tankers and gerbas, samples from housing and distribution network.

### Exclusion criteria

Water from intake and surface water (haffirs).

### Sampling

#### Sample Size

Sample size was selected according to (WHO) guidelines for water sampling measurement, which recommend to take one sample per 10,000 population, plus 10 additional samples, (WHO, 1997).

Number of population: 440483

Sample size: 44 sample + 10

Accordingly, a sample of 54 samples were obtained.

## Sampling technique

El-Obied, City was divided into four equal quarters (Clusters). The different types of blocks are considered as strata where 13 samples was selected from each quarter of El-Obeid City by using a process of simple random sample, and 2 samples were selected from water distribution network, so the total number of samples selected is 54 samples from all blocks.

## Data collection methods and tools:

### Samples Collection:-

Water samples for physical & chemical testing were collected in the sterilized bottle. The outside of the tap sterilized by flame, and then water allowed running for two minutes to wash out any organism in the pipe. The bottle then filled with water and closed immediately. A total of water samples of each in tightly sealed sterile bottles packed in cool box then submitted to ministry of health laboratory in El-Obied in the same day for analysis.

### Chemical testing of water

- Chemical testing of water done by measuring of:
- pH,
- Chlorine,
- Fluoride,
- Hardness,
- Nitrite,

Theses test done by using photometer

### Physical testing of water

To measure turbidity and colour.

### Test Method

#### Colour:

#### Reagents and equipment

Palintest colour/turbidity set.

Palintest automatic wavelength selection photometer.

#### Turbidity

#### Reagents and equipment

Palintest colour/turbidity set.

Palintest automatic wavelength selection photometer.

### Data processing & analysis

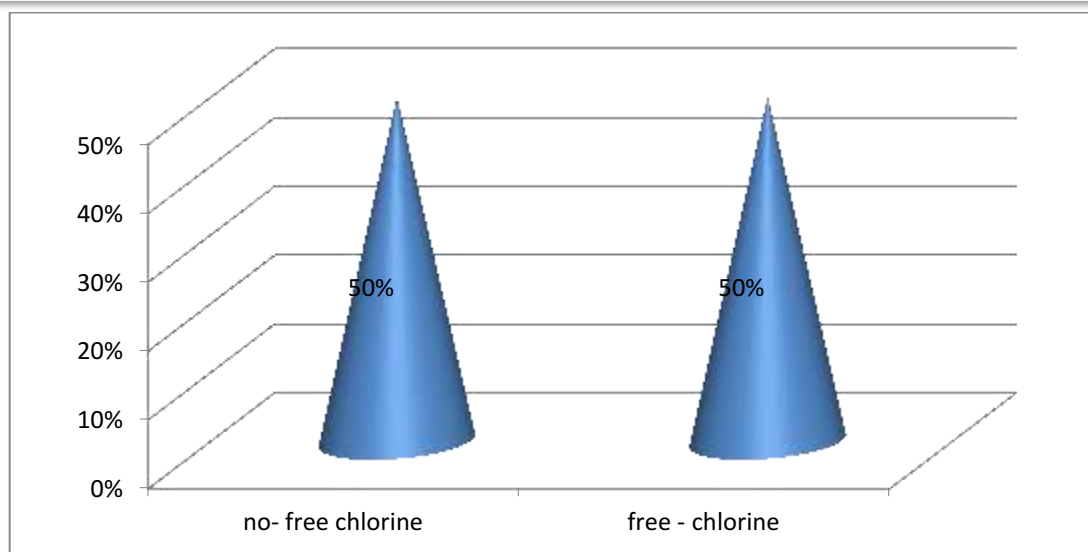
After taking samples, data were analyzed using Statistical Package for Social Sciences (SPSS) and presented by tables and figures.

### Ethical consideration

Ethical permission for the study obtained prior collection of data. The researcher contact and received approval from the appropriate management authority.

## RESULTS

The study was conducted in EL-Obied, city. To assessment physical & chemical quality of drinking water in EL-Obied City, North kordofan State. The obtained result was recorded as follow:



**Figure (1): The distribution of residual chlorine among samples in EL-Obied city n=54**

**Table (1) the chemical parameter of water and comparative with SSMO and WHO standard - in EL-Obied city n=54**

Parameter	Mean	Standard deviation	SSMO	Sample above	WHO	Sample above
PH	8	1	6.5-8.5	3.7%	6.5 - 8.5	3.7%
Hardness	187	90	NS	-	0 - 60	98.1
Fluoride	0.58	0.57	1.5	0	1.5	0
Residual chlorine	0.15	0.23	0.5	20.3%	0.5	20.3%
Nitrite	0.029	0.045	2	0	3	0

NS=No Standard

**Table (2) the degree of hardness for water - in EL-obied city n=54**

Parameter	Less than 50 (soft)	50-150(moderately hard)	150-300(hard)	Above300(very hard)
Hardness	1.8%	40.7%	46.2%	11.1%

**Table (3) the physical parameter of water and comparative with SSMO and WHO standard - in EL-obied city n=54**

Parameter	Mean	Standard deviation	SSMO	Sample above%	WHO	Sample above%
Turbidity	5	15	5 NTU	18.5%	5 NTU	18.5%
Colour	25	114	15 TCU	25%	15 TCU	35%

NS=No Standard



## DISCUSSION

This cross sectional study was carried out in El-Obied City, North kordofan State, Sudan to assess of physical & chemical quality of drinking water.

This study showed that 3.7% only of samples contained pH above SSMO and WHO Standard (Table:1), that means 3.7% from samples tend to alkaline, At pH levels above 8, there is a progressive decrease in the efficiency of the chlorine disinfection process. (Park's, 2015). and 50% samples without residual chlorine, that residual chlorine mean is 0 mg/l that is less than recommended value of WHO guideline and SSMO Standards, which is equal 0.5 mg /l in both, that make water more vulnerable to contamination because free residual chlorine provides a margin of safety against subsequent microbial contamination such as may occur during storage and distribution of water (Park's, 2015).

Most of water samples table (2); hard water and only 1.9% are soft water WHO guidelines shown hardness above 200 mg/liter, can result in scale deposition, particularly on heating. Soft waters with a hardness of less than about 100 mg/liter have a low buffering capacity and may be more corrosive to water pipes. No health-based guideline value is proposed for hardness. However, the degree of hardness in water may affect its acceptability to the consumer in terms of taste and scale deposition (WHO-2011).

The study illustrated that the value of turbidity of water distributed Table (3) about 18.5% above WHO and SSMO standard. This turbidity value exceed the maximum of WHO and SSMO standards , which equal 5 NTU for both this value is non-preferable because high turbidity interferes with disinfection and microbiological determination. (Park's, 2015)

## CONCLUSIONS

From the results and findings of the present investigation, it can be Concluded that:

The study illustrated that the concentrations of residual chlorine in most samples were zero, the other problem may be related to the road vendor of water who uses unclean tankers and unsafe water sources. Generally, it may be concluded that El.obied city drinking water has suitable physical and chemical quality as for drinking.

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# CRACKING OF THE GLASS CEILING IN THE INDIAN BANKING SECTOR

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## ABSTRACT

*Glass Ceiling is a well known term amongst the women workforce in the banking sector which functions as invisible hiccups that the women encounter in their career path hindering both their progress and success. The Indian banking sector which remained largely male-dominated have witnessed in the recent years with a change in their workforce demographics. Even though women bankers are remarkably advancing in the hierarchical ladder, they are exposed to many crucial challenges that act as a barricade in their professional growth. This disparity owes its origin to the gender inequality that has been prevalent in India since ancient times. Biasness seems to exist towards women employees in all perspective starting from hiring them to providing them financial as well as non-financial benefits. The pandemic segregation of work and male dominance in the executive machinery provide a vivid picture of the disparity that woman workforce suffer from in this banking industry. This study aims to shed light into the perspective of bank employees towards glass ceiling and also aims at highlighting the bottlenecks that aids this 'glass ceiling' and providing suggestions for breaking the same.*

**KEYWORDS:** Glass Ceiling, Banking Sector, Women workforce and Gender inequality

## 1. INTRODUCTION

For centuries, women in India have been subjected to effacement by the patriarchal society. Even after 72 years of independence from the colonial rule, the women in India have not been truly liberated. This is vividly portrayed by the Gender Gap Index released by the World Economic Forum where India has been ranked 112 among 154 nations. The report further highlights that India provides very few avenues for economic development of women. This disparity has not left the banking industry in the nation untouched. Being the backbone of the economy, jobs in the banking sector are regarded as highly coveted. Post nationalization, this sector has witnessed remarkable increase in the proportion of women workforce. Despite this parity in representation, there exists an unshakeable artificial ceiling that has subjugated the women workforce and infringed their promotion to executive positions. This roadblock in the path of development is referred to as the 'glass ceiling'. The

dogmas and orthodoxy that prevail in the society have been shielding this ceiling. Over the years, however, the women with their prowess in the industry have been resilient to guard off this male bulwark. Their relentless efforts have been able to bear fruits as cracking the 'glass ceiling' of male chauvinism, few dynamic women have been able to occupy the executive positions globally in the industry. Though this number is marginally low, however, it has come as a ray of hope for women not only to crack but shatter the 'glass ceiling' completely in years to come.

## 2. BRIEF REVIEW OF LITERATURE

Coined by Marilyn Loden in 1978, the phrase 'glass ceiling', has been able to incite widespread researches. This term was popularized in 1986 through the 'Wall Street Journal' and many researchers have taken it as their research problem to identify and address the hiccups that women encounter while rising up the corporate ladder.





**Jeavons et al. (2002)** conducted a study to evaluate the position of women in the corporate sector. The study inferred that women are usually under employed by the organizations working in positions far below their capacity

**Naqvi (2011)** in his study reflected the increase in the participation of women in the male dominated arenas and also up the hierarchical structure. This breaking of the 'glass ceiling' has been attributed to improved literacy rate of women.

**Ayranci et al. (2012)** conducted a study to analyze the reasons responsible for hindering the growth of women up the hierarchical ladder of the corporate world. The study attributed male chauvinism and stereotypical premonition of society as the backbone of the 'glass ceiling'.

**Hurn (2013)** in his study illustrates the 'double burden syndrome' where women have to cope with the complexities of family and work, as the catalyst to aggrandize the disparity followed at the workplace.

**Sachdeva (2014)** studied the gender discrimination that prevailed in the banking sector since its inception. The study analyzed the fact that there has been increase in the women workforce in the banks owing to the nationalization of banks.

**Perumal and Dastane (2017)** highlighted that Malaysian women force has been going through severe crises and their number gets thinner as they climb higher in their career paths especially in the IT sector. It was found from the study that cultural challenges viz; gender gap in mentoring, low self-esteem, gender inequality, family work-life conflict and cultural stereotype are the vital challenges which the women employees are encountering.

**Thapar et al. (2017)** conducted a study to analyze the bottlenecks that persisted in the banking sector for women, especially in the public sector banks and the role of government in regard to employees in the clerical and middle level. The study inferred that glass ceiling is evident in the Indian corporate sector in the form of conservative leadership and steps have been initiated by the Government to curb such disparity.

**Lathabhavan et al. (2018)** undertook a comparative study among public, private and foreign banks to analyze the improvement in women representation in the workforce and to describe the perception of women towards breaking of the glass ceiling. The study concluded that even though marginally, but the banks are moving towards the breaking of the glass ceiling.

### 3. SIGNIFICANCE OF THE STUDY

The patriarchal society and the undisrupted stream of orthodoxy that has been flourishing in India since ancient times have been depriving women of their

rights. However, the women have been resilient in breaking the taboos that bind them within the four walls of the house and in making their way to the corporate world. Being regarded as subservient to their male counterparts, women have been facing virtual barriers in their path of development. The gender based discrimination in the corporate world, commonly referred to as the 'glass ceiling', has emerged to be the most severe impediment to the prosperity of women. The imperturbable women, through their proficiency in world of banking have been able to make their way up the corporate ladder, though their representation in the executive positions is limited. This study will help to understand the hurdles that women employees encounter in their path of promotion as well as in highlighting the advancements the 'multi-task women' have been able to make thereby, cracking the glass ceiling. It will also help the women in the organization to climb higher in their career path by earning their due respect and recognition. It will further help the banks as well other organization in framing the required policy and thus empower and protect women force.

### 4. OBJECTIVES OF THE STUDY

The main objectives of the study are;

- i) To study the perception of the female bankers of the selected private sector commercial banks towards glass ceiling; and
- ii) To examine the bottlenecks for breaking the glass ceiling.

### 5. METHODOLOGY OF THE STUDY

**Research Design:** The research design is Descriptive in nature as it involves knowing the perception of the bankers towards glass ceiling as well as observing the bottlenecks for breaking glass ceiling without influencing the respondents in any way.

**Population:** The population of the study comprises of all the female bank employees working in private commercial banks in the city of Guwahati.

**Sampling Technique(s):** Convenience sampling technique has been adopted in the selection of the private commercial banks. Further, Quota Sampling technique is used and a fixed quota of 55 has been selected for each banks.

**Sampling Units:** The sampling units of the study consist of Axis Bank and IndusInd Bank operating in Guwahati. All the 15 Axis bank branches and 11 IndusInd Bank branches operating in Guwahati has been considered for the study.

**Sample Size:** 110 structured questionnaires has been distributed equally (i.e. 55 each) amongst the female bankers of the selected private sector commercial



banks. But however, only 49 responded back from Axis bank and 52 respondents returned their questionnaire from IndusInd bank. Thus, the sample size consists of 101 respondents.

**Data Collection:** Primary data was collected through a structured questionnaire which was distributed both in digital form as well as physically. Secondary data were collected from journal and research articles.

**Data Analysis:** The demographic data are analysed by using percentage analysis method and to measure the degree of agreeableness the composite/mean score and standard deviation has been calculated.

## 6. GLASS CEILING IN THE BANKING SECTOR

Inequality in the workforce has challenged women in all sectors since antiquity. In our culture women is often projected as nurturer, affectionate, soft-spoken, selfless, gentle and compassionate rather than aggressive, dominant, strong, individualistic and independent (Butler, 1976). Rather than being treated as the powerhouse of economy, women have always been regarded as dependent on their male counterparts. The veils of patriarchy have often deprived them of the limelight and instead offered them a seat at the back. Robertson et al. (2011) emphasized that male character is the most favoured one in comparison to the female character.

Engagement of women in the banking industry had started as even before the World War I. However, their growth over the ages has not precipitated. In India, the deep rooted orthodoxy has further escalated

the disparity in workforce representation. With marginal percentage of female in the labour force, the existence of male bulwark is evident even in contemporary times. The nationalization of banks in 1969 and the paradigm shifts in the society however, has worked to improve the position of women in the banking sector. Though the artificial barriers impose abstinence on the development and promotion of women, there have been instances of the buoyancy of women cracking the glass ceiling and paving a way for executive position. Arundhati Bhattacharya, former Chairperson of State Bank of India, Shikha Sharma, former Managing Director and CEO of Axis Bank, Shanti Ekambaram, President (Consumer Banking) of Kotak Mahindra Bank, Naina Lal Kidwai, former head of HSBC India and President of Indian Chambers of Commerce and Industry, Chanda Kocchar, CEO and Managing Director, ICICI bank, Kalpana Morparia, CEO JP Morgan (India) are few of the instances where the paradigm shifts from the pandemic male chauvinism to competence recognition has been espied, disregarding the gender biasness.

## 7. DATA ANALYSIS AND INTERPRETATION

**Table 1: Showing demographic details:**

Variable	No.	Percentage (%)
<b>Age:</b>		
21-30	52	51
31-40	41	41
41-50	08	08
51-60	00	00
<b>Work Experience:</b>		
1-5 years	59	58
6-10 years	27	27
11-15 years	14	14
16-20 years	01	01
More than 20 years	00	00

Source: Field Survey, January-February 2020

### Interpretation

The age group of the respondents mostly comprises the young adults within the age group 21-30 years (51%) followed by the adult group in the category 31-40 years (41%). Similarly the work experience of the respondents is highest in the bracket

1-5 years (58%) followed by the respondents who have a work experience of 6-10 years (27%).



**Table 2: Showing the perception of the bank employees towards glass ceiling**

\*SA= Strongly Agree, MA=Mildly Agree, N= Neither Agree nor Disagree, MD= Mildly Disagree, SD= Strongly Disagree

\*\*SD= Standard Deviation

Sl. No.	Statement	SA	MA	N	MD	SD	Mean Score $\frac{\sum fx}{\sum f}$	SD $\sigma = \sqrt{\frac{1}{N} \sum fx^2 - (Ms)^2}$
1	Women and Men face the same problems at the work-place.	16	21	07	51	06	2.9	1.26
2	Women give more importance to work life balance than career advancement.	28	49	01	09	14	3.7	1.34
3	Women are not always acknowledged for their efforts and success.	21	46	09	18	07	3.6	1.05
4	Women will encounter sexist barriers in the career path.	38	47	03	05	01	3.9	1.46
5	There is inequality with men in terms of financial and non-financial benefits.	04	13	02	43	39	2	1.15

Source: Field Survey, January-February 2020

**Chart 1: Showing the perception of the bank employees towards glass ceiling**



Source: Table 2

**Interpretation**

In order study the degree of agreeableness, the mean score of all the statements are calculated. Thus, it has been observed that the Mean score of the Statement 4 i.e. ‘Women will encounter sexist barriers in the career path’ is highest 3.9, followed by Statement 2 ‘Women give more importance to work life balance than career advancement’ which accounts for 3.7

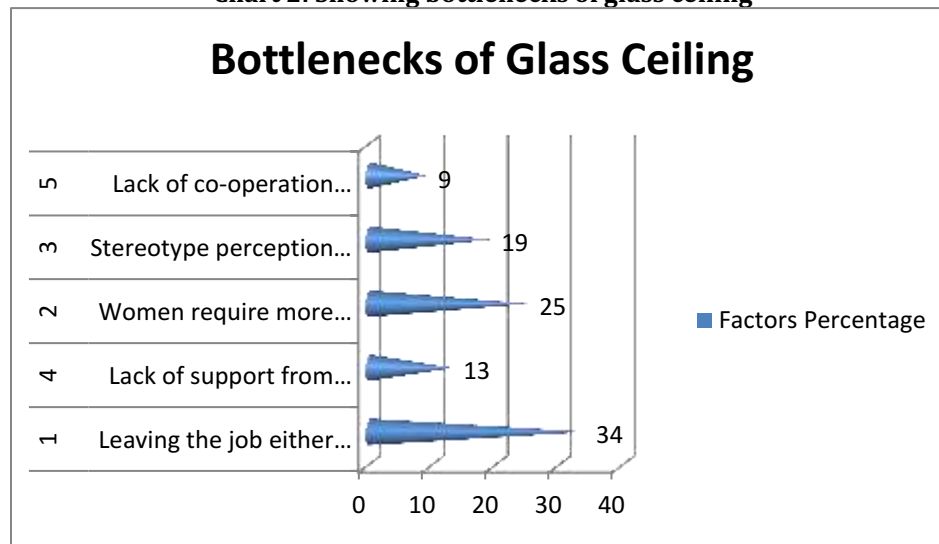
Standard deviation has also been calculated in order to examine the variability with different statements and the result shows that Statement 3, ‘Women are not always acknowledged for their efforts and success’ reveals the lowest degree of variability among the respondents, accounting for 1.05 which is followed by Statement 5, ‘There is inequality with men in terms of financial and non-financial benefits’ where the standard deviation is 1.15

**Table 3: Showing the bottlenecks for glass ceiling**

Sl. No.	Factors	Ranking	
		No.	%
1	Leaving the job either post marriage or after childbirth.	1	34
2	Lack of support from their family.	4	13
3	Women require more flexibility in work than men.	2	25
4	Stereotype perception that women cannot be good leaders.	3	19
5	Lack of co-operation from their male counterparts.	5	09
	TOTAL		100

Source: Field Survey, January-February 2020

Chart 2: Showing bottlenecks of glass ceiling



Source: Table 3

### Interpretation

The study illustrates that 34% of the respondents rated the factor 1 'Leaving the job either post marriage or after childbirth' as the prime reason for the creation of glass ceiling. It was followed by factor 3, 'Women require more flexibility in work than men' which accounts for 25%. The factor 4 'Stereotype perception that women cannot be good leaders' ranks the 3<sup>rd</sup> with 19% of the respondents agreeing it to be bottleneck too.

### 8. FINDINGS

The findings of the study pertaining to the objectives are;

- i. It was found that the bankers agreed that the women will encounter sexist barriers in their career path and that women give more importance to work life balance than career advancement.
- ii. The degree of variability was least for the statement that women are not always acknowledged for their efforts and success and also that there is inequality with men in terms of financial and non-financial benefits.
- iii. The study found that one of the most vital factors of glass ceiling is because of women leaving their job either post marriage or after childbirth which is followed by the reason that women require more flexibility in work than men.

#### General findings:

- i. It was found that women usually do not negotiate well for themselves and do not demand for extra perks and benefits.

- ii. They lack leadership ability and do not want to enter into any controversy in the workplace. They seem to be timid and hesitant to speak up especially when they outshine their male counterparts.
- iii. They have time as well as location constraints. They cannot spend more time at the office as they need to balance their personal life too. Similarly frequent travels or transfers are not desirable by women as it disrupts her family life.
- iv. Women are not risk takers and this is reflected in her decision-making ability. They exhibit lack of confidence in the boardroom which is more common amongst women. They are more conscious by 'looking glass self' rather than 'real self'.

### 9. SUGGESTIONS

The researchers have given the following suggestions;

- i. In order to remove the corporate glass ceiling small and comfortable steps should be taken starting from the base level. Recruitment and promotion should be on the basis of talent and competency rather than on the basis of gender.
- ii. The attitude regarding glass ceiling needs to be changed and this can be done only when the workforce are sensitive to the issue through proper understanding and empathy. Corporate glass ceiling can be removed only when the employees remove the ceiling which they have in their brain by identifying their limitations.



- iii. The banks should adopt a 'Zero-Tolerance Policy' in regard to harassment and discrimination. Taking up this initiative will undoubtedly boost the morale of the women and thereby will increase their productivity.
- iv. Encouraging flexible work schedules to all in order to remain impartial to any gender. Thus, flexible work timings, sabbaticals, job sharing, work from home must be embraced to encourage the employees to continue with their job.
- v. Recognitions, irrespective of gender should be approved for congenial work culture.
- vi. Banks should evolve a full proof performance appraisal system covering the entire spectrum of staff to discard any feeling of discrimination and to instill confidence amongst the women workforce.
- vii. Encouraging checks at the workplace to encounter sexual barriers and to take steps to render the workplace free of such barriers.
- viii. Women should learn to take power and be assertive and confident in their leadership roles.

## 10. LIMITATIONS OF THE STUDY

The following are the few limitations of the study;

- i. The study considered only private sector commercial banks operating in Guwahati.
- ii. The study comprised the perception of only female bankers and not male bankers.

## 11. CONCLUSION

The rise of glass ceiling in the corporate world has resulted into huge employee turnover as the women don't find a place in higher position. So, they are left with no other choices then to look for avenues in other companies with an expectation of making it to the boardroom. However, with the increasing number of women participation in the Indian banking sector has proved to be the harbinger of shattering the 'glass ceiling', the biggest impediment to women employees in walking up the hierarchical ladder of their corporate career. The pace of development has however been plodding since the years of liberation. Increased rate of women literacy and improved support from the Government, considering the fact that women employees in India differ from their western counterparts in terms of prioritizing work-life balance, will definitely go a long way in bringing parity in workforce representation and restoring the infringed rights of women. Thus, it can be concluded that glass ceiling has many cracks in it now and that the Indian private sector commercial banks are moving slowly but

consistently towards cracking the 'glass ceiling' with an anticipation of bringing positive outcomes.

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# IoT-BASED AUTOMATED ATTENDANCE SYSTEM USING RASPBERRY Pi3

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## ABSTRACT

*Everything is possible in this new era with the Internet connection, which has made the entire world a tiny global village. Using the Internet and web services, people can access the information they need and connect with others through verbal conversation, instant messaging, email, etc. We propose an approach that can be implemented in various universities, schools, colleges, and organizations. With the support of Proposed Research, workers can be automatically tracked without any traditional approaches and at a fair price relative to systems already in place. The proposed research is focused on smart devices that are inclined to school representatives, organizations, where each smart device has a different MAC (physical) address. Students can be linked to the application via MAC address and results can finally be stored, and we can generate the report regularly or weekly or monthly. Our proposed system is divided into two parts; the first is a website that can be accessed via the program management main screen such as student data registration, adding the admin to the program, etc. The second component is a system work environment that is the Micro-controller (Raspberry Pi3) which runs the device 's main script. Finally, results can be automatically obtained based on the MAC address of the students. For some exceptional cases, we developed an Android application for the admin to update all information manually. The system can currently be operated on its own, and can also be part of other integrated systems.*

**KEYWORDS:** *IoT, Raspberry Pi, MAC address, Android Application.*

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## 1. INTRODUCTION

For a long time, stakeholders in the computer networking industry have asked themselves the ever salient question, Will devices can communicate among them and execute everyday functions without human intervention?. The effort to answer this question and address this underlying need led to the development of the IoT framework. The term IoT in contrast to the internet as we know today which could be described as “The Internet of People” depicts a framework where devices are configured to communicate and execute functions whilst requiring little human effort [1]. The Internet as we know today can be mostly described as the “Internet of People” as most of the devices and gadgets on the internet are used to provide connections

essentially between people. In this regard, network services such as social networking, email, etc, have humans at the back end and require human effort on at least one side in other to completely execute the service [2]. The IoT framework on the other connects devices such that information may be transferred between the devices. A simple example of an IoT system is the example of a garage door that automatically opens sensing the proximity of a connected car. In this system, the garage door and the car have communicated and executed the action of opening the garage door without requiring human effort [3]. Another example is the case of a home system when windows and blinds are closed when an installed sensor detects the presence of rain. Again in this system, the action of window closing has been performed without





requiring human effort [4]. The term IoT was devised by British Scientist, Kevin Ashton in 1999 who used it to describe a system where objects could be connected to the internet whilst using sensors to receive information (Rose) [5].

Nowadays it's possible to link millions of devices to the Internet of Things infrastructure and make them interact with each other. Since almost all companies have this IoT infrastructure they can use the concept to automatically track employee attendance and other services. Compared to manual and semi-automated attendance, some of the advantages of automatic attendance include: reduces energy, money, better monitoring, and smaller rates of error. This paper suggests a program known as Automated Attendance System using IoT that can automatically monitor student attendance with less human interactions. This Automatic Attendance System work based on communications between machine and machine (M2 M). The proposed work automatically tracks the user by using MAC address (Media Access Control) of connected Wi-Fi devices such as a laptop network card, Mobile, video player, etc . Once the system is ready, the administrator can easily and quickly carry out manual user tests. This program will use each student's MAC address which is initially stored. The proposed system also allows a teacher to manually add attendance for the student who has no smartphone. The Automated Attendance System includes some other features such as printing the final attendance report directly from the website, monthly notification of each student's attendance, and the ability to notice the student as present in case of an emergency.

## 2. LITERATURE REVIEW

Studies so far show that the automated attendance system without human intervention is important and gaining more attention. **Mahesh Sutar et. al [6]** proposed Smart Attendance System Using RFID in IoT. With this work, an effort is made to solve the regular lecture attendance monitoring problem in developing countries using RFID technology. This system will ease is school/college to monitor the student as it reduces manpower, gives time-saving, easy control, and reliability.

**Chethana Gosal S et. al [7]** proposed a method of taking attendance using Bluetooth and Wi-Fi in Specific Region has been presented here which is automatic, paperless, quick, and accurate. A Bluetooth receiver along with a camera for face detection is used to overcome the disadvantage of proxy and biometric.

**Mahesh P et. al [8]** presented an automated attendance management system using Raspberry Pi and

NFC which is a smarter and more efficient way .with the help of such a system the attendance management system in school/colleges/universities and hence reducing the time required for attendance in class. This system applies to not only students but also teachers, employees, workers.

**Rajat Chaudhary et. al [9]** developed a wireless automatic attendance system using a fingerprint identification technique which automates the whole process of taking attendance and maintaining it. The fingerprint identification technique was used for maintaining the attendance record.

**K.Lakshmi et. al [10]** Authors proposed system is to help the teachers in college to avoid maintaining the registry book. This project uses a barcode scanner. B.B.S.A.S uses a Barcode scanner to take the attendance of students entering the lab. Each student's ID card will have a barcode at the backside of it which contains unique data of the student such as roll number, branch, and year. Etc. It will reduce the teacher's efforts to manually mark attendance and their headache of maintaining the register since everything would be stored in the database. It will also help in generating the defaulter's list on its own and send email to those students whose attendance is below the required amount.

## 3. METHODOLOGY

### 3.1 SYSTEM REQUIREMENTS

#### 3.1.1 FEASIBILITY STUDY

The proposed project is a development to promote student attendance in class and decrease the traditional method for attendance by making this process as automated when the student connects with the college wireless network. It also simplifies the job for people who are responsible for generating attendance reports through an online website and they can print it easily whenever it is required.

#### 3.1.2 Operational Feasibility

The operational feasibility of this project is high since it is user friendly because the environment of college or company appropriate to apply system, nowadays all student or employ have a smartphone and the internet networks are available in everywhere, those factors will help in project implementation and apply the system in all environments.

#### 3.1.3 Technical Feasibility

Technical feasibility analysis is the main reason that makes me think about this project, cause all techniques are available and nowadays it becomes important for our life such as smartphones, internet, and availability of electricity, all those components will create a very good connection environment that we call

the Internet of Things (IoT).

### 3.1.4 Economic Feasibility

This is the most important part of the project because I tried to do an application that will help the administration to monitor students attendance with less cost and effort, and with the possibilities available, the project will not cost student anything cause we need only Mac address, as well as the organization, will not pay for many components to implement the project,

they will use available Wifi with the application with Raspberry pi3 which does not cost much.

### 3.2 System Architecture

The system architecture shown in Figure consists of the students (MAC addresses), wireless router (gateway), Raspberry pi3 (system), Internet (webservice), and administrator for the web application.

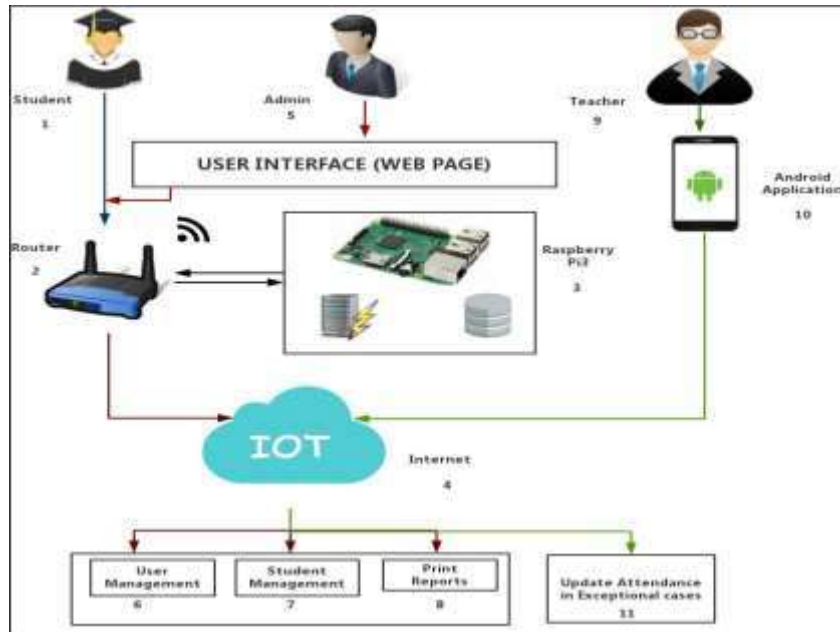


Figure1: System Architecture.

- **Students (MAC addresses):** Each student must open his WIFI network when he will reach the college morning and he must be pre-registered in the college network by Admission and Registration Department.
- **Wireless router (gateway):** A wireless router is an electronic device that works as a router meaning it sends data from the internet cable to a device and as a wireless access point. The student's devices will connect with this device via WiFi service, the wireless router is responsible to identify the MAC addresses of all phones which are connected and sent it to the system.
- **Raspberry pi3 (System):** The Pi is a tiny computer

about the size of a credit card, the board features a processor, RAM and typical hardware ports you find with most computers. This means you're able to do most things a desktop computer can do such as document editing, playing HD video, playing games, coding, and much more. In this part we will install the system which will be responsible to make most of our project, such as send request to the router to ask about connected devices and bring them MAC addresses, store those MACs in a database to do some of the processes in the future, this card can be a web server, gateway also.



**Figure 2: Raspberry Pi**

- **Internet (webserver):** The Internet is a worldwide system of computer networks - a network of networks in which users at any one computer can, if they have permission, get information from any other computer, to achieve the principle of Internet of things (IoT), the internet network is one of the fundamentals .we will build our server in the network and will make a simple website on it to do some tasks on our system such as generate reports and add students details to the system including the MAC addresses.
- **Administrator (admin):** is a person responsible for the systems which are behind our Web sites. He will be responsible of add student details and generate reports any time through the internet from anywhere. The Proposed system will start every day morning at 9:00 AM to scan the college network. When a student enters the college campus, he must connect with the college network; in turn, the Router is connected to Raspberry Pi which has a system. When a student enters a college campus, the system checks the database to ensure whether the student's MAC address is stored or not. If a particular student has been registered with his MAC address, then the system is going to monitor the student by his MAC address for a particular period (9:00 AM to 1:00 PM). The system can automatically record all traffic for each MAC address i.e. how many classes a student has attended and stored this information into a database. System Administrator can access the interface from anywhere, at any time via the website

and he can generate daily reports, monthly reports. He can also add new students, admin, teachers into the system. An Admin can also add new Admin, teachers, students, and delete & update existing users in the system. There may be some exceptional cases like if a student does not have a Smartphone if a student loses his/her phone if a student has to leave the class in middle in an emergency. To handle these issues an Android Application has been developed, with the help this Android App teachers can mark the student's attendance manually.

### **3.3 Module Description**

The proposed system consists of two modules:

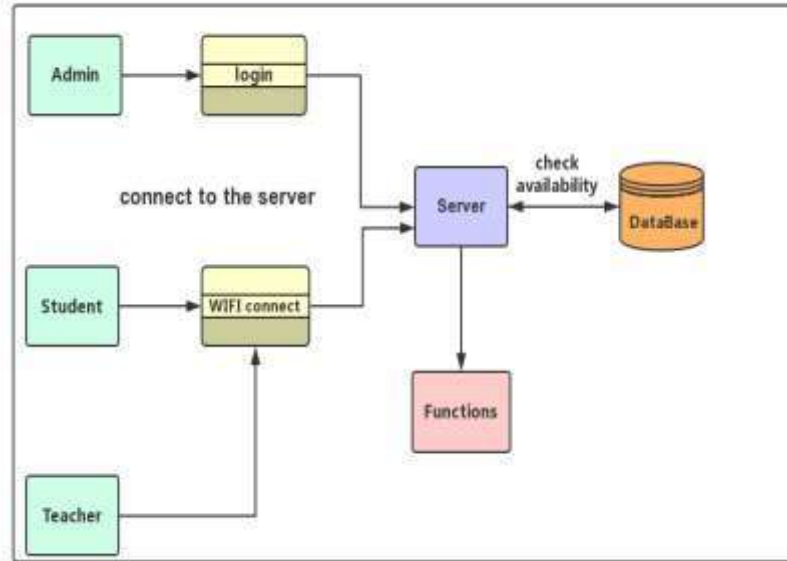
#### **Administrator Module**

In this module Admin is responsible for adding a new Admin, Teachers, and Students; remove and display information about the people who are included in the system. Also, it is the responsibility of the Admin to maintain the Attendance report and if necessary, print the reports monthly.

#### **Confirmation Module**

This module is designed for the teacher to update the student's attendance in exceptional cases. If any student does not have a Smartphone like a phone without a WiFi facility if a student loses his phone then their attendance can be updated manually by the teacher.

#### 4. DATAFLOW DIAGRAM



**Figure 3: Dataflow Diagram**

shows the Data flow diagram for the system. Admin can enter into the system via server and can monitor all management processes on the system. The student will connect with the wireless network and his information will send via server to the database to check availability. After checking the availability of Admin or user the functions will start.

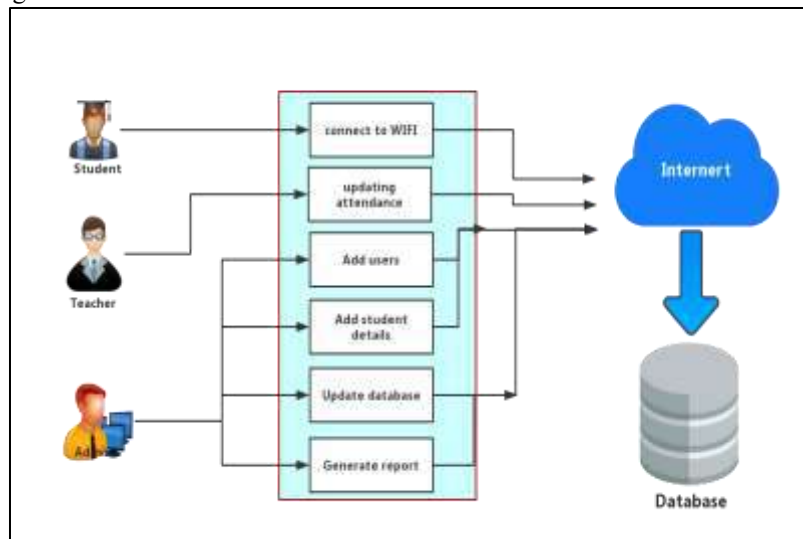
These requirements are mostly design requirements. So when a system is analyzed to gather its functionalities use cases are prepared and actors are identified.

The purposes of use case diagrams can be as follows:

- Used to gather the requirements of a system.
- Used to get an outside view of a system.
- Identify external and internal factors influencing the system.
- Show the interacting among the requirements are actors.

#### 5. USE CASE DIAGRAM

Use case diagrams are used to gather the requirements of a system including internal and external influences.



**Figure 4: Use Case Diagram**



## 6. FUNCTIONAL TEST CASES AND RESULTS

**Table 1: Test cases**

Test No.	Test Case	Expected Result	Actual Result
1	Scan the network and get all MAC Addresses.	Successfully scanned and catch all MAC Addresses.	As Expected.
2	Create a database and store the results in the database	Successfully created and information is stored.	As Expected.
3	Create a student account and filling the signup form.	Successfully created and registered.	As Expected.
4	Create a new student account with an existing MAC Address.	Alert message i.e. MAC Address already registered is displayed.	As Expected.
5	Enter a valid id and password.	Pop screen to user home page.	As Expected.
6	Enter invalid id and password.	Alert message i.e. Please fill valid user id and password is displayed.	As Expected.
7	Generate daily reports.	Successfully generated in a special form.	As Expected.
8	Generate monthly reports.	Select the chosen month then Successfully generated in a special form.	As Expected.

## 7. CONCLUSION AND FUTURE WORK

The traditional attendance system must be taken by the instructor, this caused time waste, and more proxy attendance in the manual system can be registered. We can use the advantage of new technologies to create a computerized system. Most of the current program requires other strategies or other software that have to be built on student mobile.

In our proposed application we just need all students' personal mobile phone MAC addresses that make the system at low cost. The web-based Automated attendance system is developed in this work using python object-oriented programming language, PHP server-side scripting language, and CSS, HTML, JavaScript for designing which fully meets the objectives of the system.

Our system program represents machine - to - machine (M2 M) interaction, which is the fundamental principle of the internet of things ( IoT), taking advantage of these new technologies to simplify corporate management work. The program has solved numerous shortcomings implemented in attendance, saving substantial time, and reducing mistakes that can occur during attendance measurement.

The system is completely flexible and can be used flexibly in smartphones, tablets, and various operating systems.

As future work, it is possible to implement the

evasion of attendance in organizations and colleges. For this reason, it is easier to use the IP camera to identify the face of the student and link it to the college database to increase the accuracy of the device.

As we get an enormous amount of data from the IoT platform concept of Big data is attend, we can Analyze, predict and make the decisions using Machine learning techniques based on historical data and ease the organization's management work. Managers in some companies ought to monitor the workers, For this purpose, we plan to develop a model with the help of the GPRS module to track the employee position at the organization.

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# SOCIAL MEDIA MARKETING ON INSTAGRAM: WHEN IS THE MOST EFFECTIVE POSTING TIMING?

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## ABSTRACT

*This study investigates the most effective posting timing on Instagram to enhance content engagements (i.e., likes and comments). Data of 2,958 Indonesian food brands posts were analysed using negative binomial regression to predict the number of likes and comments. This study reveals that the most effective posting days are on Monday, Tuesday, Wednesday, Thursday, and Friday as contents posted on Instagram on these days result in a higher number of likes and comments. In addition, this study also encourages food brands to post their contents during breakfast and lunch times as these times of the day prompt more likes and comments. The findings of this study will help brands and social media managers to include scheduling in their social media marketing strategy on Instagram.*

**KEYWORDS:** Social Media Marketing, Instagram, Posting Days, Posting Times, Content Engagement

## 1. INTRODUCTION

Brands employ social media as a part of their marketing mix due to the relatively low cost, interactivity, global reach, and access to data and analytics (Pinto and Yagnik, 2017). Through these features, research reveals that social media marketing improves both financial and non-financial performances (e.g., cost reduction in marketing and customer service, enhanced customer relations and information accessibility) (Ainin *et al.*, 2015). Among numerous social media platforms, brands should consider Instagram. This medium has one billion monthly active users; 200 millions of them visit at least one business profile every day (Newberry, 2019); 50% of users follow at least one brand; helps 80% of its users on deciding whether to purchase a product or service; and can generate four times more interactions compared to Facebook (Mohsin, 2020). Besides, people spend more time on it compared to other social media platforms (Vries, 2019). Although Instagram offers substantial opportunities, strategies are still required to achieve success.

In the social media marketing sphere, high content engagement (e.g., number of likes and comments) exhibits effective programme implementation (Schreiner, Fischer and Riedl, 2019).

Among other variables, as proven by previous studies (Pletikosa Cvijikj and Michahelles, 2013; Sabate *et al.*, 2014), scheduling posting time can influence likes and comments both positively and negatively. Hence knowing when to share contents will determine the performance of the content engagement. Nevertheless, brands should be aware that despite the empirical findings, the analyses focus only on Facebook. The results might be inapplicable for Instagram. Concerning this matter, those studies, as mentioned earlier, further suggest analysing factors driving content engagement (e.g., posting timing) on other social media platforms.

The discussion of Instagram posting timing is all from blogs on the internet. Jones (2020), Loren (2020), and Chi (2020) argue that Instagram algorithm prioritises new contents to show on users' feed. Consequently, brands should schedule their posts when their target audience is browsing Instagram in order to foster engagement (e.g., likes and comments) potentially. This suggestion, however, is neither verifiable, in the form of formal studies, nor based on grounded theory.

To address these research gaps, this study aims to unveil the most effective posting timing on Instagram. This study offers two contributions to social media marketing literature. First, it answers the call from previous studies to explore factors driving



content engagement (e.g., posting timing) on social media platforms other than Facebook. Second, this study provides an empirical and formal study for posting timing on Instagram. In the practical perspective, the results of this research can guide social media marketers and brand owners to schedule their posts on Instagram. The implementation of this strategy will help them to obtain higher content engagement that eventually might lead to increased consumers loyalty, purchase intention, and others.

## 2. LITERATURE REVIEW

### 2.1 Content Engagement

In social media marketing (SMM) studies (de Vries, Gensler and Leeftang, 2012; Pletikosa Cvijikj and Michahelles, 2013; Schreiner, Fischer and Riedl, 2019), content engagement and consumer engagement are often interchangeable. This study of SMM pointedly refers to content engagement as a theoretical framework. In this digital marketing era, brands and marketers pay attention to non-transactional customer behaviour (Pletikosa Cvijikj and Michahelles, 2013), in this case, content engagement. On online platforms, the term represents the measurable results of individual interaction with content on social media channels (Schreiner, Fischer and Riedl, 2019). These measurements are in the forms of likes, comments, shares (Pletikosa Cvijikj and Michahelles, 2011, 2013; de Vries, Gensler and Leeftang, 2012; Sabate *et al.*, 2014; Luarn, Lin and Chiu, 2015; Schultz, 2017), click-through rates (CTR), page views, and others depending on the service and tools offered by the platforms (Lehmann *et al.*, 2012).

Research shows that consumers who actively connect with brands' social media contents have stronger relationships with the respective brands compared to those consumers who avoid the connection (Hudson *et al.*, 2016). Studies further substantiate that content engagements affect consumer value (Schau, Jr and Arnould, 2009), trust (Casaló, Flavián and Guinaliú, 2007), brand evaluations, and purchase intention (Beukeboom, Kerkhof and de Vries, 2015). After achieving these marketing objectives, positive content engagement on social media eventually leads to sales and profitability (Rishika *et al.*, 2013). Beyond these benefits, studies verify that consumers who engage with brands on social media platforms can help brands providing value as co-creators in business processes, such as for market analysis, product development, and recommendations (De Vries and Carlson, 2014; Kabadayi and Price, 2014).

Given the favourable effects of content engagement, studies have investigated factors influencing it (Pletikosa Cvijikj and Michahelles, 2011, 2013; de Vries, Gensler and Leeftang, 2012;

Sabate *et al.*, 2014; Luarn, Lin and Chiu, 2015; Schultz, 2017). One of the aspects is posting timing. Those discussions nonetheless concentrate only on Facebook. This present research attempts to provide insights from other social media platform (i.e., Instagram) and corroborate the previous investigations. In terms of content engagement measurements, previous studies on Facebook (Pletikosa Cvijikj and Michahelles, 2011, 2013; de Vries, Gensler and Leeftang, 2012; Sabate *et al.*, 2014; Luarn, Lin and Chiu, 2015; Schultz, 2017) use likes, comments, and shares. They took these variables because they are publicly available on Facebook. For Instagram, this platform provides various measurements (e.g., reach, saves, shares, and impressions) for brand profiles. Some of this information, however, is only for the private use of the relative brands. This study of Instagram measures its content engagement through likes and comments because only these two data are available for the public.

### 2.2 Posting Days

On Facebook, posts originating from multiple sources (e.g., friends, groups, and brands) overload users' home feeds (Pletikosa Cvijikj and Michahelles, 2013). This condition also applies to users on Instagram. As such, brands' contents are likely to be stacked and hidden from users. This problem emphasises the significance of scheduling inclusion in marketing strategy (Kumar, Jacob and Sriskandarajah, 2006).

Previous studies on content engagement reveal inconclusive findings regarding the effect of posting days on likes and comments. De Vries *et al.* (2012), Sabate *et al.* (2014), and Schultz (2017) categorise the posting days into weekdays and weekends. These researchers evidence there are no significant effects of posting days on likes and comments. This indicates that posting on weekdays or weekends leads to neither higher nor lower number of likes and comments. However, it should be noted that these analyses investigate diverse industry using a limited amount of data. Pletikosa Cvijikj and Michahelles (2013) inspect food and beverage industry processing 5035 data. They reveal that posting contents on weekdays decreases the number of likes but increases the number of comments. This present research examines food brands with more than 2,000 cases. Hence the hypotheses for the effect of posting days on likes and comments are based on the latter study. The predictions are as follows:

H1a: Contents posted during Weekdays (Mondays, Tuesdays, Wednesday, Thursday, and Friday) result in a lower number of likes





H1b: Contents posted Weekdays (Mondays, Tuesdays, Wednesday, Thursday, and Friday) result in a higher number of comments

### 2.3 Posting Times

Social media users engage least during morning and early afternoon and interact the most during the late afternoon and evening (Golder, Wilkinson and Huberman, 2007; Lagrosen and Grundén, 2014). Contrary to this statement, empirical examinations provide mixed results. Sabate et al. (2014) investigate the effect of posting on business hours toward likes and comments on Facebook. They evidence that there is no significant effect for likes but significant and positive for comments. Further, Pletikosa Cvijikj and Michahelles (2013) divide the posting time into low hours (4 a.m. to 4 p.m.) and peak hours (4 p.m. to 4 a.m.). They found that Facebook users give more likes to contents posted during low hours compared to peak hours.

This study categorises posting times into breakfast (6 a.m. to 10 a.m.), lunch (11 a.m. to 3 p.m.), dinner (6 p.m. to 9 p.m.), and in-between (other than the hours as mentioned earlier). Referring to Pletikosa (2013), breakfast and lunch periods in this study include in the low hours category. On the other hand, dinner and in-between times are mostly in the peak hours group. Thus, according to Pletikosa Cvijikj and Michahelles (2013) and Sabate et al. (2014), this study predicts:

- H2a: Contents posted during breakfast result in a higher number of likes
- H2b: Contents posted during lunch result in a higher number of likes
- H2c: Contents posted during dinner result in a lower number of likes
- H2d: Contents posted during breakfast result in a higher number of comments
- H2e: Contents posted during lunch result in a higher number of comments
- H2f: Contents posted during dinner result in a lower number of comments.

### 2.4 Control Variable

Research proves that the number of followers positively affect numbers of likes and comments on social media (Sabate *et al.*, 2014). Additionally, de Vries (2019) states that social media users (e.g., individuals, influencers, and brands) are likely to purchase fake followers and likes to create inferences on the popularity of their social media accounts and contents. This impression of quality, in the end, will prompt followers to give more likes and comments. Lastly, studies reveal that remuneration affects likes (de Vries, Gensler and Leeflang, 2012; Luarn, Lin and Chiu, 2015) and comments (Pletikosa Cvijikj and Michahelles, 2013; Schultz, 2017). Due to these reasons, this study includes the number of followers,

fake followers, fake likes, and remuneration as control variables.

## 3. METHODOLOGY

### 3.1 Data Collection

Studies collecting posts from Instagram and analysing its content engagement (e.g., number of likes and comments) are still scarce (Schreiner, Fischer and Riedl, 2019). Most of them are from Facebook, and there are no generally accepted sampling procedures such as the number of brands, popularity categorisation, and data collection duration (McCorkindale, 2010; Bender, Jimenez-Marroquin and Jadad, 2011; Wallace, Wilson and Miloch, 2011; de Vries, Gensler and Leeflang, 2012; Shen and Bissell, 2013; Pinto and Yagnik, 2017). In this research, the investigation involved 40 Indonesian food brands (i.e., restaurants, packaged local snacks, street food, and pastry) whose more than 20,000 followers on Instagram. The sampling duration was one month, from 1 September 2019 to 30 September 2019. The total posts collected were 2,958, and they were the coding and analytical units for the analysis.

This study appointed 5 trained research assistants to collect the data. They conducted the procedures manually by using the Excel code sheet to record the information. Notably, for posting times, the process included visiting the brands' Instagram profiles, clicking on the posts, and inspecting the embedded codes. The time used was Western Indonesia Time (UTC+07:00). This study selected 4 random post dates from each account and checked the posting times to ensure validity. From a total of 160 random samples, there were no error data. In terms of the periods of the posts, this study divided them into 4 categories; from 6 a.m. to 10 a.m. is breakfast; 11 a.m. to 3 p.m. is lunch; 6 p.m. to 9 p.m. is dinner; the rest of the hours are in-between.

Furthermore, this study determined the control variables of followers and likes types (i.e., real or fake) according to the ratios of Angulo (2016), Tomov (2019), and Osman (2020). For the followers' types of each brand, the process began by calculating the average likes and comments the respective brand received during the one-month observation. These figures then were divided by the number of followers to obtain the likes-to-followers and comments-to-followers ratios, respectively. For the brands that owned 10,000 to 100,000 followers, if the likes-to-followers ratio < 2.37% and the comments-to-followers ratio < 0.17%, then the Instagram brand accounts had a substantial number of fake followers. For the brands that owned more than 100,000 to 1,000,000 followers, if the likes-to-followers ratio < 1.78% and comments-to-followers



ratio < 0.09%, then the Instagram brand accounts had a substantial number of fake followers. For the types of likes variable, this study divided the likes each post received by the number of followers the respected brand owned. If the likes-to-followers ratio > 7%, then the post had a substantial number of fake likes. For the remuneration variable, if the posts contained remuneration in the picture or caption (e.g., buy one free one, discounts, or other forms of remuneration), then the research assistants coded them as remunerated.

### 3.2 Analysis Method

Dependent variables of this study are count data of the number of likes and comments. The variances of these data are much higher than their means. As such, these data are overdispersed. To overcome the problem, this study employs Negative Binomial in the analysis (Cameron and Trivedi, 2013), following Pletikosa Cvijikj and Michahelles (2013). The model to explain the number of likes and the number of comments based on days can be expressed as:

$$\text{Log}(y_{ij}) = \alpha + \sum_{a=1}^6 \beta_a \text{days}_{aj} + \beta_f \text{Log}(\text{nfollowers}_j) + \beta_f \text{follow}_j + \beta_l \text{likes}_j + \beta_p \text{remu}_j$$

where

$y_{ij}$   $y_{1j}$  or  $y_{2j}$ ; the number of likes per brand post  $j$  or the number of comments per brand post  $j$ , respectively,  
 $\text{days}_{dj}$  dummy variables post  $j$  was posted at day  $d$  (baseline category is Sunday),  
 $\text{nfollowers}_j$  indicating the number of followers the brands have during brand post  $j$ ,  
 $\text{follow}_j$  dummy variable indicating whether brand post  $j$  was posted by brands

with a substantial number of fake followers (baseline real followers),  
 $\text{likes}_j$  dummy variable indicating whether brand post  $j$  has a substantial number of fake likes (baseline real likes),  
 $\text{remu}_j$  dummy variable indicating whether brand post  $j$  contains remuneration (baseline no remuneration).

The model to explain the number of likes and the number of comments based on eating times can be expressed as:

$$\text{Log}(y_{ij}) = \alpha + \sum_{e=1}^3 \beta_e \text{periods}_{ej} + \beta_f \text{Log}(\text{nfollowers}_j) + \beta_f \text{follow}_j + \beta_l \text{likes}_j + \beta_p \text{remu}_j$$

where

$y_{ij}$   $y_{1j}$  or  $y_{2j}$ ; the number of likes per brand post  $j$  or the number of comments per brand post  $j$ , respectively,  
 $\text{periods}_{ej}$  dummy variables post  $j$  was posted at eating period  $e$  (baseline category is in-between),  
 $\text{nfollowers}_j$  indicating the number of followers the brands have during brand post  $j$ ,  
 $\text{follow}_j$  dummy variable indicating whether brand post  $j$  was posted by brands with a substantial number of fake followers (baseline real followers),  
 $\text{likes}_j$  dummy variable indicating whether brand post  $j$  has a substantial number of fake likes (baseline real likes),  
 $\text{remu}_j$  dummy variable indicating whether brand post  $j$  contains remuneration (baseline no remuneration).

## 4. RESULTS

### 4.1 Descriptive Statistics

As seen in Table 1, the average total followers among the 40 brands were 82,760.50 (SD=109,637.72). For the posts during the one-month observation, the total average likes the 40 brands received was 587.35 (SD=742.26), and the total average comments the 40 brands received was 24.18 (SD=33.84). Using these figures, this study calculated the likes-to-followers and comments-to-followers ratios for each brand. The analysis found that the total average likes-to-followers ratio was 1.25% (SD=2.55%), and the total average comments-to-followers ratio was 0.04% (SD=0.05%). According to these ratios, among the 40 brands, the calculation revealed 35 brands had a substantial number of fake followers and the 5 brands had real followers.

Among the 2958 Instagram contents collected, as presented in Table 2, the most posts were on Sunday (19.5%), followed by Saturday (15.2%),



Monday (15%), Thursday (13.5%), Tuesday (12.6%), Friday (12.2%), and the least posts were on Wednesday with 12%. In terms of periods, the rank of the posts from highest to lowest was during lunch, dinner, in-between, and breakfast, with the percentage of 30%, 29.3%, 25.2%, and 15.2%, respectively. Among the 2958 posts, the average likes were 104.36 (SD=213.85), and the average comments were 3.46 (SD=10.81). For the control variables, 2878 posts were from brands with considerable numbers of fake followers and 80 were from brands with real followers; 1 posts received a substantial number of fake likes and 2957 obtained real likes; 50 posts contained remuneration, and 2908 posted no remuneration.

## 4.2 Analysis Results

### *Likes and Comments Estimation Based on Days*

The model to estimate likes based on days is significant as a whole (LR  $\chi^2$  (10, N=2958) = 1469.009,  $p < 0.001$ ) (see Table 3). In terms of individual days, contents posted during weekdays evidence significant and positive effects on likes (Monday ( $\beta_{Monday} = 0.303$ ,  $p < 0.01$ ); Tuesday ( $\beta_{Tuesday} = 0.322$ ,  $p < 0.01$ ); Wednesday ( $\beta_{Wednesday} = 0.393$ ,  $p < 0.01$ ); Thursday ( $\beta_{Thursday} = 0.262$ ,  $p < 0.01$ ); Friday ( $\beta_{Friday} = 0.414$ ,  $p < 0.01$ )). Also, contents posted on Saturday are marginally significant and positive ( $\beta_{Saturday} = 0.173$ ,  $p < 0.05$ ), but still generating fewer likes compared to the weekdays. These findings show that contents posted during weekdays (Monday, Tuesday, Wednesday, Thursday, and Friday) result a higher number of likes, contrary to H1a.

The model to estimate comments based on days is significant as a whole (LR  $\chi^2$  (10, N=2958) = 302.595,  $p < 0.001$ ). In terms of individual days, contents posted during weekdays evidences significant and positive effects on comments (Monday ( $\beta_{Monday} = 0.595$ ,  $p < 0.01$ ); Tuesday ( $\beta_{Tuesday} = 0.705$ ,  $p < 0.01$ ); Wednesday ( $\beta_{Wednesday} = 0.637$ ,  $p < 0.01$ ); Thursday ( $\beta_{Thursday} = 0.528$ ,  $p < 0.01$ ); Friday ( $\beta_{Friday} = 0.389$ ,  $p < 0.05$ )). In addition, posting contents on Saturday is not significantly related to the number of comments. These findings show that contents posted during weekdays (Monday, Tuesday, Wednesday, Thursday, and Friday) result in a higher number of comments, in support of H1b.

### *Likes and Comments Estimation Based on Times*

The model to estimate likes based on eating times is significant as a whole (LR  $\chi^2$  (7, N=2958) = 1497.904,  $p < 0.001$ ) (see Table 4). In terms of individual times, contents posted during breakfast have a significant and positive effect on likes ( $\beta_{Breakfast} = 0.298$ ,  $p < 0.01$ ), supporting H2a. Likewise, contents posted during lunch have a significant and positive effect on likes ( $\beta_{Lunch} = 0.234$ ,  $p < 0.01$ ),

supporting H2b. Additionally, the model evidences that contents posted during dinner have a significant and negative effect on likes ( $\beta_{Dinner} = -0.160$ ,  $p < 0.01$ ), supporting H2c.

The model to estimate comments based on eating times is significant as a whole (LR  $\chi^2$  (7, N=2958) = 320.785,  $p < 0.001$ ). In terms of individual times, contents posted during breakfast have a significant and positive effect on comments ( $\beta_{Breakfast} = 0.756$ ,  $p < 0.01$ ), supporting H2d. Likewise, contents posted during lunch have a significant and positive effect on comments ( $\beta_{Lunch} = 0.376$ ,  $p < 0.01$ ), supporting H2e. Additionally, the model evidences that contents posted during dinner is not significantly related to the number of comments ( $\beta_{Dinner} = -0.160$ ,  $p < 0.01$ ), contrary to H2f.

## 5. DISCUSSION

### 5.1 Theoretical Implications

Findings from previous studies (de Vries, Gensler and Leeflang, 2012; Sabate *et al.*, 2014; Schultz, 2017) suggest that contents posted either during weekdays or weekends lead to neither higher nor lower content engagements (e.g., likes and comments). This statement indicates that scheduling is unnecessary in the social media marketing strategy. Contrary to this suggestion, this study on Instagram proves that posting timing determines the number of likes and comments brands' contents will generate. Specifically, brands should post their Instagram content on weekdays (i.e., Monday, Tuesday, Wednesday, Thursday, and Friday) instead of on weekends (i.e., Saturday and Sunday) to receive more likes. This evidence also contradicts to Pletikosa Cvijikj and Michahelles (2013), stating that contents posted during weekdays will result in a lower number of likes. In terms of comments, the results are in line with Pletikosa Cvijikj and Michahelles (2013). Contents posted during weekdays prompt a higher number of comments.

Concerning the times of the day, this study reveals that the number of likes for contents increases during breakfast and lunch and decreases during dinner posting times. These outcomes are contradictory with Sabate *et al.* (2014) but in line with Pletikosa Cvijikj and Michahelles (2013). Additionally, for comments prediction, contents posted during breakfast, as well as lunch, agree and during dinner disagree with those findings of Sabate *et al.* (2014) and Pletikosa Cvijikj and Michahelles (2013). Posting during breakfast and lunch on Instagram generates a higher number of comments, while during dinner, it causes neither higher nor lower number of comments.

Some aspects might cause distinction in findings with existing studies (see Table 5 for summary of results). Schultz (2017) uncovers social



media content engagement contrariety between food and apparel industry. This suggests that market characteristics affect users' degree of engagement. Preliminary investigations analysed travel agency (Sabate *et al.*, 2014) and diverse industry (de Vries, Gensler and Leeftang, 2012). These data are possible to influence the results of analyses. Another factor that needs consideration is social media platforms under study. Facebook and Instagram's demographic users are varied from each other. The former is popular among older consumers, whereas the latter is dominated by younger users (Jackson, 2019). This difference in age might affect social media consumption and behaviour.

This study advances existing works of literature (Pletikosa Cvijikj and Michahelles, 2011, 2013; de Vries, Gensler and Leeftang, 2012; Sabate *et al.*, 2014; Schultz, 2017) analysing the effect of posting timing on content engagements, which only focus on Facebook. There is a need to discuss such an effect on other social media platforms (de Vries, Gensler and Leeftang, 2012; Schreiner, Fischer and Riedl, 2019). This study attempts to respond to the call by examining the effects of posting days and times on likes and comments on Instagram. By doing such, this study provides a formal and theory-grounded discussion on Instagram content engagements. Such an effort, in the end, expands the social media marketing literature.

### 5.2 Managerial Implications

Food brands (e.g., restaurants, packaged local snacks, street food, and pastry) should post their contents on Instagram during weekdays to receive higher engagements from their followers on Instagram. To inform food brands what day precisely is the best to post, this study unveils the ranks of content engagements from highest to lowest. If brands' goal is to prompt more likes, they should upload their contents more on Friday, followed by Wednesday, Tuesday, Monday, and Thursday. If their objective is to acquire more comments, they should post more on Tuesday, then Wednesday, Monday, Thursday, and Friday. Also, food brands should prioritise their plans to post during breakfast, then followed by lunchtimes to induce more likes and comments. It also should be noted that brands should avoid uploading their Instagram contents during dinner time as it will reduce the number of likes and has no effect on comments.

Such timing occurs because online activities are mostly undertaken during weekdays from schools and workplaces (Golder, Wilkinson and Huberman, 2007; Rutz and Bucklin, 2011). During breakfast and lunch periods on weekdays and in schools or working locations, users might scroll their Instagram accounts to entertain themselves. This increases the probability of brands' posts to be seen by and engaged with

Instagram users. Meanwhile, during weekends and dinner time in the evening, users have no restrictions. They can do anything. Instead of browsing Instagram, they might play games and sports or interact with friends and family.

These findings are beneficial for brands and social media managers. Contents from voluminous sources (e.g., friends, family, and businesses) inundate Instagram feeds. It is plausible posts from brands to be buried and never be seen by their targeted audience (Pletikosa Cvijikj and Michahelles, 2013). This situation accentuates the importance of scheduling incorporation in marketing programme (Kumar, Jacob and Sriskandarajah, 2006). The discoveries of this study provide a solution to such problems. They inform brands and social media managers the most effective posting timing on Instagram. This will guide them to enhance their social media marketing strategy on such a prominent platform.

## 6. CONCLUSION, LIMITATIONS, AND FURTHER RESEARCH

This study initiated the analysis of posting timing on Instagram. The results provide empirical discussion, extend social media marketing literature, and benefit social media managers and brands. Despite the effort and advantages, this study carries some limitations. First, it analysed food brands in Indonesia. Market characteristics affect content engagements (Schultz, 2017). The findings might be irrelevant to other industry and countries. Additionally, this study investigated Instagram. This platform has distinct demographics compared to other media such as Facebook.

The limitations offer opportunities for future studies. Researchers could inspect other industries, such as fashion, sports, and entertainment. They could also use data from other countries, especially those of emerging markets such as India and Brazil. These differences in data usage for analyses could validate whether posting timing on Instagram is significant for brands' effective marketing strategy. Future studies might also examine TikTok and Snapchat. These social platforms are popular. It would be interesting to substantiate the importance of scheduling in the social media marketing strategy. Lastly, based on the control variables and preliminary findings on Facebook, the predictors of followers, fake followers, remuneration, content types, and interactivity affect content engagements (de Vries, Gensler and Leeftang, 2012; Pletikosa Cvijikj and Michahelles, 2013; Sabate *et al.*, 2014; Luarn, Lin and Chiu, 2015; Schultz, 2017). Ensuing investigations might include these variables to verify their influences on Instagram popularity posts.



## 7. FIGURES, TABLES, AND REFERENCES

### 7.1 Figures and Tables

**Table 1: Descriptive Statistics of the 40 Brands**

	Mean	Std. Deviation
Total Followers	82760.50	109637.72
Average Likes	587.35	742.26
Average Comments	24.18	33.84
Likes-to-Followers Ratio	1.25%	2.55%
Comments-to-Followers Ratio	0.04%	0.05%
	Frequency	%
Fake Followers	35	87.5%
Real Followers	5	12.5%

**Table 2: Descriptive Statistics of the Explanatory Variables**

Variable	Level	Frequency	%
Day	Sunday	577	19.5%
	Monday	443	15.0%
	Tuesday	372	12.6%
	Wednesday	357	12.1%
	Thursday	399	13.5%
	Friday	361	12.2%
	Saturday	449	15.2%
Period	In-between	745	25.2%
	Breakfast	462	15.6%
	Lunch	878	29.7%
	Dinner	873	29.5%
Followers	Fake Followers	2878	97.3%
	Real Followers	80	2.7%
Likes	Fake Likes	1	.0%
	Real Likes	2957	100.0%
Remuneration	Remuneration	50	1.7%
	No Remuneration	2908	98.3%
	Mean	Variance	Std. Deviation
Total Likes	104.36	45731.56	213.85
Total Comments	3.46	116.85	10.81



**Table 3: Estimation Results Based on Days**

	LnLikes		LnComments	
	B	Std. Error	B	Std. Error
(Intercept)	<b>-4.003</b>	.3482	<b>-11.059</b>	.9731
Sunday	-	-	-	-
Monday	<b>.303</b>	.0735	<b>.595</b>	.1739
Tuesday	<b>.322</b>	.0774	<b>.705</b>	.1832
Wednesday	<b>.393</b>	.0784	<b>.637</b>	.1849
Thursday	<b>.262</b>	.0760	<b>.528</b>	.1796
Friday	<b>.414</b>	.0780	.389	.1851
Saturday	.173	.0733	.102	.1745
Number of Followers	<b>.889</b>	.0305	<b>1.167</b>	.0863
Real Followers	-	-	-	-
Fake Followers	<b>-1.534</b>	.1330	<b>-.976</b>	.3071
Real Likes	-	-	-	-
Fake Likes	.215	1.1741	-2.682	2.8716
No Remuneration	-	-	-	-
Remuneration	<b>1.965</b>	.1674	<b>1.651</b>	.3867
(Scale)	1 <sup>a</sup>		1 <sup>a</sup>	
(Negative binomial)	1.335	.0304	6.987	.2862
LR $\chi^2$ (10, N=2958)	1469.009		302.595	
Deviance/df	1.182			.676

Bold figures: p-value<0.01, Italic figures: p-value<0.05

**Table 4: Estimation Results Based on Times**

	LnLikes		LnComments	
	B	Std. Error	B	Std. Error
(Intercept)	<b>-3.628</b>	.3469	<b>-10.062</b>	.9342
Breakfast	<b>.298</b>	.0687	<b>.756</b>	.1607
Lunch	<b>.234</b>	.0583	<b>.376</b>	.1374
Dinner	<b>-.160</b>	.0579	-.184	.1379
Number of Followers	<b>.876</b>	.0308	<b>1.118</b>	.0839
Real Followers	-	-	-	-
Fake Followers	<b>-1.602</b>	.1324	<b>-1.275</b>	.3064
Real Likes	-	-	-	-
Likes	.014	1.1691	-3.149	2.8495
No Remuneration	-	-	-	-
Remuneration	<b>1.949</b>	.1667	<b>1.755</b>	.3821
(Scale)	1 <sup>a</sup>		1 <sup>a</sup>	
(Negative binomial)	1.325	.0302	6.877	.2830
LR $\chi^2$ (7, N=2958)	1497.904		320.785	
Deviance/df	1.180			0.677

Bold figures: p-value<0.01



**Table 5: Summary of Results**

Hypotheses	Expected	Number of Likes
H1a: Weekdays (Monday, Tuesday, Wednesday, Thursday, Friday)	-	Not Supported
H2a: Breakfast	+	Supported
H2b: Lunch	+	Supported
H2c: Dinner	-	Supported
Hypotheses	Expected	Number of Comments
H1b: Weekdays (Monday, Tuesday, Wednesday, Thursday, Friday)	+	Supported
H2d: Breakfast	+	Supported
H2e: Lunch	+	Supported
H2f: Dinner	-	Not Supported

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# LINGUPOETIC FEATURES OF SYNTACTIC CONSTRUCTIONS BELONGING TO THE INEFFECTIVE LAYER OF KHOREZM DASTANS

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## ABSTRACT

*This article clarifies the syntactic constructions, phraseological integrities, as well, considerations on the linguopoetics of discourse units belonging to the ineffective layer of Khorezm dastans. The text of manuscripts and lithographic versions of dastans were accepted as a basis in tackling with this problem.*

**KEYWORDS:** *Khorezm, dastan, syntactic constructions, fraseological integrity, linguopoetics.*

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## DISCUSSION

Language is considered not only as a significant heritage of the people's history, culture and spirituality, but also an incomparable treasure with high aesthetic value and wide possibilities of expression.

During today's globalization period, it is reasonable that each nation, each independent state should give priority to the protection of its national interests, in this regard, first of all, the preservation and development of their culture, ancient values, mother tongue.<sup>1</sup> At a time when the Uzbek language is receiving great attention at the national level, it is necessary to carefully study the sources of our national language in order to raise its status, increase the role and influence of the state language in our lives, to turn it into a truly national value.

N. Mahmudov, a well-known Uzbek linguist, disparately commenting on language, said that "If language were only a means of communication, it would be very simple, simplistic and poor. However, the language is a creation that is incomparably rich in magic, spirit and spirituality, beauty and perfection"<sup>2</sup>.

It has long been recognized that literature is an art of words. Hence, it can be said that the main

element of literature is the word, in general, language. There is no doubt that the rise of a particular work of art to the level of art depends on the artist's maturity of artistic expression.

Therefore, in order to make an objective assessment of the artistic value of a particular source, it is first necessary to study its linguistic features. Well-known Uzbek literary critic Ozod Sharofiddinov wrote in his article "Literature begins with language", said that "There is no literature without language, just as there is no art without color and music without melody."<sup>3</sup>

The language of folklore is one of the most valuable sources, as it reflects the natural, international expression of its linguistic elements. In particular, Khorezm dastans have a special place in the development of poetic methods of linguistic means. Linguopoetic analysis is a philological network that emerged mainly as a result of the privatization of the methodological direction of linguistics.<sup>4</sup>

Directly in the language of Khorezm dastans, we can observe more active types of linguistic units that produce poetic images. In the scientific literature on linguopoetics, there are many places where the term "discourse" is used, especially

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<sup>1</sup>Mirziyoyev Sh. Presidential Decree on the development of the Uzbek language. - Tashkent. October 21, 2019.

<sup>2</sup>Mahmudov N. Enlightenment addresses. -Tashkent: Manaviyat, 1999. -P.44

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<sup>3</sup> Sharofiddinov O. Literature begins with language // Literature and art of Uzbekistan, 1986. -p. 6

<sup>4</sup> A.T. Gryaznova Linguopoetic analysis of a literary text: approaches and directions. Monograph. – Moscow, 2018. P 5



small texts that are in the same pattern, which clearly shows the charm of oral speech.

It is known that one of the peculiarities of the dastan genre, in particular, folk dastans, is the use of a mixture of prose and poetic texts. In the process of connecting these two different poetic elements to each other, the need for certain linguistic means is felt. This may not be the case in written, literary dastans, that is, in the language of lyrical dastans based on the same type of text. Most of the dastans in the Khorezm region belong to the lyro-epic genres, which are used in oral versions, as well as a mixture of prose and poetry.

Therefore, it is natural that the language of dastans should have its own linguistic means of expressing their art. Among such linguistic units the place of syntactic constructions stands out. In the language of dastans, especially in the language of Khorezm dastans, most texts are expressed through the speech of the heroes.

Because the texts are lyro-epic in nature, as noted above, they are characterized by a combination of poetic and prose parts. However, these two types of text can only be combined using specific linguistic tools.

We pay attention to the following passage from the epic "Sayod and Hamro":

*...Egnidan sozini olib, Salbiniyozga qarab, bir so'z aytib turgan ekan, ko'ring, ne der ekan...*

*(Taking his musical instrument on his shoulder, looking at Salbiniyaz, he said as follows, look, what he says...)*

Here, the style moves from the epic text to the lyrical passage, in this part, the syllabic constructions expressed by the rhyming verb forms used here have played an important role in the cohesiveness of the two types of text.

Or consider the following syntactic construction from the dastan "Oshiq Gharib and Shohsanam":

*"...podshoh undan xabardor bo'lib, G'aribni oldig'a chaqirib, andin sababini so'rab, G'arib unga javob berib bir so'z dedi..."<sup>5</sup>.*

*(The king became aware of it, summoned the Gharib, asked the reason for this, and the Gharib answered him as follows...)*

In this syntactic construction, too, internal rhyme is created in the prose text by means of rhyming units, and the connection to the poetic text is very beautiful.

The use of complex syntactic constructions in such places usually required the text creator to be a master of words and to have a high level of oratory

skills in conveying the effectiveness of the text to the listener.

Another peculiarity of the syntactic constructions used before the poetic texts in the text of dastans is that in most of them the syntactic units in the form of "said a word" and "told a word" are repeated from the units of the inactive layer. Such stylistic tools are mainly specific to folklore genres, especially the language of dastans, and are interpreted in the scientific literature as "lexical repetitions that come with syntactic extensions"<sup>6</sup>. The following passages from the texts of Khorezmian dastans can serve as a proof of the above thoughts:

*"...Andin so'ng Aqcha kelib, bularga ko'ngullik berib, bir so'z degani bu turur..."*

**("Oshiq Gharib and Shohsanam", page 91)**

*(Then Akcha came, took care of them and said a word, as follows...)*

or:

*"...anda Go'ro'gli sozini qo'lina olib, parizodg'a qarab bir so'z aytdi..."*

**("Oshiqnoma" book 4, "Hirmondali" dastan, page 150)**

*(At that moment Gorogly took his musical instrument in his hand and said a word to the parizod...)*

and others.

The lexeme "word" in the syntactic unit "one word" in the above-mentioned passages does not have its original lexical meaning, but "ghazal", "poem". This, in turn, is the result of a linguistic style that is not specific to literary language, but only to the art of folklore.

Among the syntactic constructions, which are considered as inactive units inherent in the lexicon of Khorezm dastans, the place and functions of phraseological units stand out. The artistic vocabulary of epics is inconceivable without figurative analogies expressed in figurative meanings. In the speeches of the performers of the dastans there are a lot of local colors, fixed units, analogies connected with the description of the events of the dastans. They make the speech effective.

We note the following passage from the epic "Tahir and Zuhra" in the series "Oshiqnoma":

*"...Tohirning yuragiga o't tushib, go'yo oynaga tushgan quyoshning yolqiniday har yoqqa chayqalar edi..."*

**("Oshiqnoma", book 5, page 69)**

*(Tahir's heart was on fire, as if the sun was shining on the mirror.)*

The syntactic integrity "as if the sun was shining on the mirror" highlighted in the passage

<sup>5</sup> Oshiqnoma. Book 2. Prepared by: S.S. Rozimbaev, G.O.Eshjanova, S.R.Rozimbaev. – Urgench: Khorezm, 2006. –p. 109.

<sup>6</sup> Yuldashev M. Linguopoetics of literary texts. – Tashkent: Uzbekistan, 2019. –P.221.



serves to perform a number of stylistic tasks. First of all, it is not about the mirror or the sun. Their lexical material is used as a linguistic means to describe the emotional state of a particular image (hereby Tahir). In addition, the syntactic integrity used in this context must be distinguished from phraseological units that have a fully figurative meaning. Here it is more accurate to assume that there is a figurative expression, referred to in science as the term discourse (a linguistic-stylistic unit that has fallen into a certain pattern).

The range of syntactic units that perform the linguostylistic function through figurative constant analogies is very wide. In some of these units, different aspects of a person's emotional state, images associated with movement and state, are singled out. For example:

“...Unga ko'zi tushib, ilon og'ziga yaqin kelgan qurbaqaday bo'lib qoldi...”

(“Oshiqnoma”, book 6, page 160)

(He looked at her and became like a frog coming close to the snake's mouth.)

The syntactic integrity of “became like a frog coming close to the snake's mouth” in this passage serves to express the terrified state of a particular hero. Such discursive units are more specific to oral speech and are specific only to the literary texts of the Uzbek language. The text of dastans is one of the most convenient texts for the use of such units.

There are also discursive units in the language of epics that express such states of a person as happiness, visual joy, merriment. For example:

“...Ikki oshiq-ma'shuq tol chiviqday do'lanishib, goh hushidan ketib, goh hushiga keldilar...”

(“Oshiqnoma”, book 6, page 190)

(Two lovers tied together like a willow branch, sometimes fainted and sometimes regained consciousness.)

The syntactic integrity of the phrase “tied together like a willow branch” in this context is a tool used to describe the state in which the lover and mistress finally achieve their dreams after many hardships.

In conclusion, the linguopoetic elements of the language of dastans are very diverse and different. Collecting and analyzing them enriches the ranks of linguopoetic research today with important scientific conclusions.

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## THE PROBLEM OF DEMOCRACY AND HUMAN DIGNITY

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*"People's welfare is the supreme law"*

*Cicero*

In the context of the formation and development of the national legal system in Uzbekistan on a democratic basis, the issues of human dignity, individual freedom, democracy are becoming increasingly important. The importance of democracy in sustainable development, the creation of decent living conditions for human beings, in turn, makes the analysis of the role of democracy in the problem of human dignity, their interdependence and interdependence one of the important scientific tasks.

It is known that democracy is often understood as a form of government, a set of principles of organization and functioning of political, socio-political structures, human rights and freedoms. Special scientific sources and educational literature focus on the socio-political and legal significance of democracy. In this context, the role of democracy in society as "man - the main social, political, legal and spiritual value (truth)", the impact on the solution of the problem of human dignity, "people's power", true democracy, the interests of the absolute majority of the people, the vector of the political system based on the protection of the interests of ordinary people is significant in that man is not alienated from his human nature, others, society, and is aimed at ensuring the full development of man. Hence, there is also a humanistic function (dignity) of democracy.

In general, democracy as an event based on the rational solution of the problems facing man constitutes the internal logic of the process by which the idea of human dignity becomes a reality. Indeed, democracy, in essence, represents the process of comprehensively strengthening the position of the individual and establishing a just social life. Therefore, in a democracy and on the basis of the values associated with it (individual freedom, individualism, market economy, rule of law, pluralism), the dignity of the individual in society, the citizen in the state can have a certain objective meaning. In particular, this can be observed, first of all (empirically), in countries where social democracy is established, including Scandinavia, where the main indicators of human dignity - life expectancy, personal security, social welfare, high levels of human rights and freedoms. From this fact, which can be substantiated and proved the direct and indirect relevance of democracy to the problem of human dignity, begins to understand the functional significance of democracy for sustainable development, to understand its humanistic value.

Of course, democracy, as an "abstract force" in itself, does nothing without the participation of the main forces interested in it. That is, democracy can only create opportunities for the humanization of the social environment, the solution of complex social problems. Therefore, the development of a society, the level of human dignity in it, depends primarily on the founders of that society, their basic beliefs, the nature of their worldview. From an idealistic point of view, the development of political, legal and



economic culture, that is, social development, no matter how formally important, depends not on the maturity or inadequacy of political and legal structures, but on the active or inactive inner life of individuals. but there are things that make sense "(Gegel).

In this regard, it is more expedient to determine the measures to ensure political and legal activity through the establishment of democracy, the search for guarantees of the legal mechanism from the moral factors, mental foundations, their activation. At this point, Goethe changed his mind a bit: only those who go to war every day for life and freedom deserve a prosperous life, a human life.

Socio-historical practice and modern democratic realities In an environment where democratic ideas, ideals, principles and values are developed, open forms of state and society are established, various inhumane events and phenomena that insult the human person, violate his human dignity and freedom - emphasizes that there is no risk of economic recession in permanent cases. In other words, in the example of democratic societies (25 developed countries of the world) we can see that democracy, that is, the struggle to live, the struggle to unite, ultimately does not lead to a poor, inhuman life, that is, the inactivity of citizens to meet human needs.

"Areas of peace and democracy," he said. Zinger and A. Vildavsky, - covers areas of Western Europe, USA, Canada, Japan, Australia and New Zealand. These countries are home to about 15% of the world's population. They are dominated by rich democracies. This is no ordinary coincidence. Prosperity, democracy and peace will always go hand in hand. " Here the factor of democracy is absolute, that is, the material well-being of Western civilization does not take into account the brutal exploitation of the colonies, but the civic activism, social rights, the struggle for social freedom inherent in Western society can not be denied.

Consequently, democracy is a complex and multifaceted phenomenon in real life, with many forms and ways of expressing itself directly and indirectly. True democracy applies not only to the political sphere of society or the state, but also to other spheres - economic, social and cultural. Depending on which area of democracy is manifested in the life of society and the activities of the state, the relevant manifestations of democracy are usually discussed. For example, if democratic principles, norms and ideas are realized in the political sphere of the state and society, then it is a question of political democracy. If they are manifested in the economic, social or ideological spheres of society, then, respectively, economic, social and "ideological" democracy is meant.

As can be seen, general notions of democracy do not mean "politicizing" a problem that is as complex,

multifaceted, diverse, and complex in nature as human dignity. (Although it is not the politicization of human problems, but rather the orientation of politics towards broader human problems, which is one of the fundamental tasks). In the above views, the guarantee of democracy and the associated human dignity - the active attitude of people to their own destiny, the problems of the state and society, the formation of the nation as a political nation - is an ordinary person, every citizen has not only "de jure" but "de facto" dignity. assuming that it is a guarantee of earning a living. "People would have become true devotees of democracy only if they thought of themselves and their loved ones living a happy life."

This view applies to any social phenomenon: different social structures, state, society; the "theory of development" (hereinafter democracy) should be approached primarily from the position of humanocentrism (anthropocentrism, which absolutizes the temporal interests of man, anti-ecological consumerist worldview, based on selfishness, and not humanism, which exacerbates the ecological crisis). (After all, the approach to social development on the basis of human dimensions, is not this the criterion of the humanization of social relations ?!)

True, there are different forms of understanding and explanation of complex social phenomena in the social sciences. At the same time, it should not be forgotten that giving in to "research sympathy" is not the same as intellectual honesty. However, it should be noted that the source of all values, as a measure of everything, "Man is the highest value", human dignity is inviolable ... This is the individual-subjective choice of the individual, a certain theoretical and methodological goal, moral rule or philosophical, which is a formula that expresses the needs and demands of the period, the strategic goals of society, which cannot be limited to the limits of sentiments.

Although there are generally accepted basic principles of democracy, there is also no universal model of it. Indeed, "in the history of mankind, democracy has neither a starting point nor an ending point ... even in the most developed countries, it has not reached its final peak." In this sense, democracy is an abstract-general concept, at the same time, it is an abstract-concrete concept that allows for the real humanization of existing conditions in certain emerging conditions.

Democracy, of course, cannot be idealized, as it is full of internal contradictions and contradictions, and sometimes a threat to "self-determination", especially political competition over funding, electoral processes, and political PR will not happen. Even in the most developed democracies, election programs are implemented at a very low percentage, and no politician or political force is ostracized for this. The more a system of democracy allows for the solution of certain problems, on the



one hand, and the more complex it is for the creation of new problems on the other, and the more likely it is that formal, civil, "negative democracy" will lead to totalitarianism. However, the Germans, the "nation of philosophers," have a great culture.) But, on the other hand, it is clear that no more perfect tool has been invented to solve human problems. That is why democracy does not lose its relevance to the idea and practice of human dignity.

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## STATE YOUTH POLICY IN THE CONTEXT OF SOCIAL MODERNIZATION AND ITS IMPORTANCE

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At a new stage of development of Uzbekistan, the adoption of the "Strategy of Action" as a basis for the process of modernization and renewal of social life and the need to study the nature and effectiveness of changes in the social system based on it. The need for research is due to the fact that the development of the country is carried out in such areas as market reforms, entrepreneurship, private property, social infrastructure, welfare, and modernization of social life. "Building a civil society, expanding the freedoms and initiatives of our compatriots, their participation in the social life of our country ..." <sup>1</sup> is one of the most pressing issues today.

A country that cares about its future takes special care of the rising generation. The issue of youth has been relevant in every age and always. Because the future owners are young people. Attention and care for them has always been a habit of our people.

From the first days of independence, care and attention to youth in Uzbekistan has become a priority of state policy.

All articles of the Constitution of the Republic of Uzbekistan represent the interests of young people, and some articles directly apply to young people.

In particular, Articles 24, 25, 27, 29, 31 of the Constitution of Uzbekistan state that "the right to life is an inalienable right of every person." Everyone has

the right to liberty and security of person. "Everyone has the right to protection against encroachment on his honor and dignity, to privacy and to the inviolability of the home," "Everyone has the right to freedom of thought, speech and religion, and freedom of conscience for all." <sup>1</sup>

Articles 36, 37, 40, 41, 42 of the Constitution strengthen the economic and social rights of young people.

"Everyone has the right to own property alone as well as in association with others." "Everyone has the right to work, to free choice of employment, to just and favorable conditions of work and to protection against unemployment in accordance with the law." "Everyone has the right to qualified medical care," "Everyone has the right to education. Free general education is guaranteed by the state," "is an opportunity and condition created for young people to find their place in life." <sup>1</sup>

On September 15, 2016, the new Law of the Republic of Uzbekistan "On State Youth Policy" came into force. The law consists of 4 chapters and 33 articles, which explain the concepts of state youth policy, youth, young family, young professionals, youth entrepreneurship.

The law defines the following basic principles of state youth policy: openness and transparency, youth participation in the implementation of state youth policy, support and encouragement of youth initiatives, the priority of spiritual, moral and cultural

<sup>1</sup> Mirziyoev Sh.M. Deepening democratic reforms, ensuring sustainable development is a guarantee of creating a decent standard of living for our people. // We will resolutely continue our path of national development and raise it to a new level. T.I. T.Uzbekistan. 2017. p. 44.

<sup>1</sup> The Constitution of the Republic of Uzbekistan. Tashkent, "Uzbekistan" 2018. Pages 11-13

<sup>1</sup> The Constitution of the Republic of Uzbekistan. Tashkent, "Uzbekistan" 2018. Pages 11-13



values, non-discrimination of youth. The law defines the main directions of state youth policy<sup>2</sup>.

President of the Republic of Uzbekistan Sh.M.Mirziyoyev said that "the initiative to increase the effectiveness of state youth policy and support the activities of the Youth Union of Uzbekistan and civil society in reforms, high spirituality, independent thinking, strong life position, broad outlook and deep knowledge It is necessary to expand the ranks of young people who are courageous, who mobilize all their efforts, knowledge and potential in the interests of the country, who are able to take responsibility for the future of the country"<sup>3</sup>.

"It should be noted that more than 60% of the population of Uzbekistan is under 30 years old. You know very well that we provide all the necessary conditions for young people, from their healthy birth to independent living," said President Sh.M.Mirziyoyev<sup>1</sup> in his speech at the ceremony dedicated to the 25th anniversary of the adoption of the Constitution of the Republic of Uzbekistan<sup>1</sup>.

Over the next three years, state youth policy will intensify. On June 30, 2017, the IV Congress of the Youth Social Movement of the Republic of Uzbekistan "Kamolot" was held. President of the Republic of Uzbekistan Sh.M. Mirziyoyev made a report on "Physically and spiritually mature youth - our support and backbone in achieving our noble goals," and critically analyzed the activities of this organization. It was renamed the Youth Union of Uzbekistan. June 30 is marked as "Youth Day". Since then, the attention to youth has been further strengthened by our state and the Youth Union.

The fact that from June 30, 2017 to June 30, 2018, that is, in a year, more than 20 laws, decrees and decisions directly related to the lives of young people were adopted, clearly confirms this idea.

It is noteworthy that in just one year, on the recommendation of the Youth Union of Uzbekistan, about 4,300 young people were given preferential loans by banks worth 216 billion soums, and more than 184,300 children were employed.

All conditions are being created for the education of young people to become qualified professionals. General secondary schools were transferred to 11-year education. New schools are being built, existing ones are being overhauled and

reconstructed. Starting from the current academic year, a completely new system of vocational education will be established in the country, 340 vocational schools, 147 colleges and 143 technical schools will be established.

The development of the higher education system in our country is also a priority. Along with new higher education institutions, branches of prestigious foreign universities are being opened, quotas for admission to higher education institutions are being increased, and part-time departments are operating in many areas. On October 8, 2019, the Decree of the President of the Republic of Uzbekistan "On approval of the Concept of development of the higher education system of the Republic of Uzbekistan until 2030" was adopted<sup>1</sup>.

The main purpose of the concept is to identify priorities for the systemic reform of higher education in the Republic of Uzbekistan, to raise the process of training highly qualified independent thinkers with modern knowledge and high moral and ethical qualities, modernization of higher education, social and economic development based on advanced educational technologies. network development.

President of the Republic of Uzbekistan Sh.M. Mirziyoyev noted that over the past two years, 35 universities, including 13 foreign universities, have been established in the country. Training of more than a hundred new bachelor's degrees and 94 master's specialties has been launched.

As a result of such measures, the coverage of young people with higher education has increased from 9% to 20% three years ago. We aim to increase this figure to 25% in the near future<sup>2</sup>.

Thanks to the created opportunities, the youth of Uzbekistan demonstrate their knowledge and potential in various fields and glorify the glory of our Motherland all over the world.

Giving our young people the opportunity to apply to several universities at the same time expands their right to education. In 2019, a total of 146,500 students were admitted to higher education, or 2 times more than in 2016. From 2020, the duration of study in 6 areas of pedagogical education will be 3 years.

He said that he would get a higher education, work on himself and become a scientist, and he has a fire in his heart, and opportunities are being created for the education of enthusiastic young people.

<sup>2</sup> Law of the Republic of Uzbekistan "On State Youth Policy". People's Speech, September 16, 2016

<sup>3</sup> Mirziyoyev Sh.M. Decree "On increasing the effectiveness of state youth policy and supporting the activities of the Youth Union of Uzbekistan", People's Speech. 2017. June 6th

<sup>1</sup> Mirziyoyev Sh.M. The consent of our people is the highest value given to our activities. Tashkent "Uzbekistan," 2018, 25 page

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<sup>2</sup> Mirziyoyev Sh.M. Holiday congratulations to teachers and coaches of Uzbekistan. The word of the people. 2019 y. October 1





President of the Republic of Uzbekistan Sh.M. As Mirziyoyev noted, it is necessary to develop the concept of "Youth Union of Uzbekistan", "Youth of Uzbekistan-2025", which will identify practical measures for the upbringing of a spiritually and physically harmoniously developed generation. In society, the constant improvement of the spiritual and enlightenment level of the population, especially our young men and women, is of paramount importance. At the 72nd session of the United Nations General Assembly, we proposed the development of an international convention on the rights of the youth. I propose to hold the Samarkand Forum on Human Rights in 2020 dedicated to the rights of young people and discuss the draft convention in it"<sup>1</sup>.

Also, on June 30, 2020, the President of the Republic of Uzbekistan adopted Resolution No. PF-4768 "On the organization of the Agency for Youth Affairs of the Republic of Uzbekistan." The decision approved the organizational structure of the Agency for Youth Affairs.

The Agency will establish a "Youth Media Holding" in the form of a joint stock company on the basis of a number of media and publishing houses.

A candidate for the position of Vice-Rector for Youth Affairs of a state-owned university with a state share shall be appointed and dismissed in agreement with the Agency.

Draft normative and legal acts that directly or indirectly affect the implementation of state youth policy shall be agreed with the Agency.

The Director of the Agency shall be appointed and dismissed by the President on the recommendation of the Prime Minister.

According to the decision, the State Symphony Orchestra of Uzbekistan will be established on the basis of the Youth Symphony Orchestra under the Youth Creativity Palace in Tashkent and transferred to the Ministry of Culture, while maintaining the existing conditions of remuneration.

The Institute for Youth Studies and Training of Prospective Personnel under the Academy of Public Administration under the President will be transferred to the Agency.

The main activity of the institute is a state institution with the status of a legal entity, which is aimed at studying the problems of young people, conducting scientific and analytical research in this area, as well as retraining and advanced training of promising young professionals.

In short, all of the above-mentioned social, political, legal, and spiritual reforms serve to shape the youth as spiritual beings in the future.

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# INFLUENCE OF WOMEN'S SOCIAL CHARACTERISTICS ON THEIR PARTICIPATION IN LEADERSHIP: CASE PRIVATE UNIVERSITIES MOGADISHU, SOMALIA

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## ABSTRACT

*This study examines women's social characteristics that may contribute to their low participation level in leadership positions. The overall purpose of the study was to explore the influence of women's social characteristics on their participation in leadership, using a case of three private Universities in Mogadishu. With this purpose, the following four specific objectives were set: to identify the Influence of family responsibility on women participation in leadership. To determine the Influence of women academic involvement on their participation in leadership to determine the Influence of cultural aspects and religion on women participation in leadership to assess the Influence of women's economic empowerment on their participation in leadership: a case of private Universities in Mogadishu, to guide the researcher through every step of the study procedure. The study adopted a correlation research design. Data was collected through self-reports (questionnaires and interviews) and correlations. A sample of 73 representative participants was selected at simple random from 89 target population at three private universities in Mogadishu. The research findings were analyzed and interpreted in brief textual explanations, supported by data presented in frequency tables. The study in general thought that the men who control the three researched private universities in Mogadishu entertain a doubt about women's capability of doing managerial tasks, implying that women are not very fit for leadership positions-a labeling that made most of the women there lose confidence and the courage to aspire to posts at managerial levels in those universities. The study concluded that family responsibilities have an influence on women's participation in leadership. These universities do not provide support for women with family responsibilities, for example, they do not cater for the needs of the women with family responsibilities. The study reached the conclusion that women's lack of involvement in academic activities has an influence on their participation in leadership, mostly owing to their underrepresentation at senior levels in these private universities. The study came to the conclusion that cultural aspects and religion have an influence on their participation in leadership. In tradition, Somali communities disapprove of women assuming leadership positions for unfair opinions about their gender. The study strongly recommended that all appropriate stakeholders should make a concerted effort to ensure that the different institutions of society (the family, the school, the university, the community and the government) respect Somali women's rights and meet their needs and requirements by means of laws, rules policies, economic empowerment, up-skilling, procedures, standards, daily practices and national forums on gender inequality to identify and develop strategies for dealing with the existing gender issues and concerns in higher educational institutions in order to increase women's participation in leadership positions.*

**KEYWORDS:** *Women's Social Characteristics, Family Responsibility, Women Academic Involvement, Cultural Aspects and Religion, Women's Economic Empowerment & Participation in Leadership.*

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## 1.0 INTRODUCTION

For as far back as we have historical records, there is evidence, that women in different parts of the world have suffered in consequence of the label 'housewife', which is used to disregard or underestimate women's potentiality for jobs other

than housewife. Nevertheless, this era of the technological modern civilization and globalization and all the accompanying legalities of human rights and equity make the world a more suitable place for people from different socio-economic environments to live in, but it's not ideal for all people as



yet(Freeman, 2017).On a more micro level, various groups separated by gender, ethnicity, ability, or religious orientation are fighting their own battles to make their voices heard, and to achieve equity and equality in relation to privileged, dominant group(s) (Pinderhughes, 2017).However, the declaration on gender equality and development by the UN gave equal consideration to both males and females and called for equal treatment of men and women in accessing management positions so as to allow women who have leadership aspirations to realize their abilities to the full and to occupy their rightful places in the institutions of higher education Great attention has been paid to existing gender inequality in management opportunities for men and women in various sectors of employment in many nations worldwide, especially at legislative and research levels (Suzan, 2014).

Regionally, women's social characteristics determine their social and legal status in society, and entail prejudiced expectations (from society) against women that are particularly widespread among the people living in Africa where all leadership positions are usually placed outside women's domain on grounds of their female gender. Reason being, many African societies tend to prefer traditional women's role to economic social and political trends in the modern world towards promoting equality between men and women (Lazreg, 2018).Thus women do not enjoy the same rights as men in these countries as access to education, and employment in market places have been denied to them-hence their lack of decent jobs that bring with them status and high income. Instead, women are often encouraged to join the ranks of housewives. In other words, women's higher education and professional qualifications do not give them a guarantee of good job/ employment / career prospects, just because of their gender (Kataeva, Z., & DeYoung, A. J, 2017). And this causes a serious impediment to women's economic development.

The lack of sanitation facilities (especially separate latrines for girls and boys, a shortage of female teachers (less than 20 % of primary school teachers were female), and security concerns and traditional values that favor boys education over girls' are cited as factors stopping parents from sending their daughters to school. According to the education data for Somalia shown by (UNICEF, 2015), the enrollment and the attendance rates for Somalia as a whole were very low. The gender parity index(GPI) in Mogadishu primary schools for the year 2013 and 2014 was 0.85 and its gender gap (GG) was 6.1. According to the same statistics above, a total of 24050 secondary school students have been enrolled in the academic year 2013-2014 of which (14362) (59.7%) were boys and 9688 (40.3%) were girls. The total number of qualified secondary school teachers was 1262 of which only 57 were female

while the remaining 10205 were male. Therefore, these is a great need to adopt innovative ideas of treating women very fairly to encourage a more democratic society in which men and women compete on equal terms with each other without let or hindrance. (Said Yusuf Mohammed, 2014).

In Somalia, women never seem to enjoy the same rights and opportunities as men in terms of education and employment. Instead, they suffer from oppressively dominant men at home and in the workplace. Although, women considerably broadened their horizons of knowledge and experience in recent years in order to equip themselves for positions of power, men still predominate over women in top jobs in higher educational institutions in Mogadishu. That is, men are quite high up in the management hierarchy, compared to women who are concentrated in low level places. The main reason for this subordinates-supérieurs relationship between men and women in the institutions of higher education is that women often face a glass ceiling-a barrier to their ambitions of becoming managers in higher educational institutions.

Surprisingly, the government has made no move to address the gender discrimination against women in higher educational institutions in Somalia until now, apart from enshrining women's legal rights in the country's constitution, but in reality, these rights are not respected by men as yet.

Nevertheless, the implication is that, if women are alienated from the rest of the society or continually excluded from top jobs, that will not only be bad for women and their households, but also for the national economy as a whole because half the talent of the nation will be wasted. The social, political and economic cohesion of the society will also be undermined by the gender discrimination against women in all formal social institutions as a consequence, not to mention the outrages and the condemnations that might come from inside and outside the country in reaction to the violations against women's social and economic rights in Somalia.

However, this study investigated into the influence of Women's social characteristics on their participation in leadership positions.

### Specific Objectives

1. To identify the Influence of family responsibility on women participation in leadership: case of private Universities Mogadishu, Somalia
2. To determine the Influence of women academic involvement on their participation in leadership: case of private Universities Mogadishu, Somalia
3. To determine the Influence of cultural aspects and religion on women participation in



- leadership: case of private Universities Mogadishu, Somalia
4. To assess the Influence of women's economic empowerment on their participation in leadership: case of private Universities Mogadishu, Somalia

## 2.0 LITERATURE REVIEW

The purpose of the study was to explore the influence of women's social characteristics on their participation in leadership

### 2.1 Family responsibility

One of the most significant topics of discussion across most fields are female leadership. With issues of gender inequality attracting researchers' attention for many years, it is becoming increasingly difficult to ignore the limited leadership roles and opportunities for women in higher education (Alomair M. O., 2015) Despite the progress in higher education regarding female advancement, gender discrepancies are evident based on four particularly important findings. First, women in higher education are underrepresented in leadership positions (Alomair M. O., 2015). In 2006, approximately 23% of college presidents in American higher education were women, but the majority of them were at community colleges and small private universities (Alomair M. O., 2015). However, most recent reports indicate that women represent 26% of college and university presidents (Alajmi, Rajeh Hamad and Ahmad, Fais Bin and Al-Ansi, Ali Ali and Gorondutse, Abdullahi Hassan, 2017). While there is an increase of female leaders in higher education, progress remains slow (Alajmi, Rajeh Hamad and Ahmad, Fais Bin and Al-Ansi, Ali Ali and Gorondutse, Abdullahi Hassan, 2017). The lack of women at the highest level of leadership in higher education has been attributed to the challenges women in academia are likely to face such as discouragements over career advancements, personal circumstances, and invisible rules within institutions (Miznah, 2015).

To start with, women are underrepresented in institutions of higher education compared with men. According to (Dear, 2016), that about 23% of presidents working in higher education institutions in the USA are females and are mostly employed in colleges and small universities run by community and private entities respectively. Dear also reported that 26% of college and university presidents in America represent women. (Davidson, 2016), says while the number of female managers is growing in higher education, progress is slow, and women still lag behind men in this respect. Although women account for 43.94% of faculty at American colleges and universities, only 26.81% of them hold the rank of professors. For example, 49.34% of assistant professors, 42.17% of associate professors, and only

29.12% of full professors are women (Alomair, 2015). So, women in higher education tend to hold lower academic ranking than men.

In addition, many women have expressed their concern about the lack of organizational support, information, and policies for their parental role. They also have emphasized their fear to request arrangements that suit their needs and family obligations for fear of losing promotion opportunities to leadership positions. In contrast, male leaders tend to criticize women who try to balance family and work life. They believe that women with children are responsible for their own failure to reach leadership positions because, according to these men, such positions demand childless lives (Powell, 2018). Powell also reported that "both men and women managers studied expressed concerns about whether it was possible to combine senior jobs with any real family life". Less overtly, this focus on exclusion bypasses women's active negotiation of work-life choices. It also serves to reinforce stereotypes of woman as primary caregiver, 'nurturer' and organizer of the home/life sphere. A counter discourse of women's inclusion in senior management, where balance is not a central concern, is currently absent within the gender and management research. (Robyn Walker, 2013).

### 2.2 Women's academic involvement

One way of ensuring that men and women are equally represented in communities is through their participation and involvement in higher education activities. In previous times, socioeconomic and educational policies that were reformed towards womenfolk have developed Nigerian women (Bako, Mandy Jollie and Syed, Jawad, 2018). Their social position, however, is neither economically nor politically equal to that of men (Bako, Mandy Jollie and Syed, Jawad, 2018). Violations of women's rights involve various forms of physical, psychological, economic, cultural and political deprivations and abuses that are inflicted either by the State, communities or individuals on women and girls as persons or as collectives. (Funmi, 2017).

Women who graduated from colleges and universities made considerable contributions to enhancing economic development of their lives, families and that of their country. According to (Zvisinei, Moyo and Juliet, Perumal, 2018), despite the achievement of many women worldwide -both in ancient and recent times- women still lag behind men in leadership positions in various human endeavors.

Within the political scene, only a few women occupy notable leadership positions despite the fact that they form half of the total population of every country (Sacchet, 2018). More emphasis is placed on particular ways in which men and women go about their leadership on management jobs (Place, Katie R and Vardeman-Winter, Jennifer, 2018).



Apparently there is a connection between women's positions in higher education and their status in society. That is to say, women's participation level in higher education is a reliable indicator of their social or professional status in any given country. Anyhow, the under representation of women in higher education and their stereotyped images in society have partly resulted from their lack of greater accessibility to neither formal schooling nor vocational training in addition to gender discrimination against them, which are really sad reflections on the reasons for gender inequality in our society today and its adverse consequences for women. So, women and girls are always underrepresented at senior levels in education positions and thus fell far behind in their career advancement in relation to men (Ovseiko, Pavel V and Chapple, Alison and Edmunds, Laurel D and Ziebland, Sue, 2017). However, having access to school does not imply that the girls are given the same opportunities for education as boys. There are different curricula for boys and girls with different sex-based orientations towards academic subjects and employment systems that are more favorable to men than women. In Saudi Arabia, for example the girls are taught less Math's and science lessons than boys and are also discouraged or not allowed to participate in physical education activities, and at all levels, boys and girls are segregated from one another in classes with exclusive female teachers for girls apart from male professors who give lectures and answer female students' questions via closed circuit television and telephone on occasional basis (Said, Ziad and Summers, Ryan and Abd-El-Khalick, Fouad and Wang, Shuai, 2016).

### 2.3 Women's cultural aspects and religion

A research carried out into women leadership has shown that women are faced with challenges in their way to climb up the positional ladder in higher education, and even when they reach the top leadership ranks in this institutions, may undergo sexual harassment, discrimination on the basis of their gender and very view chances of advancement positions in employment (Carter, Danon R and Peters, Tara, 2016) Patriarchy or cultural factors put a ceiling on women aspirations for higher leadership positions in both technologically advanced and underdeveloped countries (De Klerk, Saskia and Verreyne, Martie-Louise, 2017). Women, who make up half of society, suffer from discrimination and inequality in all societies, especially in the developing world. They are disadvantaged, marginalized and invisible in many aspects of life; and their poor representation in leadership positions is one form of such discrimination. This way that they think, feel or behave when selecting new employees overtly shows their discriminatory actions. They do not recruit new staff members in a way that gives everybody the same chance, instead

they practice bias or disfavor on the basis of gender (Dunham, 2017). The same thing happens when they are promoting employees and in many instances, women who contest leadership positions are more disadvantaged than men are (Dunham, 2017).

### 2.4 Women's economic empowerment

The shrinkage of the Kenyan government's role in social and economic development projects paved the way for the emergence of large numbers of non-governmental organizations and independent donors who took the control of almost all the development projects in Kenya under the auspices of western countries. So it was that they contributed a great deal to increasing Kenya's economic growth rate over the past two decades (Matelski, Maaik and Otundo, Billian and Zijlstra, Selma and Dekker, Marleen and Kempen, L van and Nangulu, Anne and Spierenburg, Marja, 2018). According to above researchers these efforts consequentially improved the empowerment of Kenyan women countrywide though support of more schools and creation of new job opportunities, and in this way, enabling many women to have financial independence and providing them with better access to a more diverse job market so that Kenyan women's educational and economic achievements have exceeded those of Somali women who are still more dependent on their husbands, fathers, brothers or sons for their livelihoods largely due to a lack of economic autonomy.

While foreign investment is limited or not encouraged as needed in Somalia and Ethiopia, millions of dollars were invested in Kenyan resources by western countries, thereby facilitating stronger Kenyan economic growth, when compared with the weaker economies of Somalia and Ethiopia (Selinger, 2018). And this is one good reason why there are more opportunities for education and economic empowerment for Kenyan women than their equals in the neighboring counties, who are socially and economically at a disadvantage compared to Kenyan women, despite the fact that the Ethiopian economy has been consistently improving for the past years. So, it is more than likely that the Ethiopian women will be able to compete with their Kenyan women counterparts in the job market. However Somali women are making relatively less progress than normal and/or developing economically more slowly than women in Ethiopia and Kenya owing to the infant economy of their country, thus getting a foot on the bottom rung of the career ladder so that they bare no comparison with women in neither Kenya nor Ethiopia as far as knowledge and the competences required at higher management or leadership positions are concerned (Sanjana, 2012).

### 2.5 Summary

Many previous studies about leadership and the barriers that women face in accessing leadership positions were discussed in this chapter. One



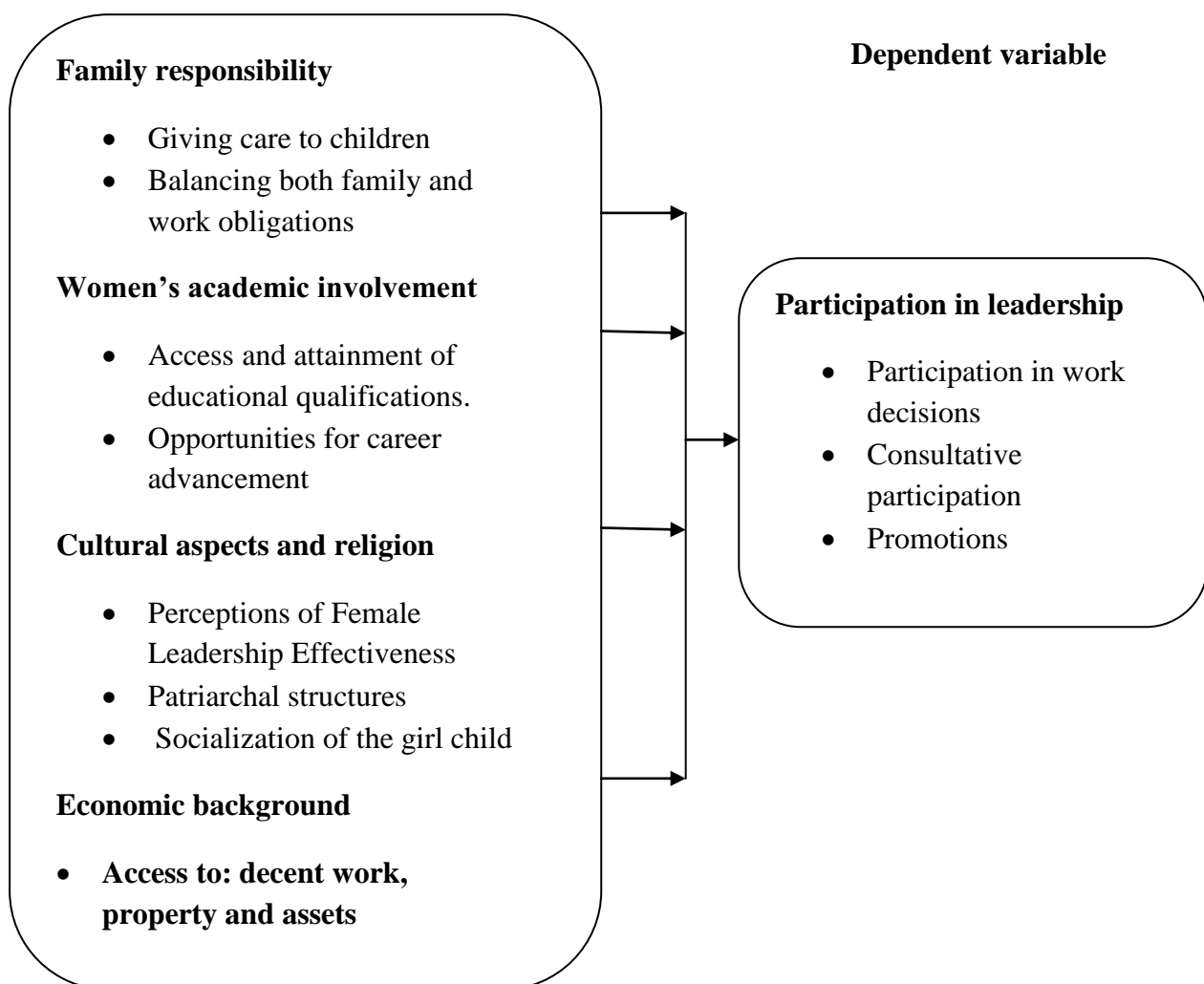
noticeable element in reviewing the barriers that women face in their access to leadership positions was that these barriers overlap with one another. Women may encounter more than one barrier during their pursuit of leadership positions. Although women have gained some success in terms of their access to leadership positions in various arenas,

including higher education, they are still underrepresented and underpaid in comparison to men. However, very few researches of this kind had been carried out to explore the influence women's social characteristics on their participation in leadership in context of Somalia, hence the existing gap in literature.

## Conceptual Framework

### Independent Variable

#### Women's social



### 3.0 METHODOLOGY

This study used correlation research design for the purpose of examining the relationship between the variables. Correlation research design determines whether and what degree a relationship exists between variables of the study. Bearing this in mind, correlation research design was chosen as it was seen as an appropriate method of conducting this study i.e.

it was suitable for this type of topic and helped the researcher to build up a general picture of the influence of women's social characteristics on their participation in leadership.

Independent variable (IV), is a factor that is directly controlled, influenced or used by the experimenter so as to see or notice the effect of this variation on the dependent variable. For example, in



this study on the influence of women's social characteristics on their participation in higher education leadership- the IV is the influence of women's social characteristics which can be defined as a set of features/qualities and patterns of behavior that are typical of women, normally accepted within society, different from location to location and usually influenced by social and cultural factors.

DV. is judged by the experimenter to form an opinion about the effect of the IV on the DV. For example the DV here in this study is their participation in leadership which denotes to the fact that they take part or become involved in something, for example in higher education leadership. Muguenda (2012) said that target population is by definition a group of subjects (persons or things) with a common feature or aspect of behavior that is being studied by a researcher in order to reach conclusions about using research done on a representative sample of that population to make a general statement from it about the wider target population.

The study was done on three private Universities in Mogadishu, and it targeted vice chancellors, Faculty Deans and Heads of Departments. These targeted clusters helped in providing the essential information which determined the influence of women social characteristics on their participation in higher education. The targeted population size comprised 12 deputy vice chancellors, 17 faculty deans and 61 Heads of departments.

The sample consisted of 73 administrative staff selected from 89 administrators from the three selected Universities. In other words, 73 respondents, comprising 48 heads of departments (34 male 14 Female), 16 faculty Deans (15 males 1 female) and, 12 male vice-chancellors were chosen from three selected universities and were then asked to fill in a questionnaire, whereupon 4 women among the respondents were interviewed to assist the researcher in understanding the social and cultural phenomenon that stand between women and leadership positions in higher educational institutions of Mogadishu.

Pfeifer, (2000, Maher, 1995, and Roth 1987) stressed the importance of using an interview to find people's options, thereby regarding it as being easy to control or manage, easy to correct mistakes or avoid misunderstanding at the right time in the place of the interview, and also, as having a high response rate and offering a much greater degree of flexibility in the way it's organized. This interview, however, focused on issues concerning the influence of women's social characteristics on their participation in higher education leadership. Semi-structured techniques were used in this regard while interviewing women with the intent of acquiring an

insight of their perceptions of the obstacles that have been placed in their way to higher education leadership careers.

A questionnaire that was similar in all detail was given to the participants (i.e.12 deputy vice-chancellors, 16 Faculty Deans and 48 Heads of departments) to elicit information from them about women's participation in higher education. Key (1997) expressed the view that a questionnaire is a method of getting attitudes, opinions, feelings or experiences of a representative group of people, while Sarntako (2005, p. 2663) mentioned that a questionnaire is a relatively inexpensive instrument with a high rate of uniformity, employed to gather information (about sb/sth) on the assumption that respondents will complete a questionnaire impartially and without bias. In Sarntako's view, a questionnaire asks well-thought-out and consistent questions and provides a wider coverage of the issue under discussion than other methods do.

#### 4.0 DATA ANALAYSIS AND PRESENTATION RESULT

This section elicited information from the respondents about the Influence of family responsibility on women participation in leadership: Case of private Universities in Mogadishu Somalia Table 4.6 showed that the mean of the respondents (4.97) agreed that the higher educational institutions do not provide support for women with family responsibilities, (4.48)agreed that the women still devote more time to childcare and domestic chores,(4.25) agreed that Women are more likely to be restricted geographically by their partners' Profession, while that situation rarely occurs to men, (3.97) agreed that the women are supposed to produce children and do kitchen work and (3.85) agreed that theFamily and personal obligations lead to exclusion of women from managerial positions in higher education while (2.00) disagreed that the Difficulties with balancing the demands of family and work are recurrent barrier to female advancement to leadership positions. So that the mean score for the responses was (3.92) which indicates that most of the respondents agreed that the higher educational institutions do not provide support for women with family responsibilities.

This second objective of the study indicated respondent's opinions on the Influence of women academic involvement on their participation in leadership: Case of private Universities in Mogadishu, Somalia. Table 4.7 showed that the mean of respondents (4.45) agreed that the Lack of women academic involvement causes women's participation rate at senior leadership level to be very low, (4.34) agreed that the Women's education is very low thus



unable to have access to leadership positions in universities, (3.88) agreed that the female teachers fail to hold education leadership positions, owing to their lack of sufficient professional qualifications, (3.38) agreed that Men can pursue careers in higher education leadership, but the same is often difficult for women, (3.27) agreed that Women have inadequate skills and knowledge that are vital to successful decision-making skills while (2.60) disagreed that Women need a lot of lobbying in order for them to get access to leadership positions in universities in Mogadishu. So, the average score for the responses was (3.59) which indicated that most of the respondents agreed with the statement that the Lack of women academic involvement causes women's participation rate at senior leadership level to be very low.

The third objective of the study was to determine the Influence of cultural aspects and religion on women participation in leadership: Case of private Universities Mogadishu, Somalia

Table 4.8 showed that the highest mean of respondents (4.78) agreed that by tradition, our communities disapprove of women assuming leadership positions for unfair opinions about their sex, (3.84) agreed that the Prevalence of the traditional, informal relation rather than the professional relation between the women leader and her subordinates were considered to be a contributing factor to women's low social status, (3.49) agreed with the belief that woman should play an important part in household chores, instead of in leadership positions, (3.34) agreed that the with current, predominant beliefs that women are weak and emotional rather than strong and rational, so that they are unable to be good leaders. And (3.33) agreed that some women's professional culture about the academic leadership work is poor. The average mean score for responses was (3.71) which indicated that majority of the respondents agreed that, by tradition, our communities disapprove of women assuming leadership positions for unfair opinions about their sex.

The fourth objective of the study was to assess the Influence of women's economic empowerment on their participation in leadership: Case of private Universities Mogadishu, Somalia. Table 4.9 indicated that the highest mean of the respondents (4.62) agreed that decent work is central to economic empowerment, given its inherent importance to women's well-being and ability to advance in areas such as acquiring income and assets. Formal sector work is more likely to be 'decent', (4.58) agreed that the Girls in the lowest wealth quintiles are often the least likely to ever enroll in school, (3.84) agreed that Control of household resources, the importance for women's

'greater self-esteem, respect from other family members, economic opportunities, mobility outside of the home, and decision-making power give women more status, (3.66) agreed that the barriers to female education, whether systemic or temporary caused by shocks, have serious repercussions for their prospects later in life, (3.60) agreed that Enhancement of women's capacity for work as leaders contribute to sustainable development in the political and social-economic sectors. And (3.49) agreed that Women's financial inclusion, including access to banking and other financial services increase women's economic control and opportunities. The mean score for responses was (3.96) which indicated that the majority of the respondents agreed that Decent work is central to economic empowerment, given its inherent importance to women's well-being and ability to advance in areas such as acquiring income and assets. Formal sector work is more likely to be 'decent'.

*First interviewee: "the official head is a man at all times. Reason being, women are traditionally seen as not having the necessary strength, courage and ability to deal with difficult challenges successfully"* *Second interviewee: "In our society, women are still portrayed as the weak sex. It is a popular belief here that women tend to get emotional and may not behave appropriately in unusual situations. Consequently, only men are considered for leadership positions in my university."* *Third interviewee: "The official head of my university and the persons who are in charge of its different department/faculties are all men."* *Fourth interviewee: "As usual, men have or take control of all management/leadership positions, and you never see a single female director in the whole of my university."*

Last Interview question was "What changes do you think are needed to promote women's participation in leadership positions in education?" The answers given to this question by the respondents were these: *First interviewee: "among other needs, instilling soul in women is absolutely necessary to give them self-confidence in themselves and inspiration to be leaders in the institutions of higher education."* *Second interviewee: "women need all the support and encouragement they can get to enhance their academic performances and professional competence if they are to be elevated to leadership positions"* *Third interviewee: "women should be protected, empowered and helped to get access to justice to take up their cause for any discriminatory practices against them in work places."* *Fourth interviewee: "improving public perception of female leaders/ managers in higher education through sensitization, education and advocacy programs is needed."*





**Effect of women academic involvement on their participation in leadership**

		Academic involvement	Participation leadership
Academic involvement	Pearson Correlation	1	.574**
	Sig. (2-tailed)		.000
	N	73	73
Participation leadership	Pearson Correlation	.574**	1
	Sig. (2-tailed)	.000	
	N	73	73

In this connection, the study establishes that there is a strong positive and highly significant correlation between Effect of women academic involvement on their participation in leadership ( $r = .574, P < 0.01$ ).

**5.0 RECOMMENDATIONS**

The study strongly recommended that all appropriate stakeholders should make a concerted effort to ensure that the different institutions of society (the family, the school, the university, the community and the government) respect Somali women’s rights and meet their needs and requirements by means of laws, rules policies, economic empowerment, up-skilling, procedures, standards, daily practices and national forums on gender inequality to identify and develop strategies for dealing with the existing gender issues and concerns in higher educational institutions in order to increase women’s participation in leadership positions.

In addition, every endeavour should be made to cause a change in women’s traditional role in society by raising peoples’ awareness of the existing gender imbalance in the leadership of organizations to make them very conscious of the negative stereotyping, gender discrimination and hegemonic control of men over women in formal and non-formal institutions with intent to urge employers in particular to take a meritocratic approach with men and women when recruiting and selecting candidates for jobs.

Lastly, women themselves should struggle for greater autonomy in their lives and strive to free themselves from the traditional opinions or ways of behaving that limit in what they think or do in order for them to get better access to high places in organizations.

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## PLACE OF CULTURAL AND CREATIVE HERITAGE IN THE FORMATION OF THE NATIONAL HISTORICAL CONSCIOUSNESS

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### ABSTRACT

*This article provides a scientific and practical analysis of the place and role of spiritual values and ideals in the development of historical consciousness. And also, the significance of introducing new values into a functioning system, their peculiarities, principles and regularities and validity of each historical period is revealed in detail.*

**KEY WORDS:** *Historical consciousness, values, spiritual worship, ideal, patriotism, national idea, self-consciousness, historical memory, cultural heritage, historical heritage.*

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### МЕСТО КУЛЬТУРНО-ТВОРЧЕСКОГО НАСЛЕДИЯ В ФОРМИРОВАНИИ НАЦИОНАЛЬНОГО ИСТОРИЧЕСКОГО СОЗНАНИЯ

**Аннотация:** В данной статье проводится научно-практический анализ места и роли духовных ценностей и идеалов в развитии исторического сознания. А также, подробно раскрывается значение внедрения новых ценностей в функционирующую систему, их особенности принципы и закономерности и обоснованность каждым историческим периодом.

**Ключевые слова:** Историческая сознание, ценности, духовное богатство, идеал, патриотизм, национальная идея, самосознание, историческая память, культурное наследие, историческое наследие.



## DISCUSSION

The government obtains political stability and development by historical traditions of its democracy, religious heritage, mentality of the nation. The exact attitude towards to that has in the Republic of Uzbekistan to make the strategy and tactics of fundamental changes. Every ethnicity, every nation creates its own cultural heritage in the process of historical development. Awareness of this cultural heritage helps human to build a historical knowledge. The outlook, socio-economic life, traditions, believes of those people, who lived in appropriate historical period, with another word, the history of the Homeland are shown by these cultural heritages.

History is the power which supplies our outlook, daily practical activities with spiritual support, which is the link connecting human being with all man-made material and spiritual values. A man can not recognise ongoing governmental, national, social changings unless he does not know historical knowledge. It is important to get acquainted with the contribution of the great thinkers of our nation in the formation of historical knowledge to the contribution of the development of world civilization, to remember the great historical events, the unifying of the events, to ignore false views, to fight against non-scientific teachings, to study comprehensively cultural heritage made by our ancestors. As a man is getting acquainted with the historical cultural heritage created by the ancestors, perceptions and concepts on historical period are becoming in his mind. That helps him to imagine the past, to properly understand the events and so on. The historical cultural heritage carries a great deal of information. This data is shaped in human outlook by means of concepts and transforms into thought.

The policy keeping away the nation from its history, culture and roots was run by former despot Soviet politicians. People who lived in Moscow and Saint Petersburg knew much better our national history then we did, and our past was dictated by others. It has left its negative impact on the historical knowledge of our nation. 'The spiritual heritage, the historical and cultural process were interpreted from the point of view of the class interests of socialism: a series of historical events which were widely known in the world were omitted as 'not being appropriate ones', in many cases, they were given an incorrect assessment [1;27]. Only by studying this great heritage can be formed youth spiritual image. This inheritance is only obtained with the history. Because it is impossible to complete effectively the reforms that we have today without studying this heritage. 'History endures everything. But it cannot endure falsification' [2;34]. Studying the history makes our minds be awake, gives chance to proud of the history, and keeps away from the mistakes made in the past.

'Learning history, - says the great German educator of the 18<sup>th</sup> century, Friedrich Schiller, - makes our brain be light, fulfils our heart with good feelings. And also that keeps our spirit away from making immoral and non-human approach to moral issues'[3;83-84].

Changing the attitude towards historical heritage, values, raising its status as a cultural treasury has become the important part of overall reform within the framework of the new socio-political system in Uzbekistan. For a short period of time, the ancient traditions of the people, centuries-passed national traditions and historical cultural heritage have been restored. Our people began to realize the new stage of their development with the acquisition of the inheritance rights for national reconstruction and cultural renewal. The process of transforming national values into servicing the national pride began to intensify. The role of historical cultural heritage and the formation of historical knowledge on the basis of self-consciousness, upbringing of young people in the spirit of patriotism, humanism and devotion to the country are extremely high. '... In our people's life, a completely new historical period has begun. This period was born as a period of ideas that serve the interests of human being and which is comprehensively vital, and is shaped by independence ideas. Especially, these relationships start emerging in the form of national independent idea, national philosophy enable to assess newly, look through closely, basing on them, that increases historical awareness and formation it to inner need' [4;125]. The role of historical cultural heritage in the formation of historical knowledge is shown as follow. As there are no people without historical memories, there is not a nation without background. In this sense, cultural heritage is a mirror reflecting nation's essence, spiritual world. As it is said that 'flowing river flows', if the people who have created a rich cultural heritage develop relationship with that, form historical knowledge, those enable to increase cultural development.

There is a hidden power which is felt by inner instinctive feelings, which is close to spirit of nation in cultural heritage. It can only be felt through awakening, sharp perception. Awareness of cultural heritage enlarges the worldview of people, encourages them to think to draw conclusions. Historical cultural heritage impresses people with national patriotism. It creates a sense of aspiration for ancestors to be worthy descendants. The cultural heritage perceived by historical knowledge reflects great spiritual power, wealth, talent. According to A.Mavrulov, the most important thing is that our young people have the right to be proud of their own history and the material and spiritual wealth created



by their grandparents. Despite the long colonialism, our educated nation never refused to create [5;34].

It has always been astonishing that nations who are or have in key points, revolutions, radical changing of working powers have a great interest to history. This phenomenon, which can help to grasp a number of specific aspects of the genesis of this historical knowledge, can be called as an interest to history. In this sense, in the context of the collapse of the totalitarian Soviet regime in Uzbekistan and the transition to a market economy based on democratic principles, the interest in history has dramatically increased. That can be noticed in following situations: initially, the fact that the creation of a new society and state in Uzbekistan has increased its interest in its historical roots and experience, secondly, high demand to maintain true data on history like after Tsar and Soviet ruling, our nation, who deliberately kept away from its history or spiritual roots reach to 'open fountains'; thirdly, the need for self-awareness and national revival is reflected in the past-present-future formula for the reconstruction of the heritage of ancestors and knowledge of history.

Historical knowledge is an important factor in the building of a highly educated society. Through the understanding of the past truly is a possibility to make serious changes in the minds of the people, thereby achieving life, lifestyle, and ultimately bringing the society to a higher cultural level. N. Jurayev states that the importance of forming historical thinking is manifested in the following aspects: initially, by understanding history one can understand a sense of life, understanding humanity is formed; secondly, through the historical thought, the meaning of life is deeply understood and the future philosophy is born. The way of thinking in everyone creates one's phenomenon of character, one's behaviour; thirdly, it will be possible to bring up through studying history a perfect man who is aware of his selfness, who can defend his rights; fourthly, being connected with the great ancestors who contributed positively to world civilization and human development, and priding of them are formed by learning country's background and that is huge spiritual power and will in the developing period. At the same time, a citizen who understands the greatness of his past, once again acknowledges that he owes a debt to the spirit of his ancestors and that he is accountable to the next generation. This awareness process leads to self-renewal, self-purification, self-discipline; fifthly, one's spiritual and moral refreshment triggers social refreshment, updating lifestyle, which is a wide-range reform. This becomes a major factor, value in the multifaceted transformation of the current reforms. The political, economic, legal reforms are appreciated, and their effectiveness increases, when they are included

directly human beings, minds, and hearts. Moreover, through political, economic knowledge, legal consciousness a spiritually-educated citizen of the period of independence will be brought up [5;17-18].

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# STUDY OF EPIDEMIOLOGICAL FACTORS ASSOCIATED WITH THE OCCURRENCE OF PULMONARY TUBERCULOSIS DISEASE IN WAD MADANI & AL MANAGIL HOSPITALS- GEZIRA STATE – SUDAN – 2017

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## ABSTRACT

*This descriptive study was conducted in Gezira State – Wad Madani & Al Managil Hospitals – Gezira State-Sudan- from 2016 to 2018. With an aim to study the epidemiological factors of new positive cases among TB patients in Wad Madani and ELmanagil centers in Gezira State. The sample size was Total coverage of all new positive smear TB patients transferred to Wad madani and Elmanagil centers in Gezira state. About 221 samples. The data were collected by using the following methods, observation (check list) while managing to patients, structure questionnaire which distributed for each patient infected with tuberculosis disease for the first time, The data were analyzed manually using master sheets, and using statistical package for social science (SPSS), and data were depicted in tables and figures. The study indicated that (69%) of the patients were male, while female were (31%). Young people are the most affected by TB disease about (61%) of total patients, (30.3%) of the patients use of stimulants and (69.7%) didn't use, The important recommendations in this study is that Improvement of work environment for T.B centers in Gezira state by maintenance of clinics and laboratories, training of staffs. Raising of health education in community for contributing to detect and treatment cases of T.B disease.*

**KEYWORDS:** *Epidemiological, Factors, New positive ,Tuberculosis, Centers.*

## 1 .INTRODUCTION

Tuberculosis (TB), one of the most widespread infectious diseases, is the leading cause of death due to a single infectious agent among adults in the world(1).

The words “tuberculosis (TB)” and “M. tuberculosis,” the bacterium that causes TB, are used in different ways(2),. The first known case of recorded pulmonary TB occurred between 668-626 BC. This record was found in the library of King Assurbanipal of Assyria the following is an extract: “The patient coughs frequently, his sputum is thick and sometimes contains blood. His breathing is like a flute. His skin is cold, but his feet are hot. He sweats greatly and his heart is much disturbed. When the disease is extremely grave, he suffers from diarrhea”(3). It is estimated that between the years 2000 and 2010 ,eight to nine million new cases emerged each year . Approximately 1.5 million people die from the disease each year .In adults ,tuberculosis is the second leading cause of the death due to infectious disease (after AIDS), with 95% of

death occurring in low-income countries . Tuberculosis is a major problem of children in poor countries where it kill over 100,000 children each year.(4). Tuberculosis is caused due to slow dividing bacteria. As a result, it takes the infection several months to years to develop active symptoms for the disease. However, within 2 to 12 weeks of exposure to the bacteria, a person may develop a primary infection to lungs. Incidentally, this infection is asymptomatic, meaning it does not produce any symptom at all. A chest X-ray at this time shows no infection to lungs(5). Tuberculosis (TB) is a communicable disease caused by bacteria of the ‘tuberculosis complex group’ (*mainly Mycobacterium tuberculosis* [MTB] and *rarely M bovis, M africanum and M microti*).

The infection is transmitted from one person to another through invisible droplet nuclei which are generated when someone with active TB of the lungs or larynx coughs, sneezes, spits, laughs or talks. Active TB may also occur in sites outside the airways but transmission does not occur from these sites or is

very uncommon (eg. discharging wounds or abscesses). Transmission is relatively insufficient (in comparison to highly contagious diseases such as measles and chickenpox) and depends on the infectivity of the source case, as well as the amount of time spent in contact with others and the environment in which contact occurs. Conditions such as overcrowding in poorly ventilated enclosed spaces that are not exposed to sunlight (which kills MTB bacilli) greatly enhance the risk of transmission.

*M bovis* (acquired directly or indirectly from cattle) has historically been a significant cause of TB. When ingested in milk containing large numbers of organisms, *M bovis* may penetrate the gastrointestinal mucosa or invade the lymphatic tissue of the oropharynx. Human infection with *M bovis* has been largely eliminated in developed countries as a result of milk pasteurisation and bovine TB control programs.(6).

## 2. METHODOLOGY

### 2.1. Study Design:

This study is a descriptive facility- based / cross\_sectional study for all new positive cases

among TB patients in Wad madani and Elmanagil T.B centers in Gezira state .

### 2.2 Samples:

Total coverage of all new positive smear TB patients transferred to Wad madani and Elmanagil T.B centers in Gezira state – Sudan, in the period from 1/7/2016 to 31/12/2016(about 6 months).and this may elides good outcome.

### 2.3 Data Collection technique:

Structured questionnaire which was distributed for each patient infected with tuberculosis disease for the first time. It includes :. epidemiological factors associated with the occurrence of pulmonary tuberculosis disease.

### 2.4 Data Analysis:

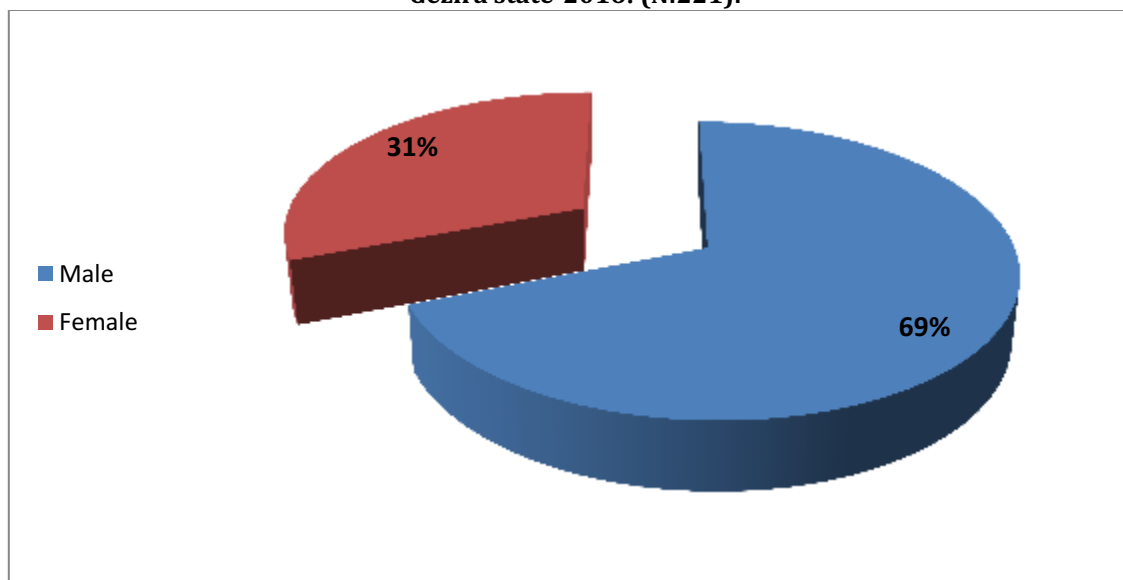
The data will be analyzed using statistical package for social science (SPSS).

### 2.6 Ethical Consideration:

- Consent of state ministry of health in Gezira state .  
\_Consent of participants in data collection.  
\_Consent of patients and strict confidentiality regarding patients information ,such as name, full residential address and ways of transmission, was considered.

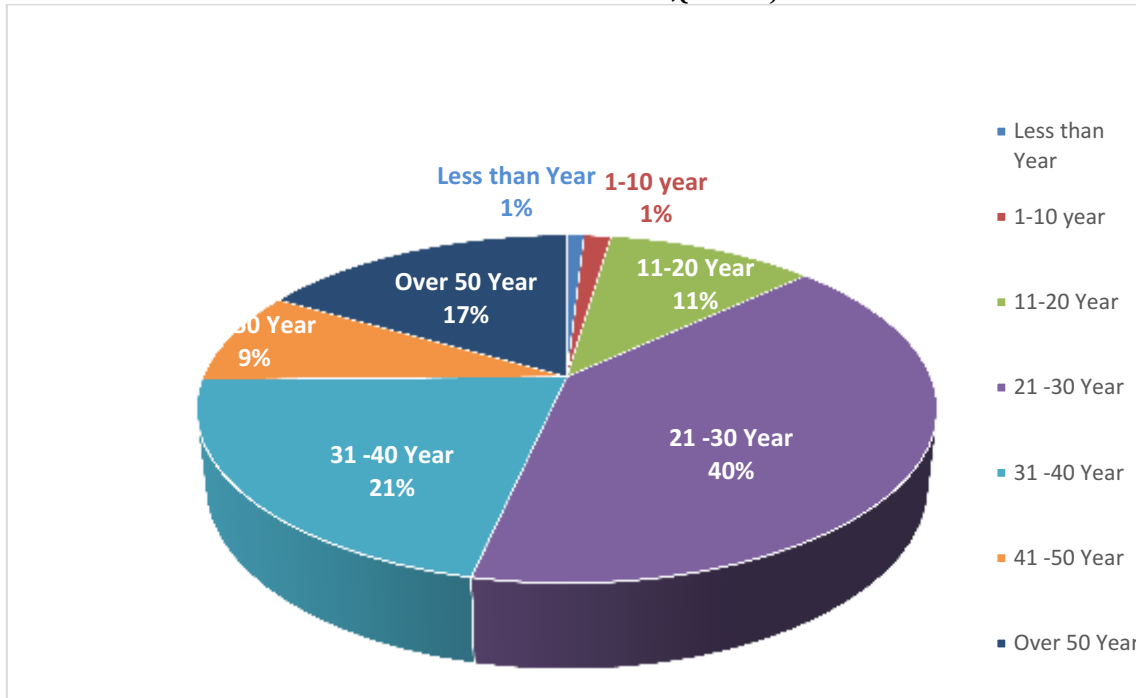
## 3. RESULTS

Figure(1): Gender distribution of new positive TB patients in wad madani &al managil centers – Gezira state-2016: (N:221).





**Figure(2) :Age distribution of new positive TB patients in wad madani & al managil centers - Gezira state- Sudan-2016,(N=221).**

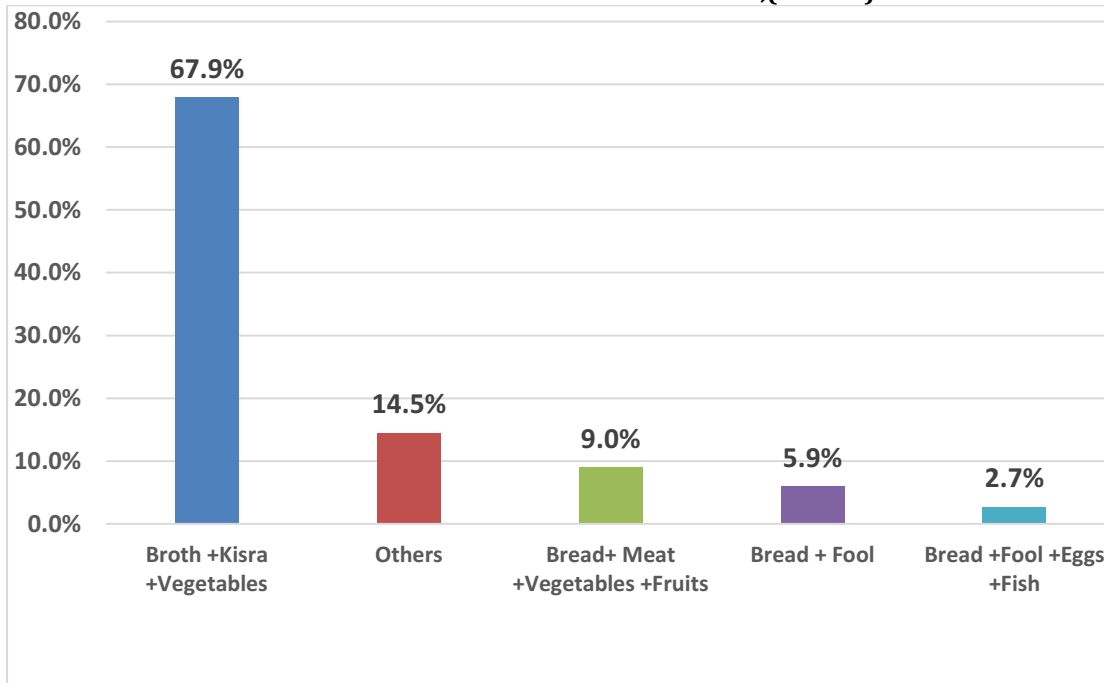


**Table (1): Shows Regularity of daily meals for new positive TB patients in wad madani &al managil centers - Gezira state -2016: (N = 221).**

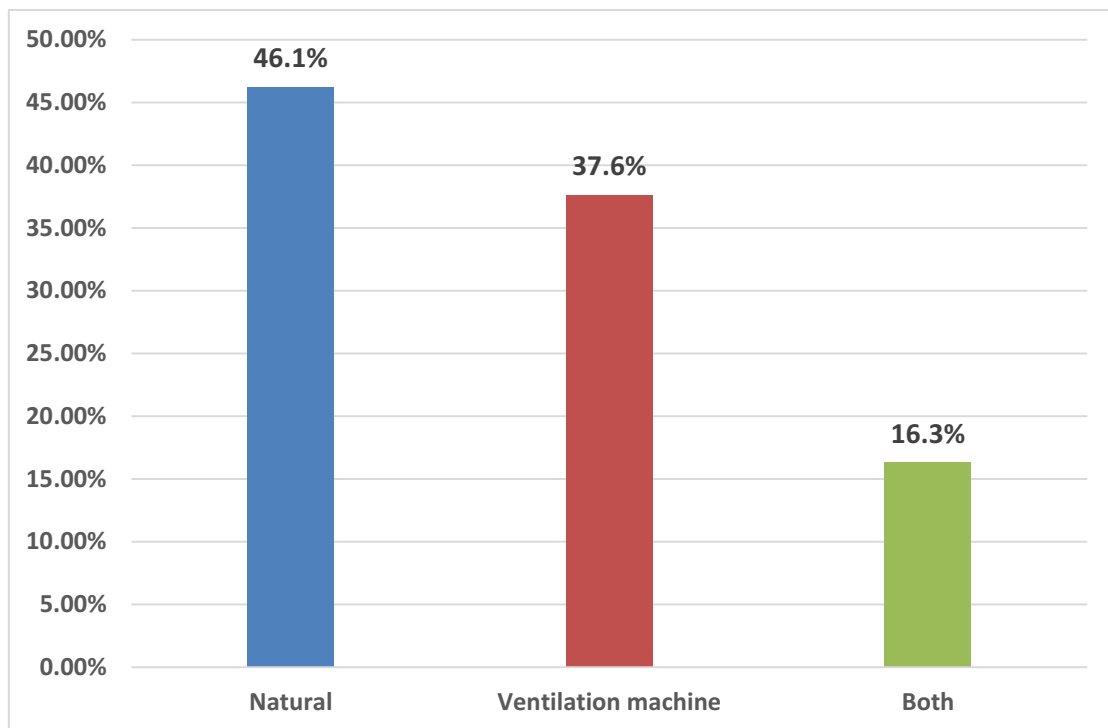
Regularity of Meals	Total	Percent%
Yes	131	59.3
No	90	40.7
<b>Total</b>	<b>221</b>	<b>100</b>



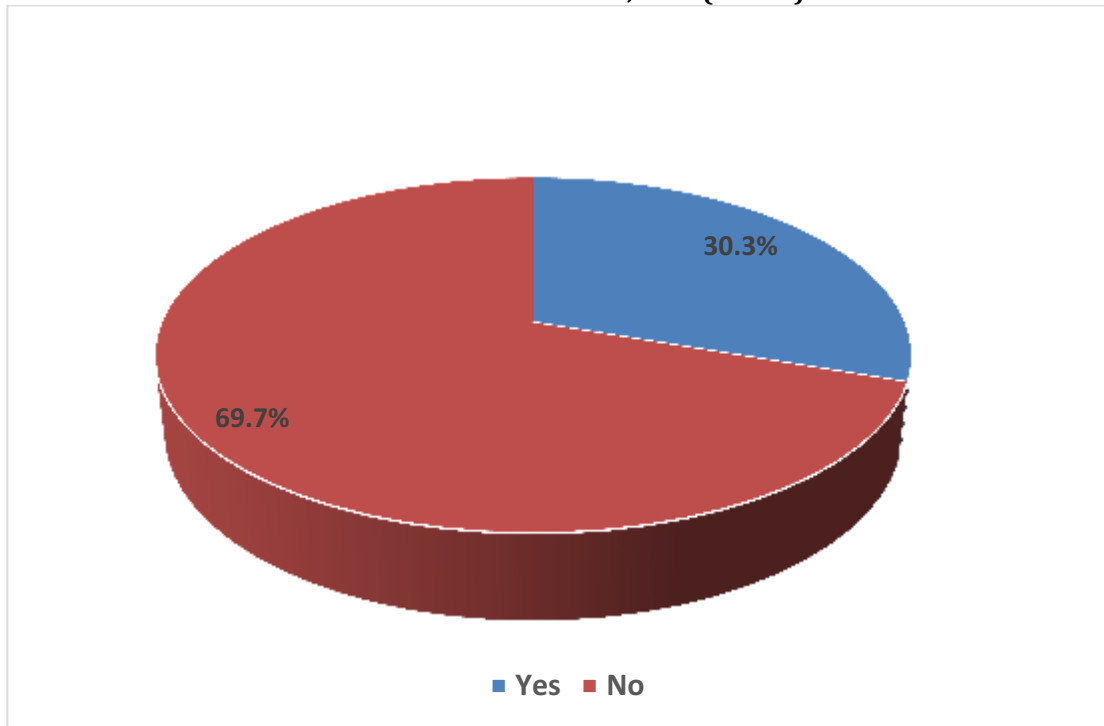
**Figure(3) : Percent of Type of daily meals for new positive TB patients in wad madani &al managil centers -Gezira state - Sudan 2016,( N=221)**



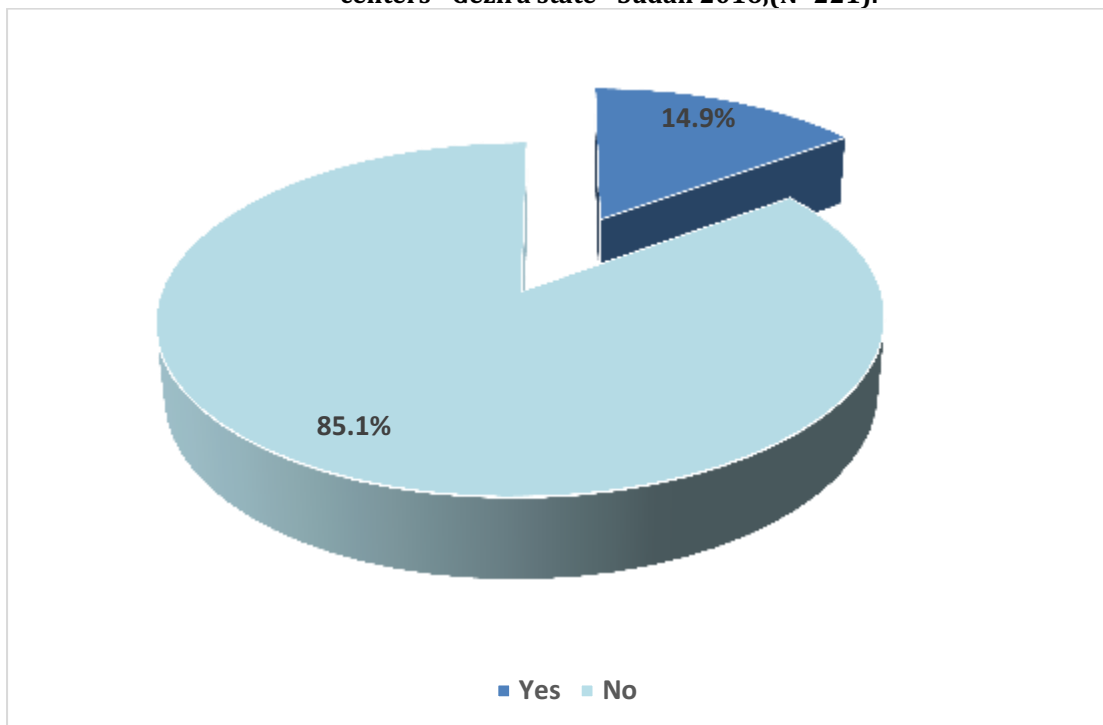
**Figure (4): Shows ventilation used by positive TB studied group majority in wad madani &al managil centers -Gezira state - Sudan 2016,(N=221).**



Figures(5): Use of stimulants by new positive TB patients in wad madani &al managil centers - Gezira state - Sudan, 2016(N=221).



Figures(6): Stigma sense in the society for new positive TB patients in wad madani &al managil centers -Gezira state - Sudan 2016,(N=221).





**Table (3): Shows New positive TB patients sent out from their house due to TB positive result in wad madani &al managil centers - Gezira state -2016:(N = 221).**

TB patients sent out from their house	Total	Percent%
Yes	13	5.9
No	208	94.1
Total	221	100

**Table (4): Shows known chronic diseases of new positive TB patients in wad madani &al managil centers - Gezira state -2016:(N = 221)**

known chronic diseases	Total	Percent%
Diabetes mellitus	8	3.6
HIV/ADIS	0	0
Cancers	0	0
Has no chronic disease	213	96.4
Total	221	100

#### 4. DISCUSSION

The study reported that (69%) of the targets are male, The women about (31%). Indicating that men are most susceptible to tuberculosis disease than women . compare with previous study conducted in Eastern Sudan (Kassala Hospital)-2011- by researchers (Abdallah and Ali ,2012 ) has indicated to (63%) of the study group male , and (36,3) female(7), Compare also with previous study conducted in South India by (N.shetty et al ,2006) has indicated (the sex distribution of the group was 58% men and 42% women(8) , (Global Tuberculosis Report, 2014) has indicated that (Though most TB cases and deaths occur among men, the burden of disease among women is also high(9). In 2013, there were an estimated 3.3 million cases and 510 000 TB deaths among women, as well as an estimated 550 000 cases).

The study indicated that (74.7%)of the targets ,in the age groups between 11 years and 40 year (product category more high risk), compare with previous study conducted in Kampala city (Uganda) by researchers (Kirenga et al, 2015 ) has indicated to (81%) of targets equal and less than 40 yea(10) r.

The study indicated about (68%) of the targets meals are incomplete (quality) were eating (bread + kissra+ vegetables ). (Hans L.Rieder, all- has indicated: Starvation or malnutrition reduces resistance to the disease. This is a very important factor in poorer communities, in both adults and children Drug-induced immunosuppression treatments used for treating certain diseases such as cancer also increase the chance of developing tuberculosis(11).

The study showed that the population has used of natural and ventilation machine (both) about

(16.3%) . (WHO- 2006)(12) has indicated { Natural ventilation, mixed-mode and mechanical ventilation systems can be used and supplemented with ultraviolet germicidal irradiation(UVGI) in areas where adequate ventilation is difficult to achieve. Where feasible, installation of ventilation systems should be a priority, because ventilation reduces the number of infectious TB germs in the air.

The study confirmed (30,3%)of the target use of stimulants ( drugs ,alcohol, cigarettes, snuff and others). About (17.6%) of the targets were smoking cigarettes, compare with previous study conducted in Georgia by (Madea a Gegia and others -2011 to 2013) has indicated to (45,9%) current smokers and (31.8%) were past smokers(13). And other study conducted in Sudan –Khartoum state by researcher (R. Khalid,2014)has indicated to: out of the 272 participants , (23.9%) stated that they smoked cigarettes , (36.9%) were currently smokers , while (76.1%) had never smoked(14).

The study reported that (15%) of the targets were sense of stigma in society ,through with living in society and focus on them . (Collins et all-) said: {The stigmatized individual often internalizes this sense of disvalue and adopts a set of self-regarding attitudes about the marked characteristic including shame, disgust, and guilt. These attitudes produce a set of behaviors that include hiding the stigmatized trait, withdrawing from interpersonal relationships, or increasing risky behavior}(15).

The study indicated to (6%) of the targets were sent out from their house and (5%) sent out from the work . (Baral et all)said: { Stigmatization is conceptually distinct from discrimination – another social determinant of health – in that the primary goal



of discrimination is exclusion, not necessarily for the target to feel ashamed or guilty}(16).

The study reported : A total of 221 participants were enrolled in this study including (3.6%) infected with diabetes, and (96.4%) did not infected with any chronic disease. compare with previous conducted in China by researchers (Liquan Zhang et al), has indicated to :( 22.9%)no infected, (40%) diabetes , (12%) liver diseases and (25%) others(17) , While other study conducted in Rewa – India by researchers Aashutosh Asati and others, has indicated to : (7.6%) were HIV infected , (10.2%) patients had diabetes mellitus , (13.7%)were using corticosteroids for treatment of other chronic illness , (26.4%) were malnourished , (16.2%) had history of contacts with other pulmonary T.B patients , (3.4%) patients had chronic kidney disease, and (1.7%) had malignancy(18) .

## 5. CONCLUSION

The present study reveals that various demographic , socioeconomic and environmental factors play a vital role in the etiology of pulmonary TB . Most important factor found were young age group , male gender , low socioeconomic status, exposure to TB infected patients , malnourishment and co-existing immune-compromised disease , Hence this study provides useful information about the epidemiological factors for new positive pulmonary TB that can used to control disease , by preventing these potential risk factor in population and timely diagnosis and providing treatment for pulmonary tuberculosis .

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# COMPANY MANAGERS' PROPENSITY FOR PARTICIPATIVE DECISION MAKING —A MIXED-METHOD STUDY AMONG TEXTILE INDUSTRIES IN BANGLADESH

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## ABSTRACT

*The study intended to identify if the assumptions of the “Theory Z” serve as predictors of the manager’s propensity for participative decision making. Earlier research reports that apart from employee’s intent to join in decision-making forum, the manager’s tendency is equally essential. The seven assumptions of the “Theory Z” were assessed for finding managers penchant for participative decision making. This study follows an explanatory sequential mixed method research approach with an emphasis on quantitative results. The sample comprises managers (strategical, tactical and operational) from thirteen Bangladeshi Textile Industries. Findings suggest that Ouchi’s assertion of the Theory Z (leadership style, trust, and organisational culture) have reliable predictability for manager’s propensity for participative decision making. The study theoretically contributes to the managers’ propensity for participative decision-making study by assessing the assumptions of the “Theory Z”. Practically, the findings present a convincing argument for managers to challenge their employees’ perceptions continually and to analyse objectively how their bias affects their decision-making processes in the least developed countries.*

**KEYWORDS:** *Theory Z, managers’ propensity for participative decision making, leadership, trust, organisational culture, Bangladesh*

## 1. INTRODUCTION

Participation is people’s mental and emotional involvement in group situations, which allows them to participate and share responsibility for group goals (Bamidele & Comfort, 2014). Participative decision-making (PDM) is a mechanism for employee involvement, administration in sharing decision-related information, and problem-solving (Wagner III, 1994). Although individuals may employ PDM at different organisational levels, this study is concerned entirely with managers utilising PDM. A couple of well-known management theories like Likert’s management system theory (1957), McGregor’s Theory X/Y (1964), Vroom and Yetton’s redefined autocratic-democratic continuum model (1985), and the Theory of Accountability by Kumar (2010) promote PDM.

Recent researches have shifted from the analysis of the method, purpose and modus-operandi of PDM to study why PDM sometimes fails. PDM is a well-practised business tool for managing people at work and increase in productivity allowing employees to have a voice in the decision making, little is known about the manager’s propensity for participative decision making (PPDM). Theoretically, this research joins the queue of PPDM study along with studies carried out by Parnell and Crandall (2001); Parnell (2010); and Parnell, Koseoglu and Dent (2012). The previous PPDM studies were conducted in developed and developing nations with quantitative data. PDM is studied in every part of the world, with a focus on the style of leadership, not on specific theories like Theory Z.



Enamul and Nilufar (2018) have opined that managers in the Bangladeshi textile industry often superimpose their will and desire on to the employees. Managers do not solicit any feedback from the employees. Islam, Nilufar and Mohammad (2018) in their research, stated that there is a lack of solidarity in Bangladeshi ready-made garments industries which often create chaos and confusion in the industry. Despite several theoretical models describing the degrees of “freedom” that managers grant employees in PDM, there is still a lack of a clear picture of the strengths that influence managers’ penchant for PDM. There is a growing need to understand if managers of the Bangladeshi textile industry pose definite proclivity for allowing employees to have to say in the decision-making forum. While addressing the literature gap found in the PPDM study, this study also addresses a burning issue of identifying the managers’ PPDM in Bangladeshi textile industries. From a scholarly standpoint, this study can extend our understanding of how the individual-difference variables of managers can vary in the degree to which employees are involved in PDM.

This study addresses if assumptions of “Theory Z” predict as managers’ PPDM in Bangladeshi textile industries. An explanatory sequential mixed-method design was used, first gathering quantitative data and then describing quantitative findings with in-depth qualitative data (McKim, 2017).

## 2. LITERATURE REVIEW

PDM is associated with workers involved in decisions that typically fall within the domain of the manager (Parnell et al., 2012). Numerous studies suggest that subordinate often prefers participative decision-making regardless of their influence in the organisation (Shaed, Ishak, & Ramli, 2015). Many researchers argue that participatory decision-making is a broad construct that necessarily associates success with numerous contextual factors (Parnell et al., 2012). The structures of the process of decision making can vary depending on the organisation (Chan et al., 2016). For example, one company may find that PDM is productive and beneficial. Another company may not promote PDM in the organisation (Timming, 2015). Parnell and Crandall (2001, p.531) opined that different organisations might exhibit different reasons for their success or failure in implementing PDM. For example, an organisational culture that promotes participatory approaches and admires productivity can cause reluctant managers to adopt participatory (commitment) attitudes. Managers who reject participation initiatives due to low commitment or perceived power loss may create a culture of

indecisiveness (Zubair, Bashir, Abrar, Baig, & Hassan, 2015).

PPDM study got momentum with the empirical study of Parnell (2010); Parnell & Crandall (2003); Parnell et al. (2012); and Russ (2011, 2013). These authors have empirically researched managers’ PPDM in developed and developing nations considering of various management theories. Like Russ (2011) conducted a study to find out if assumptions of McGregor’s Theory X/Z serves as the predictor of managers’ PPDM in the USA. The author suggested that future research may find out if assumptions of the Theory Z serve as predictors of the manager’s propensity for participative decision making. Till today no known research has studied whether the assumptions of the Theory Z are predicting the manager’s PPDM. In 1981, William Ouchi’s “Theory Z” ideas were featured in Time magazine as an elaboration of Japan’s economic success. Business Week considered him as a founding father of participative management along with Mayo, Maslow, McGregor, and Argyris. Although at first sight, it might be a bit confusing that Theory Z might be a sequel to McGregor’s Theory X and Theory Y, it is not. Ouchi’s study of participative management is an explanation of Japanese management success. American corporate world was familiar with the concept of employee involvement in the decision-making process but wondering how the Japanese were doing ahead of them. E. Islam & Kalimuthu (2020) in their study have found that the assumptions of Theory Z are a great tool to motivate people at work.

Aydin (2012), in his study, said that Theory Z offers the concept of a hybrid management style which is a combination of a strict American and Japanese management style. Theory Z expresses that an organisational culture that mirrors the Japanese culture in which workers are participative informed and take pride in their works. Theory Z stresses certain things such as job rotation, broadening of skills, generalisation versus specialisation, and the need for continuous training of workers. He also summarised that while McGregor’s Theory X talks about autocratic leadership and management style, Theory Y is more of setting up targets and needs persuasion. At the same time, Theory Z seems to be a more democratic approach. Theory Z hypothesise that some of the assumptions about employees include that workers prefer to build cooperative and friendly working relationships. Theory Z workers have specific needs to be fulfilled by the company and create a higher value working environment while taking care of the worker’s family welfare also (Aydin, 2012). Workers following Theory Z assumptions have a very well-developed sense of belongings, discipline, high morale, and a sense of



cohesion and have trust in themselves so extended management can provide a conducive environment (Pandey & Wali, 2010; Sullivan, 1983).

## 2.1 The Link among the Assumptions of Theory Z and Studied Variables

Drushal (1992) have categorised seven assumptions of Theory Z into four dimensions such as leadership, trust, communication and participative decision making. The present study has pigeon-holed the seven assumptions into three dimensions and justified that the seven assumptions fall under these dimensions.

### 2.1.1 Leadership Style

Theory Z premise that human management is more important than machine management (Aithal and Kumar, 2016, p. 4). Managers are necessary for any organisation, while leaders are essential. This study is not about discussing the controversy of managers or leaders' attributes. However, managers should have some leadership quality to manage people at work. There are two types of leaders often seen in any organisation, participative and directive. Theory Z postulates participative leadership style. A leader can take the workers along with the day to day business and lead them to attain organisational goals. Theory Z postulate that a leader should follow a democratic approach while dealing with workers. If the managers are not motivated to take advantage of PDM, it would rarely be possible to manage people at the workplace. Hence, a hypothesis can be developed that leadership style has a significant positive impact on managers' PPDM ( $H_1$ ).

### 2.1.2 Trust

Theory Z manager believes that employees are motivated by a strong sense of commitment. Employees will always seek opportunities for taking responsibility, and they will learn more about the company. Here the manager believes that employees learn the business through long-time employment and by making it possible for/her to have "lifetime employment" (Braden, 2000). As stated by Aithal and Kumar, (2016) "Theory Z emphasises the importance of adopting an organisational culture associated with trust, freedom, and collaboration by addressing employees individual needs, personalities, and goals." The fundamental belief of Theory Z is that average workers want to work and take part in company management (Braden, 2000). Building trust and confidence between employee and employer is also crucial for those enterprises that want to increase productivity. Once proclivity for participative decision-making process has a positive sign if he trusts his

employees. This argument leads us to hypothesise that managers who trust their employees and find a trustworthy environment in his organisation are more likely to have a definite propensity for the participative decision-making process. Therefore, we can say that trust (between manager and worker) has a significant influence on the manager's proclivity for PDM ( $H_2$ ).

### 2.1.3 Organisational Culture

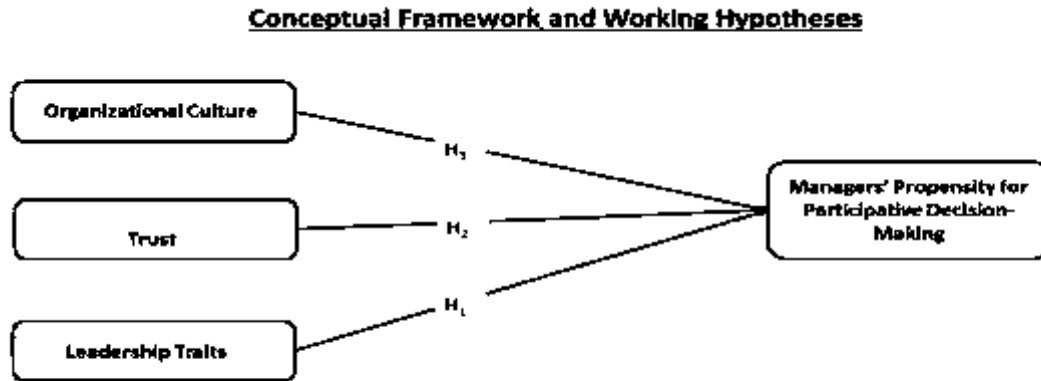
Organisational culture is critical for the effective implementation of employee participation. Managers' propensity is determined by prevailing organisational culture. When the participatory decision-making process is considered as a tool rather than a long-term philosophy are found less successful in the decision-making process (Appelbaum et al., 2013; Bhatti & Qureshi, 2007). Managers are likely to go for a participatory decision-making process if they think it will give a good quality decision and provided it does not take away their power to control the decision (Hollander et al., 1973). Participatory management style is highly successful in an individualistic and low-power distance society.

In contrast, the authoritarian management style is well suited in a cultural situation where high-power distance prevails in the superior and subordinate relationship (Parnell et al., 2012). In South Asian society, the management style is likely to be both hierarchical and paternalistic. The degree to which workers adhere to the organisation's principles and goals most likely be decided by the organisation's predominant management style. A preferred management style, however, is not evident in all organisations (Basit, Sebastian, & Hassan, 2017).

Dr William Ouchi, through his Theory Z philosophy, assumes that managers should have a strong philosophical understanding supported by organisational culture setting. Therefore, it can be assumed that organisational culture has an impact on managers' propensity for the participative decision-making process ( $H_3$ ). Figure 1 shows the pictorial view of the causal relationship between the variables. Three independent variables are leadership style, trust and organisational culture and the dependent variable is PPDM.



Figure 1: Conceptual Framework and Hypothetical direction



### 3.METHODOLOGY

This research study follows an explanatory sequential mixed-method approach. The study focuses on the managers' penchant for adoption or declination of PDM in day to day business operation. Therefore beside quantitative data, qualitative research is likely to provide rich text data that can be thematically analysed (Creswell & David, 2018; Greamer, 2018). The unit of analysis is the individual manager working in the textile industries. Managers at all levels (strategic, tactical and operational level) were selected randomly. The research instruments were adapted from existing literature. Research instrument developed by Aarons, Ehrhart and Farahnak (2014) was used for measuring leadership style. Trust scale was adapted from Tzafir and Dolan (2004). Organisational culture scale is adapted from the Denison Organizational Culture Survey (Denison & Neale, 1996). The PPDM scale was adapted from a scale developed by Parnell and Crandall (2001). All research instrument has a five-point Likert scale where 1 measured that the respondent strongly disagrees with the given statement, and 5 measured that they strongly agree. The research instrument were pilot tested before going for main study.

The qualitative study used purposive sampling to increase the transferability of the data. Data saturation was decided to be the cut-off point for stopping the qualitative sampling size. Because of COVID-19's effect along the countryside in Bangladesh, 12 out of 21 interviews were conducted online using Zoom Tele broadcasting software. The

research instrument contains seven semi-structured open-ended questions asked to all participants.

### 4. RESULT AND DISCUSSION

The research study has two-part. In the first part, the researchers have collected primary data from 364 respondents. The data were analysed to test a given set of hypotheses. The first part of the result will discuss quantitative data analysis. In the second part, the researchers have presented the qualitative findings after collecting rich text data from 21 interviews. This following section will give out quantitative data analysis and qualitative findings.

#### 4.1 Study 1 – Quantitative Data Analysis

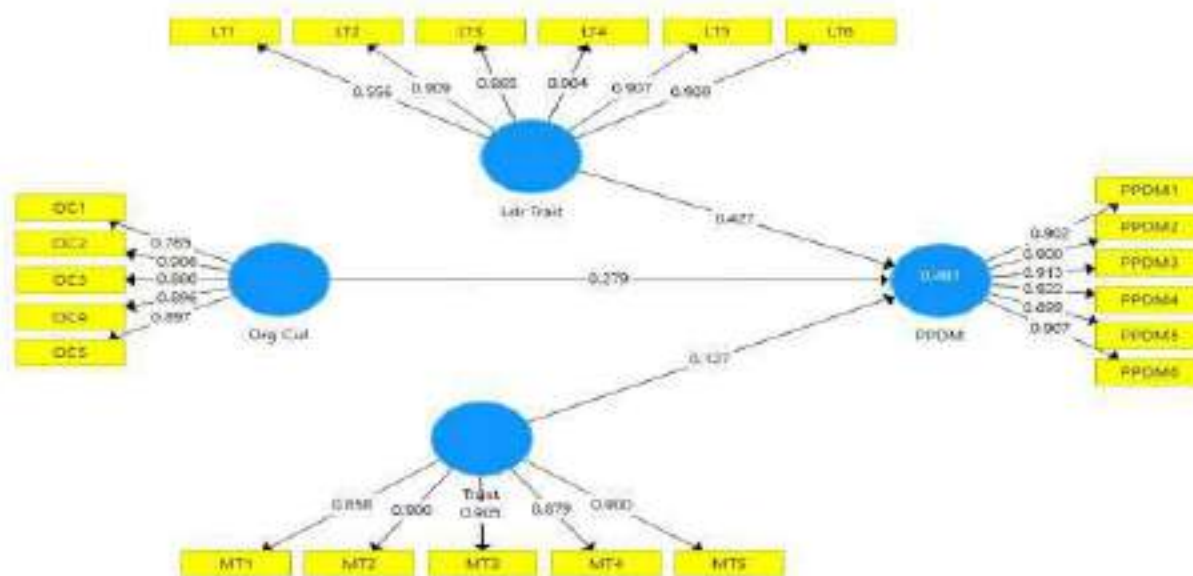
The broad objective of this research paper is to identify if the assumptions of Theory Z serve as predictors of managers' PPDM in Bangladeshi textile industries. The research adopts the Structural Equation Model (SEM) for data analysis. SEM can test the previous theoretical assumptions against empirical data, statistically. The researchers have conducted a normality test of the data using Mahalobish Distance test using SPSS and found that there are no multivariate outliers in the data set; however, the data are not normally distributed. The model presented in the study is a reflective model where the indicators are pointing towards the latent constructs. As can be seen in Table 1, Cronbach's "α" is >.7 and composite reliability values are above 0.70. Therefore, it can be assumed that the result indicates good internal consistency and reliability of primary data. The study also achieved convergent validity and discriminant validity (referring to Table 1 and Figure 1).

**Table 1: Reliability and Validity of data**

Latent Constructs	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Leadership Trait (Ldr Trait)	0.920	0.943	0.939	0.725
Organisational Culture (Org Cul)	0.923	0.937	0.942	0.764
PPDM	0.957	0.958	0.965	0.823
Trust	0.934	0.940	0.949	0.790

Source: Researcher's Primary Data Analysis (SmartPLS)

**Figure 1: Path Model showing outer loadings and path coefficient**



Source: Researcher's primary data analysis

#### 4.1.1 Result of Hypotheses Testing

Hypothesis H<sub>1</sub> proposed that a leader's traits have a significant influence on their propensity for participative decision-making. The t value is 7.488 while and p < 0.05 (0.000). The result indicates that this hypothesis is **supported**. Hence this research rejects the null hypothesis in favour of the alternative hypothesis. (see Table 2 for detail).

Hypothesis H<sub>2</sub> - trust (between the managers and subordinates) influences managers' PPDM. The

quantitative analysis should prove that mutual trust has a substantive effect on managers' proclivity for participative decision-making. The path relationship is significant at 1 percent (t=2.651; p-value is 0.008). This statistical analysis is rejecting the null hypothesis (referring to Table 2 for detail). There is a positive effect of trust on ones' proclivity for participative decision-making. Therefore, the study rejects the null hypothesis and found that the alternative hypothesis is **supported**.

**Table 2: The structural estimates (Direct effect)**

Hypothetical Relationship	Hypothesis	Sample Mean	Standard Deviation	T Statistics	P Values
Ldr Trait -> PPDM	H <sub>1</sub>	0.429	0.057	7.488	0.000
Trust -> PPDM	H <sub>2</sub>	0.128	0.048	2.651	0.008
Org Cul -> PPDM	H <sub>3</sub>	0.278	0.058	4.843	0.000

Source: Researcher's primary data analysis

Hypothesis H<sub>3</sub> - organisational culture might have a significant effect on managers' propensity for

the participative decision-making process. The quantitative analysis should demonstrate that



organisational culture has a functional effect on managers' proclivity for participative decision-making. The path relationship is significant at 1 percent ( $t=4.843$ ;  $p$ -value is 0.000). This statistical analysis rejected the null hypothesis that there is no effect of organisational culture on ones' proclivity for participative decision-making (see Table 2). Therefore, the alternative hypothesis is **supported**.

#### 4.2 Study 2 – Qualitative Findings

The study examined if the assumptions of Theory Z contribute to predicting managers' use or avoidance of PDM. All three hypotheses were supported. It was imperative to see if the participants have the same view when opinion is sought. The interview received rich text data from which to draw many codes. The data were analysed thematically with the aid of Atlas ti software. Due to space and word limitation, only summary of important findings is presented.

##### 4.2.4 Summary of the Qualitative findings

Most managers view this topic as new to them. Primarily the lower-level managers were found having no idea about the formal or informal participative decision-making process. However, the participants felt interested while taking interview being something new to discuss and learn. Significant findings from the qualitative discussion point of view are summarised below:

- a. Organisational culture not only influences the way managers to treat their workers but also demonstrates how workers conduct themselves in a specific way.
- b. The managers do not have confidence in their employees. The organisation is ignoring a few essential issues such as goal setting, positive feedback, open channel of communication and participation, and innovative suggestions. Traditional aspects of managers denying figuring out new ways to manage people at work.
- c. There prevails a high-power within the relationship of the superior and subordinate. Managers penchant for denying sharing their decision-making power is extreme. Making a decision is believed to be absolutely manager's prerogative - a concern which is not suitable for participative decision-making environment.
- d. Decision-making process in the case industries is more centralised and executed in a decentralised fashion. The reason behind in autocratic style of taking a decision is that management at the top

hierarchal level is not very keen to assign responsibility to the employees at a lower level due to the cultural norms, fear of unknown and stubborn attitude.

- e. The hierarchical structure in the case industries is incredibly centralised and formal. Age, seniority and appointment are respected blindly without asking questions and feedback of employees are not considered at all.
- f. Industries are yet to develop emotional bondage. Managers are highly concern about information leak. Managers have a firm belief that workers may not sacrifice for the betterment of the organisation and will only remain concerned about wage and benefit.
- g. Managers also have the belief that workers might misuse decision making power, and corruption may increase.
- h. Managers communication ability is not praiseworthy, which refrain them from communicating with the employees.
- i. Dominating character of the managers also posses' severe barriers for PDM.
- j. Dishonest and lose character often leads to decide alone and impose forcefully.
- k. Disagreement is viewed negatively and a fearful environment refrain employee to take part in decision-making.

#### 5. CONCLUSION AND GUIDELINE FOR FUTURE RESEARCH

Dr William Ouchi's Theory Z suggest how the USA managers can gain more productivity following the Japanese management strategies, researchers have proofed that the assumptions are equally applicable to other nations. Even there are many criticisms on this Theory, yet many developed nations have followed it and achieved success in business. The focus of this paper was to understand if the assumptions of Theory Z predicts as managers' PPDM in Bangladeshi textile industries. The quantitative study supported all three hypotheses. Manager's leadership trait has a significant effect on the manager's PPDM. The research found that mutual trust is also another essential dimension affecting managers' PPDM. The organisational culture embedded with strong philosophy like delegation of authority, holistic concern for employees' family, long-term employment, slow promotion and evaluation is paramount important. The qualitative study justified that Bangladeshi managers do not pouses required proclivity for PDM. Employee loyalty is affected by salary and wages. Employees should be trusted and empowered with responsibility. Managers should believe that consensus in decision-making is likely to



produce a good quality decision and reduce resistance to change. Managers did not agree with the slow promotion and evaluation process. This idea may not be suitable for a Bangladeshi perspective. Also, long-term employment did not find enough positive response from the participants. These two assumptions may not be effective in Bangladesh. However, managers agreed with sharing some decision-making power. Holistic concern for families was found an excellent tool to motivate employees.

There are certain limitations to the study. The study was conducted on 13 textile industries out of 312. The sample should have been considered from the maximum number of industries. Only three variables are considered while more attention should have been given like job satisfaction, motivation, organisational climate and managers' locus of control. However, being a pioneer study on managers' PPDM in the least developed country, this research opens many avenues for future research. Future researchers may consider employees' perspective and learn how they think about the implementation of the assumptions for Theory Z. Subsequent studies may wish to extend this line of research by considering managers' avoiding tendency for PDM concerning the Theory of planned behaviour. More considerable attention is needed from researchers and practitioners to understand if an organisational climate influences managers' PPDM.

The researchers hope that current research will instill interest among the managers of Bangladeshi textile industries and other manufacturing industries as well as facilitating to identify the required penchant of the managers for participative management.

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# RELIABILITY MEASURE OF THE KAP STATEMENTS FOR ANAEMIC ADOLESCENT GIRLS IN PALANI BLOCK

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## ABSTRACT

*According to World Health Organisation, Adolescents are defined as the period of life spanning the ages between 10-19 years. It is a vulnerable period in the human life cycle for the development of nutritional anaemia. The main objective of the study was to estimate personal background of the adolescent girls and to measure the internal consistency of the items using Cronbach's alpha value. A cross sectional study was conducted with 30 adolescent girls from the selected school in Palani Block, Dindigul District, Tamil Nadu. Data was coded, analysed and presented in frequency tables and inferential statistics through SPSS version 23. All the statements (Knowledge, Attitude and Practice) meet the acceptable standards for reliability coefficient, with values greater than 0.80. Thus the study concludes that the statements are highly reliable to the adolescent girls suffering from anaemia.*

**KEY WORDS:** Adolescent girls, Anaemia, Reliability, KAP, Palani Block

## INTRODUCTION

Adolescence being a rapid transition phase with rapid requirement additional nutrition. It is well established that in adolescent girls, menstrual blood losses with rapid growth leading to expansion of red cell mass and increased tissue iron requirements, make them particularly vulnerable to iron deficiency compared to male counter- parts. The female child is more likely to be neglected as she is deprived of good food and education and is utilized as an extra working hand to carry out the household chores. Anemia in adolescent girls in future attributes to high maternal mortality rate, high incidence of low birth weight babies, high prenatal mortality and fetal wastage (Shesha, Chaluvraj, & Satyanarayana, 2018).

Nutritional anaemia especially iron deficiency anaemia is widely prevalent in many parts of the world. The prevalence in the developing countries tends to be three to four times higher than that in the developed countries. Anaemia is the most common nutritional disorders in the developing world and the most common cause of nutritional anaemia among young women with 40% of prevalence of anaemia in the world. Iron deficiency of anaemia is probably the result of many factors with loss of iron during menstruation.

The term teenage years are used synonymously with adolescence to describe ages 13 through 19 years. Adolescence extends from 10 – 19 years in girls (Murteli, 2015).

School-based nutrition education research studies were based primarily on a knowledge-attitude-behavior approach, while disease reduction/health enhancement studies were behaviorally oriented and generally based on social learning theory. It is commonly understood that good nutrition among adolescents is important for healthy growth and development. But in addition to good health and nutrition increase the adolescent's attention span, its learning capacity, and its ability to fully engage in educational experiences (Perveen, 2017).

Several studies report a lack of appropriate knowledge and attitude regarding healthy eating among adolescents and consequent unhealthy eating behaviour. A desire to consume a healthy and balanced food may exist, but it does not translate fully to behaviour modification. Continuous eating of unhealthy food leads to serious health problems. Achieving the desired changes of behaviour in health and nutrition depends on gaining sufficient knowledge,





attitudes, good practice, and self-efficacy (Jalambo, Sharif, Naser, & Karim, 2017).

Behavior manifested in three forms, namely knowledge, attitudes, and practices. Social determinants become an important point to encourage the occurrence of nutrition and health problems (Patimah, Royani, Mursaha, & Thaha, 2016). KAP studies have been used for two main purposes: (1) to collect key information during a situation analysis, which can then feed into the design of nutrition interventions and (2) to evaluate nutrition education interventions (Shilpa, Sreni, & Betty, 2016).

Tests and questionnaires are instruments that are commonly used in the behavioral and social sciences to measure knowledge, skills and attitudes of participants or respondents. Once a test or questionnaire has been administered, a test score, for example the sum score, is used to summarise the knowledge, attitude or performance of a respondent. In practice, the reliability of a test score must be estimated from the data of a study. The measure that is most frequently used to estimate reliability in behavioral and social science research is coefficient alpha (Hoekstra, Vugteveen, Warrens, & Kruyen, 2019).

Testing for reliability is important as it refers to the consistency across the parts of a measuring instrument. A scale is said to have high internal consistency reliability if the items of a scale “hang together” and measure the same construct. The most commonly used internal consistency measure is the Cronbach Alpha coefficient. It is viewed as the most appropriate measure of reliability when making use of Likert scales. No absolute rules exist for internal consistencies, however most agree on a minimum internal consistency coefficient of 70 (Hamed Taherdoost 2017).

Cronbach’s alpha is a measure of the internal consistency or reliability between several items, measurements or ratings. In other words, it estimates how reliable are the responses of a questionnaire (or domain of a questionnaire), an instrumentation or rating evaluated by subjects which will indicate the stability of the tools. Alpha was developed by Cronbach, which was originally used to measure the reliability of a psychometric instrument. The value of Cronbach’s alpha ranges from zero to one with the higher values implying the items are measuring the same dimension. In contrary, if the Cronbach’s alpha value is low (near to 0), it means some or all of the items are not measuring the same dimension. To ascertain whether the items are reliable in measuring the same dimension, a test for Cronbach’s alpha may be used. The Cronbach’s alpha test is usually applied to test the consistency and stability of the questionnaires which

measure latent variables. Although Cronbach’s alpha test may be applied in situations other than questionnaire development or validation, there is limited literature of its application in such scenarios. Cronbach’s alpha has been applied in research to develop clinical tool (Bujang, Omar, & Baharum, 2018).

## OBJECTIVES OF THE STUDY

- To elicit personal background of the selected adolescent girls.
- To measure the reliability/ internal consistency of the items using Cronbach’s alpha value.

## METHODOLOGY

Methodology is the general research strategy that outlines the way in which a research project is to be undertaken and, among other things, identifies the methods to be used in it (Igwenagu, 2016).

## RESEARCH DESIGN AND SAMPLING

Cross sectional research design was carried Cross-sectional study design is a type of observational study design. In a cross-sectional study, the investigator measures the outcome and the exposures in the study participants at the same time (Setia, 2016). The study population consists of 30 adolescent girls from Palani block which is located in Dindigul District, Tamil Nadu. Sampling is concerned with the selection of a subset of individuals from within a defined population to estimate characteristics of the entire population (Igwenagu, 2016).

## SAMPLING TECHNIQUE

Convenient sampling technique was used by the researcher to select the subjects. In this method, the investigators enroll subjects according to their availability and accessibility. Therefore, this method is quick, inexpensive, and convenient. It is called convenient sampling as the researcher selects the sample elements according to their convenient accessibility and proximity (Elfil & Negida 2017).

## Data collection procedure

Permission was obtained from District Educational Officer and Head Master for requirement of study participants. The data was collected through Google forms with a close ended structured questionnaire to the adolescent girls.

## Statistical design

The data was coded and analysed using SPSS version 23 to give clear picture of background information. Quantitative data was represented in the

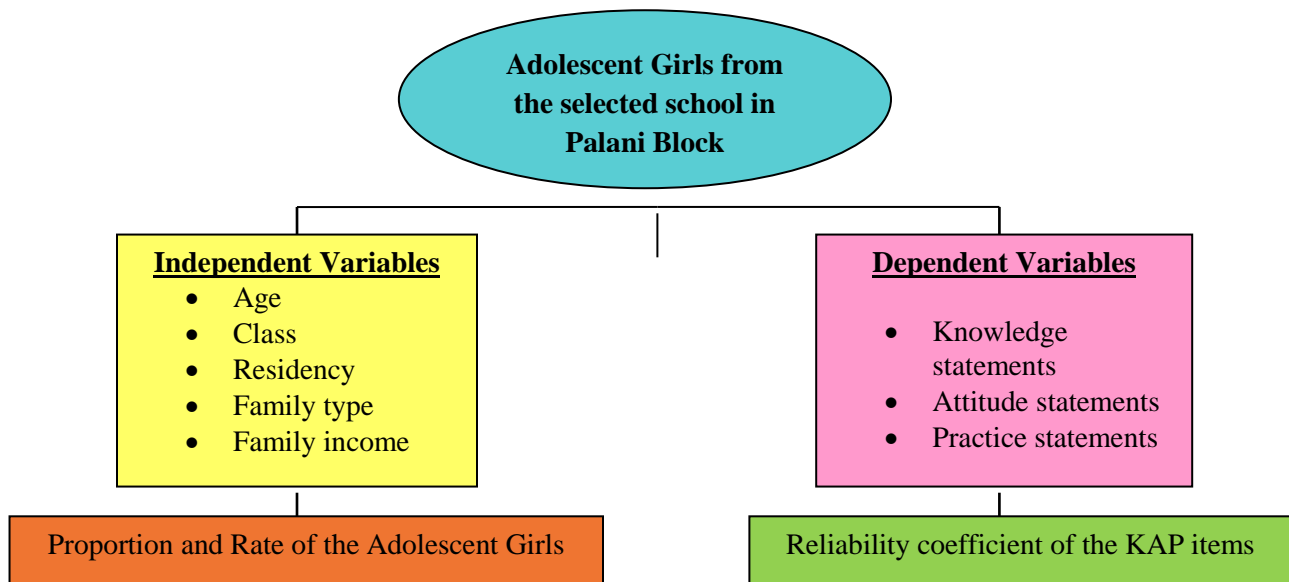
form of frequency and percentages. The reliability test was measured using Cronbach's alpha value. Then the data was analysed, tabulated and interpreted.

### Geographical area

The study was carried in Palani block of Dindigul District which is located in Tamil Nadu, India. According to National Family Health Survey-4, 53 per cent of women aged 15-49 years are anaemic

in India. The prevalence of anaemia in pregnant and non pregnant females aged 15-49 years is 50.3 per cent and 53.1 per cent respectively in India. Similarly the prevalence of anemia in women aged 15-49 years in Tamil Nadu is 55.1 per cent and in Dindigul District is 51 per cent respectively (NFHS IV Tamil Nadu, 2014-2016). Therefore the prevalence rate of anaemia is high in the selected area.

Figure 1 Conceptual framework of the study



The conceptual framework of the study was shown in the fig.1. A conceptual framework is a structure which the researcher believes can best explain the natural progression of the phenomenon to be studied. It is linked with the concepts, empirical research and important theories used in promoting and systemizing the knowledge espoused by the researcher. It is the researcher's explanation of how the research problem would be explored. The conceptual framework offers many benefits to a research. For instance, it assists the researcher in identifying and

constructing his/her worldview on the phenomenon to be investigated. Conceptual frameworks are always constructed by researchers. The author also states that conceptual frameworks are a generative framework that reflects the thinking of the entire research process. Mostly, diagrams are created to clearly define the constructs or variables of the research topic and their relationships are shown by the use of arrows (Adom, Hussein, & Joe, 2018).



## RESULTS AND DISCUSSION

**Table 1 Personal background of the adolescent girls**

Variables	No.of students (N=30)	Percentage (%)
<b>Age</b>		
15 years	12	40
16 years	4	13.3
17 years	6	20
18 years	8	27
<b>Class</b>		
9 <sup>th</sup> Std	12	40
10 <sup>th</sup> Std	4	13.3
11 <sup>th</sup> Std	6	20
12 <sup>th</sup> Std	8	27
<b>Residency</b>		
Urban	19	63.3
Rural	11	37
<b>Family Structure</b>		
Joint family	19	63.3
Nuclear family	11	37
<b>Family income</b>		
Rs.3000/- Rs.5000/-	7	23.3
Rs.5001/- Rs.10,000/-	13	43.3
Rs.10,001 and above	10	33.3

Out of 30 adolescent girls 12(40%) of them were in the age of 15 years, 12(30%) of them were in the age of 17 years and 11(27.5%) of them were in the age of 16 years. The selected adolescent girls were studying in 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> standard. Nearly 12(40%) of them are in 9<sup>th</sup> standard, 8(27%) of them are in 12<sup>th</sup> standard, 6(20%) of them are in 11<sup>th</sup> standard and 4(13.3%) of them are in 10<sup>th</sup> standard respectively.

About 19(63.3%) of the subjects were from urban area and joint family. Nearly 11(37%) of the subjects were from rural area and nuclear family in and around the Palani Block. Most of the income was between Rs.5001-10000/-. Those who are in the bracket of above Rs.10,000/- constituted 10(33.3%).

Only 7 (23.3%) of the families were living below the poverty line.

The results of reliability analysis and item analysis are discussed below. As employed in the study, reliability analysis using internal consistency measures was one in reference to the questions. As a reliability coefficient, Cronbach's alpha estimates the reliability of the scale by determining the internal consistency of the test or the average of all the correlations between each item and the total score (Rosaroso, 2016).

The reliability coefficients of the Knowledge statements and its overall reliability are shown in the table 2.

**Table 2 Reliability coefficient of the knowledge items**

Knowledge statements	Mean	Standard Deviation	Correlation	Reliability coefficient
Anaemia refers to a reduced haemoglobin level	4.87	.450	.821	<b>0.900</b>
Normal Hb level among Adolescent Girls is 12g/dl	4.90	.430	.900	
Girls are more vulnerable to anaemia	4.97	.379	.668	
Heavy blood loss due to menstruation can cause anaemia	4.90	.430	.505	
Magnesium increases iron requirements	4.90	.430	.900	

The respondents agreed that they are more vulnerable to anaemia (4.97) according to the statement. The Cronbach's alpha values for the knowledge

statements meet the acceptable standards for reliability coefficient, with values greater than 0.80.



**Table 3 Reliability coefficient of the attitude items**

Attitude statements	Mean	Standard Deviation	Correlation	Reliability coefficient
Treatment of anaemia is expensive	4.67	.346	.828	<b>0.828</b>
Consuming deworming tablets will kill the worms	4.63	.379	.815	
Regular exercise helps in curing anaemia	4.57	.430	.258	
Food supplementation will prevent anaemia	4.70	.305	.539	
Drinking tea/coffee after meals will hinder the absorption of iron	4.63	.379	.815	

Table 3 shows the reliability coefficient of the supplementation. The Cronbach's alpha values for the following statements. The statements are highly reliable attitude statements meet the acceptable standards for and the girls responds positively (4.70) to the food reliability coefficient, with values greater than 0.80.

**Table 4 Reliability coefficient of the attitude items**

Practice statements	Mean	Standard Deviation	Correlation	Reliability coefficient
Individuals should not take iron supplementation/other treatment without Physicians advice	4.73	.430	.855	<b>0.807</b>
Rice is the poor source of dietary iron	4.77	.407	.757	
Consuming neem leaf is a good practice/home remedies for deworming	4.87	.305	.554	
Anaemia can be treated by consuming low cost iron rich foods	4.77	.407	.582	
Junk food helps in preventing anaemia	4.73	.430	.297	

Table 4 shows the reliability coefficient of the following statements. The practice of home remedies for deworming statement (4.87) is highly reliable. The Cronbach's alpha values for the attitude statements meet the acceptable standards for reliability coefficient, with values greater than 0.80. Cronbach's alpha is often used in assessing the reliability of tests for knowledge on nutrition, with questions that have more than two possible responses (8). Cronbach's alpha ranges from r=0 to 1, with r=0.7 or greater considered as sufficiently reliable (18) (Deniz & Alsaffar, 2013).

**CONCLUSION**

For an exploratory or pilot study, it is suggested that reliability should be equal to or above 0.60. Hinton et al have suggested four cut-off points for reliability, which includes excellent reliability (0.90 and above), high reliability (0.70-0.90), moderate reliability (0.50-0.70) and low reliability (0.50 and below) (Hamed Taherdoost 2017). The questionnaire

assessed in this study proved to be a reliable tool to determine the knowledge, attitude and practice. The present study found that the knowledge coefficient as 0.9, for attitude and practice 0.8. Cronbach's alpha test is suitable for conducting pilot studies. In studies related to questionnaire development Cronbach's alpha is common pointer for internal consistency and so it was used. The test shows the items are highly reliable to the adolescent girls pertaining to anaemia knowledge, attitude and practice.

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## EMPIRICAL STUDY ON EQUITY IN CSR SPENDING: WITH SPECIAL REFERENCE TO INDIA

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### ABSTRACT

*The most vital element or issue governing the recent major discussions on Corporate Social Responsibility practices of Indian corporate are variation in various aspects of CSR spending. The social responsibility of every element of the society is important. The combination of fulfilment of responsibilities by individual parts creates social wellbeing at large. The poor performance in terms of fulfilment of social or environmental obligations by any section of the society has a far reaching and trickle down impact on other sections. The business world is not an exception to this. With the increase of expanse of corporate in the every sector of the country, it's become really important how efficiently the CSR spending is being undertaken by them; both in terms of absolute figure and evenness in spending. CSR is becoming a most important factor for corporate in maintaining social license to operate. Researchers here are concerned about the evenness in CSR spending among various states, zones and among various activities. Researchers have conducted ANOVAs: Single Factor, parametric test to fulfill research objectives. Significant variation has been observed in respect of various aspects of CSR spending. Researchers tried to put logical conclusions and recommendations in explaining the test results and in solving the present problems in the concerned area of research respectively.*

**KEY WORDS:** *Corporate Social Responsibility Practices, Social License, Social Wellbeing, Trickle Down Impact.*

**JEL Classification:** *C12, C88, Y10.*

### BACKGROUND

A company being a legal entity, is a part of our community; having some responsibilities to community. Thus, corporate social responsibility is its natural response to society.

Companies are run by the people, for the people and of the people. In all operations and activities of a company there should be aim of achieving sustainable development in social and environmental dimensions simultaneously with economical dimension. Management should consider the social effects as well as economic effects in its decision. It implies recognition and understanding of the aspirations of the society and determination to contribute to its achievement. In real sense, the shareholders of a company have not all the rights that true owners would have. They want the company to be run. If Managers steer company in a socially beneficial manner, it must run progressively long way. The avoiding of social responsibilities on the part of many corporate houses in the country has become a practice. The social and environmental degradation has been occurred both due to the avoidance of social responsibilities by the business, apart from destroying the societal resources. With the

passage of time this issue is becoming very much prominent to researchers; as it is directly linked to social welfare. Extensive and in-depth empirical study regarding various aspects governing CSR spending is very much time relevant now.

### REVIEW OF LITERATURE

Muthusamy, A. & Negi, R. (2019). The study focuses on how different companies of Tamil Nadu are discharging their social and environmental obligations through CSR spending and how far it is up to the mark in various respects. It also focuses on pattern of CSR spending. It has been observed that companies are taking CSR as a issue not restricted to just legal obligations. Companies are spending for CSR activities under wide purposes as social and philanthropic responsibilities. Still government supervision is required to ensure that CSR spending are done for desired purposes without any wastage. Shyam, S. (2016). Study has objectified the understanding regarding concept and pattern of CSR spending prevailing in the country, apart from understanding the changes in CSR spending pattern, the policies governing CSR issues and major challenges faced in ensuring desired CSR spending in



the country. The study also looks into the role of SMEs in CSR spending initiatives. The research concludes the unparalleled linkage between CSR and sustainable existence for corporate. The idea and spending regarding CSR has long been understood and recognized by Indian corporate as unavoidable social obligation. In realising the true objectives of CSR, there is a need for cooperation from all the stakeholders. Bholra, K. & Malhotra, R. (2014). Researchers here focus on the need of legal regulations in the form of ethical principles in ensuring the foolproof adherence of social and environmental obligations by the businesses through CSR spending in India. It also broadly identified the rules and regulations required here. The study has taken special reference of several Indian IT companies for fulfilling the study objectives. It has been observed that though there are many companies in the country take CSR as a philanthropic duty. Still regulatory interventions are required in achieving better societal impacts from CSR. Metaxas, T. & Tsavdaridou, M. (2014). How different European companies have fulfilled their social and environmental obligations through various CSR activities undertaken are studied in a comparative way. This also reveals how different companies under consideration are tackling their environmental concern through CSR based green management. It has been found that different European companies fulfil their environmental concerns by undertaking different types of CSR activities. Some companies are really pioneer in developing various environment and social problem solving mechanisms, as a part of the CSR initiatives. Fulfilling of social and environmental obligations are responsible for bettering organizations' strategic position and employee morale and loyalty.

### RESEARCH GAP

Based on the above detailed review of literature the researchers have found that literature contains no specific research work regarding variation of CSR Spending among different purposes and areas in India that are undertaken and formally reported by companies operating in India. Considering this as a major research gap with huge social significance; the researchers has identified several set of questions as research objectives in fulfilling this research Gap.

### OBJECTIVES OF THE STUDY

1. To see whether there is any uneven distribution of CSR spending undertaken in various states of India.
2. To see whether there is any uneven distribution of CSR spending undertaken in various zones of India.

3. To see whether there is any uneven distribution of CSR spending undertaken for different activities in India.

### RESEARCH QUESTIONS

1. Whether average CSR spending in different states vary significantly?
2. Whether average CSR spending in different zones vary significantly?
3. Whether average CSR spending for different activities vary significantly?

### RESEARCH HYPOTHESES

1.  $H_{01}$ : There is no significant variation in average CSR spending being undertaken among different states.
2.  $H_{02}$ : There is no significant variation in average CSR spending being undertaken among different zones.
3.  $H_{03}$ : There is no significant variation in average CSR spending being undertaken for different activities.

### METHODOLOGY FOLLOWED-

1. The CSR expenditure incurred in top 10 states of India as per population (as per census 2011) for three years from 2014-15 to 2016-17 are being presented and then by the application of single factor ANOVA it has been statistically proved whether average CSR spending among these states significantly differs or not.
2. Average CSR expenditure incurred in different zones of the country for three years from 2014-15 to 2016-17 has been computed considering states falls under it and then by the application of single factor ANOVA it has been statistically proved whether average CSR spending in different zones of the country statistically differs or not. Only states are considered for this purpose. States Existed as on 03.04.2018 has been considered.
3. 12 activities has been considered for which CSR spending are done and three years data regarding it from 2014-15 to 2016-17 has been considered and then by the application of single factor ANOVA it has been statistically proved whether average CSR spending for 13 different activities statistically differs or not.

The parametric test has been done. Due to the nature of the data and due to very small sample size it has been assumed that data has normal distribution and parametric tests are more concrete than non-parametric tests in testing the hypothesis.



## PRESENTATION OF DATA AND ANALYSIS

### GEOGRAPHICAL DISTRIBUTION OF TOTAL CSR EXPENDITURES IN TOP 10 STATES AS REPORTED FROM FY:- 2014-15 to 2016-2017 (In Rs. Crores ), Table -1

Rank	States	2014-15	2015-16	2016-17
1	Uttar Pradesh	138.64	406.93	120.34
2	Maharashtra	1,372.34	1,810.45	702.37
3	Bihar	36.20	108.15	36.90
4	West Bengal	178.61	399.89	121.12
5	Madhya Pradesh	137.15	178.94	213.48
6	Tamil Nadu	498.89	597.60	202.53
7	Rajasthan	271.36	472.46	84.99
8	Karnataka	382.79	730.64	202.71
9	Gujarat	296.53	550.98	152.04
10	Andhra Pradesh	403.91	1,220.54	101.69

Source: GOVERNMENT OF INDIA MINISTRY OF CORPORATE AFFAIRS, RAJYA SABHA UNSTARRED QUESTION NO. 4031 ANSWERED ON TUESDAY, THE 3rd APRIL, 2018, FAKE DEVELOPMENT WORK UNDER CSR, QUESTION.

H<sub>01</sub>: There is no significant variation in average CSR spending among different states.

#### Analysis

Whether average CSR spending in different states vary statistically significantly or not is being tested through the following test.

Table -2

Anova: Single Factor						
SUMMARY						
Groups	Count	Sum	Average	Variance		
Uttar Pradesh	3	665.91	221.97	25741.3737		
Maharashtra	3	3885.16	1295.053	311440.2432		
Bihar	3	181.25	60.41667	1708.975833		
West Bengal	3	699.62	233.2067	21663.77523		
Madhya Pradesh	3	529.57	176.5233	1460.947433		
Tamil Nadu	3	1299.02	433.0067	42275.53643		
Rajasthan	3	828.81	276.27	37551.3313		
Karnataka	3	1316.14	438.7133	72023.08563		
Gujarat	3	999.55	333.1833	40795.88103		
Andhra Pradesh	3	1726.14	575.38	335007.8013		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	3236467.622	9	359607.5	4.042037	0.004457799	2.392814
Within Groups	1779337.902	20	88966.9			
Total	5015805.525	29				

Source: Computed through MS Word 2007.

#### Decision

It has been observed from the above table-2 that calculated value of F (= 4.042037) is higher than critical or tabulated value of F (=2.392814) at 5 % level of significance, with a P-value of

0.004457799(P<.05). Hence the Null Hypothesis is being rejected at 95% level of confidence and there lies significant differences among mean CSR spending undertaken in the top 10 states of India. The Null Hypothesis is also rejected at 1 % level of





significance ( $P < .01$ ). Maharashtra has the highest average allocation (1295.053), followed by Andhra Pradesh (575.38), Karnataka (438.7133), Tamil Nadu

(433.0067), Gujarat (333.1833), Rajasthan (276.27), West Bengal (233.2067), Uttar Pradesh (221.97), Madhya Pradesh (176.5233) and Bihar (60.41667).

**CSR SPENDING IN DIFFERENT ZONES OF THE COUNTRY AS REPORTED FROM FY:- 2014-15 to 2016-2017 (In Rs. Crores ), Table -3**

Sl. No.	Zones	2014-15	2015-16	2016-17
1	North	110.276	211.916	50.286
2	South	288.956	585.32	124.486
3	East	135.0425	307	93.4225
4	West	565.16	797.23	288.32
5	Central	126.1675	223.3975	94.8525
6	North East	19.19	22.94	7.50

Source: Computed by author based on data provided by GOVERNMENT OF INDIA MINISTRY OF CORPORATE AFFAIRS, RAJYA SABHA UNSTARRED QUESTION NO. 4031 ANSWERED ON TUESDAY, THE 3rd APRIL, 2018, FAKE DEVELOPMENT WORK UNDER CSR, QUESTION.

H<sub>02</sub>: There is no significant variation in average CSR spending among different zones.

**Analysis**

Whether average CSR spending among different zones in India vary statistically significantly or not is being tested through the following test.

**Table -4**

Anova: Single Factor						
SUMMARY						
Groups	Count	Sum	Average	Variance		
North	3	372.478	124.1593333	6675.624433		
South	3	998.762	332.9206667	54541.66283		
East	3	535.465	178.4883333	12819.49245		
West	3	1650.71	550.2366667	64914.37643		
Central	3	444.4175	148.1391667	4493.019858		
North East	3	49.63	16.54333333	64.85203333		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	537358.9944	5	107471.7989	4.49331169	0.015368861	3.105875
Within Groups	287018.0561	12	23918.17134			
Total	824377.0505	17				

Source: Computed through MS Word 2007.

**Decision**

It has been observed from the above table-2 that calculated value of F (= 4.49331169) is higher than critical or tabulated value of F (=3.105875) at 5 % level of significance, with a P-value of 0.015368861 ( $P < .05$ ). Hence the Null Hypothesis is being rejected at 95% level of confidence and there

lies significant differences among mean CSR spending undertaken in the 6 zones of India. The Null Hypothesis is accepted at 1 % level of significance ( $P > .01$ ). West zone has the highest average receipts (550.2366667), followed by South (332.9206667), East (178.4883333), Central (148.1391667), North (124.1593333) and North East (16.5433333).



**TOTAL ACTIVITY WISE DISTRIBUTION OF CSR EXPENDITURES AS REPORTED FROM FY:- 2014-15 to 2016-2017 (In Rs. Crores ), Table-5**

Sl. No.	Activities	2014-15	2015-16	2016-17
1	Health/ Eradicating Hunger/ Poverty and malnutrition/ Safe drinking water/ Sanitation	2,382.27	4330.21	1201.37
2	Education/Differently Abled/ Livelihood	3,021.47	4,689.81	1,605.05
3	Rural development	1,031.02	1,327.57	628.56
4	Environment, Animal Welfare, Conservation Of Resources	812.31	901.80	306.68
5	Swachh Bharat Kosh	94.52	323.24	89.35
6	Any Other Funds	272.58	322.63	137.70
7	Gender equality/Women empowerment/Old age homes/Reducing inequalities	172.63	331.50	122.60
8	Prime Minister's National Relief Fund	211.04	206.08	109.81
9	Encouraging Sports	53.36	134.76	51.73
10	Heritage Art and Culture	113.62	114.90	49.64
11	Slum Area Development	101.07	13.60	1.97
12	Clean Ganga Fund	4.64	32.52	22.97

Source: GOVERNMENT OF INDIA MINISTRY OF CORPORATE AFFAIRS, RAJYA SABHA UNSTARRED QUESTION NO. 4031 ANSWERED ON TUESDAY, THE 3rd APRIL, 2018, FAKE DEVELOPMENT WORK UNDER CSR, QUESTION.

H<sub>03</sub>: There is no significant variation in average CSR spending among different activities for which CSR expenditures are done.

**Analysis**

Whether average CSR spending for different activities vary statistically significantly or not is being tested through the following test.

**Table -6**

Anova: Single Factor				
SUMMARY				
Groups	Count	Sum	Average	Variance
Health/ Eradicating Hunger/ Poverty and malnutrition/ Safe drinking water/ Sanitation	3	7913.85	2637.95	2496439
Education/Differently Abled/ Livelihood	3	9316.33	3105.443	2384225
Rural development	3	2987.15	995.7167	123088.5
Environment, Animal Welfare, Conservation Of Resources	3	2020.79	673.5967	102973
Swachh Bharat Kosh	3	507.11	169.0367	17840.68
Any Other Funds	3	732.91	244.3033	9149.454
Gender equality/Women empowerment/Old age homes/Reducing inequalities	3	626.73	208.91	11896.98
Prime Minister's National Relief Fund	3	526.93	175.6433	3256.671
Encouraging Sports	3	239.85	79.95	2253.766
Heritage Art and Culture	3	278.16	92.72	1392.324
Slum Area Development	3	116.64	38.88	2934.511
Clean Ganga Fund	3	60.13	20.04333	200.7476



ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	36864532.49	11	3351321	7.800345	0.0000	2.216308646
Within Groups	10311300.92	24	429637.5			
Total	47175833.42	35				

Source: Computed through MS Word 2007.

### Decision

It has been observed from the above table-2 that calculated value of F (=7.800345) is higher than critical or tabulated value of F (= 2.216308646) at 5 % level of significance, with a P-value of 0.0000 (P<.05). Hence the Null Hypothesis is being rejected at 95% level of confidence and there lies significant differences among mean CSR spending undertaken for various activities in India. The Null Hypothesis is also rejected at 1 % level of significance (P<.01). Education/Differently Abled/ Livelihood has the highest average spending being undertaken for it (3105.443), followed by Health/ Eradicating Hunger/ Poverty and malnutrition/ Safe drinking water/ Sanitation (2637.95), Rural development (2987.15), Environment, Animal Welfare, Conservation Of Resources (673.5967), Any Other Funds (244.3033), Gender equality/Women empowerment/Old age homes/Reducing inequalities (208.91), Prime Minister's National Relief Fund (175.6433), Swachh Bharat Kosh (169.0367), Heritage Art and Culture (92.72) Encouraging Sports (79.95), Slum Area Development (38.88), and Clean Ganga Fund (20.04333) .

### CONCLUSION

Based on the above analysis following conclusions have been drawn by the researchers to explain the results logically.

1. It has been observed that the states like Maharashtra, Andhra Pradesh, Karnataka, Tamil Nadu and Gujarat received much higher amount under CSR spending than states like Uttar Pradesh, Madhya Pradesh and Bihar mainly; because it has been observed that the states which have higher concentration of the business and industries received experienced much more developmental works under CSR schemes of individual enterprises than states having lower concentration of trade and businesses. So it can be inferred that companies are basically undertaking CSR spending in the vicinity of the places of its operations. This behavioural approach can be attributed to the

2. The analysis shows that Western and Southern zone of the country has received more amount than Northern and North Eastern zone of the country under expenditure for CSR. The same reason as above can be attributed for this uneven distribution in the received of CSR expenditures by the various zones of the country. The Western and Southern zone of the country is comparatively economically developed due concentration of more gainful economic actives in form of business and trades located there. Whereas Northern and North Eastern zone of the country is comparatively economically weaker due to less concentration of gainful economic actives in forms of business and trades there.
3. The study reveals there lays significant variation in CSR spending being undertaken among different activities. Highest spending are done for educational development, health related matters, in fulfilling basic social needs, environmental development and for rural development. Whereas spending for art, culture and heritage protection and for development of sports and sports infrastructure is the most neglected area. India being a developing country with a large scale population lying under Below Poverty Level, the areas which are directly comes under the ambit of social and economic welfare for unprivileged sections get the most importance both on the part of governments and companies, hence those areas received maximum allocation under CSR expenditure. Among the other areas environment is most important in terms of CSR receipts as environmental degradation is directly related to poverty and health impairment. Areas which are not contributing highly in fulfilling basic economic and social needs are always neglected.



## RECOMMENDATIONS

Based on above detailed analysis and conclusions following recommendations are drawn to give a set of measures for countering the loopholes for uneven distribution of spending.

1. The government should mandate specific rules and regulations for ensuring logical distribution of CSR expenditures among different states. The government should not promote CSR spending by different companies in the place of its operation or in the place of its market. A centralized CSR fund pulling and allocation system should be developed for more even distribution of the expenditures based on state based needs and population.
2. There is also some need of alleviating the unevenness in purpose for which CSR expenditures are done. The government here also need to take legal initiatives in mandating the percentage of total spending to be spent for different purpose and for doing it feasibly centralized CSR fund pulling and allocation system should be developed. Especially allocation under the head of Gender equality/Women empowerment and Encouraging Sports need to be increased, as the country's performance is very poor in these two aspects.

## LIMITATIONS AND FUTURE RESEARCH SCOPES

The study has been conducted by the researchers based on secondary data and small amount data is being analyzed by the application of basic statistical tool. Future research can be conducted by collecting primary data and more sophisticated statistical tool can be utilized in gathering more in-depth knowledge about actual picture of CSR spending in the country. Company and sector specific secondary data can be collected to gain knowledge on company or sector specific performance in regard to CSR rules adhering and also in finding out the success of present laws.

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# GOVERNANCE INDICATORS AND FDI NET INFLOWS: WITH EMPIRICAL EVIDENCE FROM SRI LANKA

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## ABSTRACT

*Foreign Direct Investment (FDI) is considered as a key determinant of the economic growth of developing countries. Effectiveness and efficiency of governance and the regulatory bodies play a vital role when attracting FDI to developing economies. World Bank governance indicators measure the quality of the governance of world economies. This study attempts to identify the influence of government indicators on foreign direct investment (FDI) net inflows in Sri Lanka. Research is based on the time series secondary data for the time spanning from 1996 to 2017 covering 21 years. The data were extracted from the World Bank Development Indicators Database. The operational methodology adopted is a multiple regression model on variables such as FDI net inflows, Voice and Accountability, Political Stability and absence of Violence, Government Effectiveness, Regulatory Quality and Control of Corruptions. The findings of the study reveal the positive correlation between the FDI net inflows and variables such as voice and accountability, political stability, government effectiveness, control of corruption in Sri Lanka. Further, research discovers that the highest positively influential variable on FDI inflows in Sri Lanka is the Government Effectiveness. Moreover, research recommends policy makers and regulatory authorities to take effective measures to improve the condition of government indicators in Sri Lanka.*

**KEY WORDS:** *Foreign Direct Investment, Governance Indicators, Net Inflows*

## INTRODUCTION

The inflows of Foreign Direct Investment (FDI) are extremely crucial for economic growth of developing countries. FDI provides investment capital for developing countries along with employment opportunities, management skills and updated technology which eventually leads the developing countries towards economic growth (Nurudeen, 2010). Therefore, developing countries are attempting for obtaining greater FDI inflows with the intention of strengthening their business and industries. Alternatively, policies and procedures are revised continually for making it convenient for the investors to make investment in these countries (Anwar & Afza, Impact of Governance Indicators on FDI Inflows: Empirical Evidence from Pakistan, 2014). However, several countries are successful in attracting greater FDI inflows while some have been facing problems in attracting FDI.

Sri Lanka needs FDI inflows for its economic growth because of the gap in its savings and investments. Moreover, Sri Lanka faces serious difficulties when continuing its economic activities as a result of the strong less internal economic capacity. Enhancing FDI inflows is a sustainable solution for

this since foreign direct investment is critical for the developmental projects, industrial growth, raise employment level, technological advancement, enhancing industrial production, reducing balance of payments deficit, increasing foreign reserves, better infrastructure, skilled human resources and eventually realizing economic growth (Anwar & Afza, 2013)

The economic growth of a country is also influenced by the government selection process, monitoring and replacement of the governments; governmental ability to implement and formulate policies and procedures; respect of their people and position of institutions which administer social and economic interaction (Anwar & Afza, 2014). There are six dimensions of governance mechanisms which may be useful to evaluate the governance level for the countries, identified as governance indicators (Kaufman, Kraay, & Mastruzzi, 2009). These indicators are Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption.

Governance consists of the traditions and institutions by which authority in a country is



exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the governments to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them. Voice and Accountability captures perceptions of the extent to which a country's citizens can participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Political Stability and Absence of Violence captures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism. Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Regulatory Quality concerns perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Rule of Law concerns perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Control of Corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

There are several researches that investigate the factors influencing inflows of foreign direct investment. Rusike (2008) analysed the determinants and trend of inward FDI to South Africa for the period of 1975-2005. He pointed that exchange rates, openness and financial progress were key variables to determine the FDI inflows in long-run (Rusike, 2008). Masku and Dlamini (2009) probed locational determining variables of FDI in Switzerland by utilizing cointegration along with ECM techniques over period of 1980-2001. The variables tested were market size, openness of economy, infrastructure, domestic market attractiveness, external economic stability and internal economic stability. Research reveals that external economic stability, internal economic stability, infrastructure and economy's openness had positive correlation whereas home market size and domestic market attractiveness had negative correlation with FDI stock (Masku & Dlamini, 2009). Azam and Kahttak (2009) evaluated the influence of political instability and human capital on FDI stock in Pakistan for the period 1971-2005 by utilizing least square method. The estimated results reveal a positive and significant link between

human capital and FDI stock, while the correlation between political instability and FDI was positive but significantly insignificant (Azam & Kahttak, 2011). Anwar and Afza (2014) attempted to determine the relationship of governance indicators including voice and accountability, political stability, government effectiveness, regulatory quality, control of corruption and governance index with inflows of foreign direct investment in Pakistan for the period of 1996 to 2010 through applying ARMA and Ordinary Least Squares regression techniques. The results of the study have shown that governance indicators have positive relationship with FDI inflows in Pakistan (Anwar & Afza, Impact of Governance Indicators on FDI Inflows: Empirical Evidence from Pakistan, 2014).

## RESEARCH PROBLEM

Several researches have studied about the relationship between FDI inflows and political stability in many countries. But it is difficult to find out the literature that reveals the relationship between FDI inflows and governance indicators in Sri Lanka. According to newly released economic data, Sri Lanka has attracted foreign direct investments (FDI) amounting to US \$ 1,685 million in 2014 – a 21 percent increase from 2013, but below the US \$ 2 billion target set by the government. Sri Lanka consistently failed to reach FDI targets in recent years although the overall FDI trend remains positive (Hettiarachchi, 2019). Further, there is a huge debate about the political stability and the governance of the country. Thus, it is highly needed to observe whether there is a considerable relationship between FDI inflows and governance indicators of the country.

## OBJECTIVES OF THE RESEARCH

The key objective of the research is to determine the relationship between FDI inflows and Governance Indicators of Sri Lanka. Further, Research aims to identify the solutions to improve FDI inflows in Sri Lanka.

## METHODOLOGY

This study is based on the time series secondary data for the time spanning from 1996 to 2017 covering 21 years. Data have been collected from the World Bank Development Indicators Database. According to Koutsoyiannis (1977), the first and most significant footstep the econometrician has to take in attempting the study of any relationship between variables is to explain this relationship in mathematical form that is to specify the model with which the economic phenomenon will be explored empirically (Koutsoyiannis, 1977). OLS regression model has been applied in order to determine the impact of governance indicators including voice and accountability, political stability and absence of



violence, government effectiveness, regulatory quality and control of corruptions on inflows of FDI in Sri Lanka. As a justification for this method, Maddala (1977) identified that ordinary least square is more robust against specification errors than many of simultaneous equation methods and also that prediction from equation estimated by ordinary least squares often compare favourably with those

$$\ln FDI = \beta_0 + \beta_1 VA + \beta_2 PV + \beta_3 GE + \beta_4 RQ + \beta_5 CC + \beta_6 RL + \epsilon_t$$

Where:

LnFDI	=	Inflows of foreign direct investment in US\$
VA	=	Voice and Accountability
PV	=	Political Stability and Absence of Violence
GE	=	Government Effectiveness
RQ	=	Regulatory Quality
CC	=	Control of Corruption
RL	=	Rule of Law

## RESULTS AND DISCUSSION

Research employed several diagnostic tests to check for the presence of multicollinearity, autocorrelation and the normal distribution of the residuals. Residuals of the dependent variable shows a normal distribution. Tolerance and VIF values have been used to check the multicollinearity of the model. If the tolerance is lower than to 0.1 and VIF is greater than to 10, the model would be consisted with multicollinearity. Collinearity statistics proved that the model is settled out from multicollinearity (Table 1). Further, the Durbin-Watson value indicates the autocorrelation in the data set. Durbin-Watson statistic always has a value between zero and 4.0. A value of 2.0 means there is no autocorrelation detected in the sample. Values from zero to 2.0 indicate positive autocorrelation and values from 2.0 to 4.0 indicate negative autocorrelation. Model Summary reveals that Durbin-Watson value of the model is 1.587 (Table1). Hence, there is weak positive autocorrelation. Yet it is too close to value 2.0, thus any adjustment to the data set has not been done.

The estimated model is as follows:

$$\ln FDI = 21.160 + 1.22VA + 0.369PV + 1.795GE - 1.533RQ + 0.657CC - 3.077RL$$

The estimated model discovers that the variables such as Voice and Accountability, Political Stability and absence of Violence, Government Effectiveness and Control of Corruption positively correlate with the FDI inflows in Sri Lanka. Yet, the Regulatory Quality and Rule of Law show a negative correlation with the FDI inflows in Sri Lanka. When all the other

obtained from equations estimated by the simultaneous equation method (Maddala, 1977). Among the other reasons is the simplicity of its conceptual procedure in conjunction with optimal properties of the estimates obtained. The following regression model has been estimated:

factors are constant, the increase of government effectiveness by one unit will influence to increase the FDI inflows by 1.795 units of US \$ millions. Further, the Adjusted R-square value of 0.677 indicates that the explanatory variables used in multiple regression model have described approximately 67 percent of the variation taking place in FDI inflows in Sri Lanka.

## CONCLUSION

The purpose of this study is to determine the relationship of governance indicators including voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, control of corruption and rule of law with inflows of FDI in Sri Lanka for the period of 1996 to 2017. The results of the study show that variables such as Voice and Accountability, Political Stability and absence of Violence, Government Effectiveness and Control of Corruption positively correlate with the FDI inflows in Sri Lanka. Moreover, the highest positively influential variable among that is government effectiveness. Thus, these factors should be considered in policy formulation for attracting greater inflows of FDI. Based on the findings of this study, the policy makers and regulatory authorities should take some effective measures to improve the condition of governance indicators in order to strengthen the confidence of domestic and foreign investors and to increase inflows of foreign direct investment in Sri Lanka since without improving governance indicators, it may not be possible to provide a better business environment and to attract overseas investors.



**Table 1: OLS Regression Estimates**

Dependent Variable: LnFDI Method: Ordinary Least Squares Included Observations: 19 after adjustments						
Variables	Coefficient	St. Error	t.Statistic	Prob.	Tolerance	VIF
VA	1.220	1.434	0.851	0.412	.116	8.589
PV	0.369	0.259	1.425	0.180	.365	2.743
GE	1.795	1.142	1.572	0.142	.490	2.042
RQ	-1.533	0.641	-2.391	0.034	.594	1.683
CC	0.657	1.424	0.461	0.653	.384	2.605
RL	-3.077	1.736	-1.772	0.102	.123	8.161
Constant	21.60	0.807	26.206	.000		
R-Square	0.784	Adjusted R-square	0.677			
Durbin-Watson	1.587					
F-Statistic	7.280					
Prob(F-Statistic)	0.002					

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# THE PROJECT METHOD AND ITS IMPORTANCE IN TEACHING INFORMATION TECHNOLOGY IN EDUCATION

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## ABSTRACT

*The article reveals the importance of studying foreign experience in the field of education, as well as teaching interactive methods in developed countries.*

**KEYWORDS:** *International experience, computer science and information technology, Project interactive method.*

## DISCUSSION

Now we are talking about modern pedagogical and information technologies that are used in the international experience of teaching information technology in education. Extending the use of international experience in teaching information technology in education, we can make the learning process more interesting, integrate the results of

international scientific research into our national methodology and use advanced teaching methods abroad. During the observation, I studied several systems for teaching advanced skills and learned about various teaching methods. For example, studies in the German education system have shown that they use the following 20 types of instruction in their studies[2].

**Table 1**  
**20 different types of teaching methods used in the computer science lesson**

Deutsch	English
Problemorientierter Unterricht	Problem-oriented teaching
Lernen entdecken	Discovering learning
Computersimulation	Computer simulation
Projekt methode	Project method
Modellmethode	Model method
Lernen durch Lehren	Learning by teaching
Fallstudie	Case study
Planungsspiel	Planning game
Verwaltungsprogramm	Management program
SWOT	SWOT
Direkte Anweisung	Direct instruction
Lernaufgaben	Learning tasks
Vorstellung	Presentation
Gruppenrätsel	Group puzzle
Versuchsmethode	Experiment method
Führende Textmethode	Leading text method
Konzept-Mapping	Concept Mapping
WebQuest	WebQuest
Gegenseitige Lehren	Reciprocal teachings
Portions methode	Portion method

The above methods will not only improve the quality of the course, but will also help students gain



a deeper interest in science. That is why German professors use these methods in computer science lessons.

It is believed that the use of the above methods in teaching theoretical and practical knowledge of foreign countries when teaching a computer science course is the most effective, and we have chosen the following methods for teaching the subject "Information Technologies in Education".

We have chosen a project method from the above methods. Because this method helps students to independently think and develop their creative abilities.

The project method is a means of achieving educational goals in one way or another through the detailed development of technology that gives a real, tangible result. This is a set of primes that solve this problem in a specific sequence. The main goal of the project methodology is to provide students with the opportunity to learn and solve problems or problems on their own in order to adapt their knowledge in various disciplines. If the project method is considered pedagogical technology, this technology is a combination of research, problematic and creative methods. Within the project, the teacher will be assigned the role of a developer, coordinator, expert and consultant. Thus, the projection method includes the development of cognitive skills and abilities of students, the independent design of their knowledge, the orientation of information and the development of critical and creative thinking. The project method developed in the first half of the twentieth century on the basis of the pragmatic pedagogy of John Virgo is especially relevant in the modern information society. The project methodology is not something new in world pedagogy: it began to be used in pedagogical practice

long before the famous article by the American teacher W. Killatrick, "Project Methods (1918)." In this article, he interpreted this concept as a "heartbreaking idea." This method was known in Russia in 1905. At that time, a group of Russian teachers headed by S.T. Shatsky was working on introducing this method into a regular school.

In the project process, the following skills are formed:

1. Reflexive knowledge;
2. Research skills;
3. Skills and cooperation;
4. Management skills and qualifications;
5. Communication skills;
6. Presentation skills.

Project creation methods can be started as follows:

1. Analysis of data from additional literature (encyclopedia, Internet)
2. Synthesis

As an example, we will present the topic "Webpage, Website, Web Design" using the "Project" method.

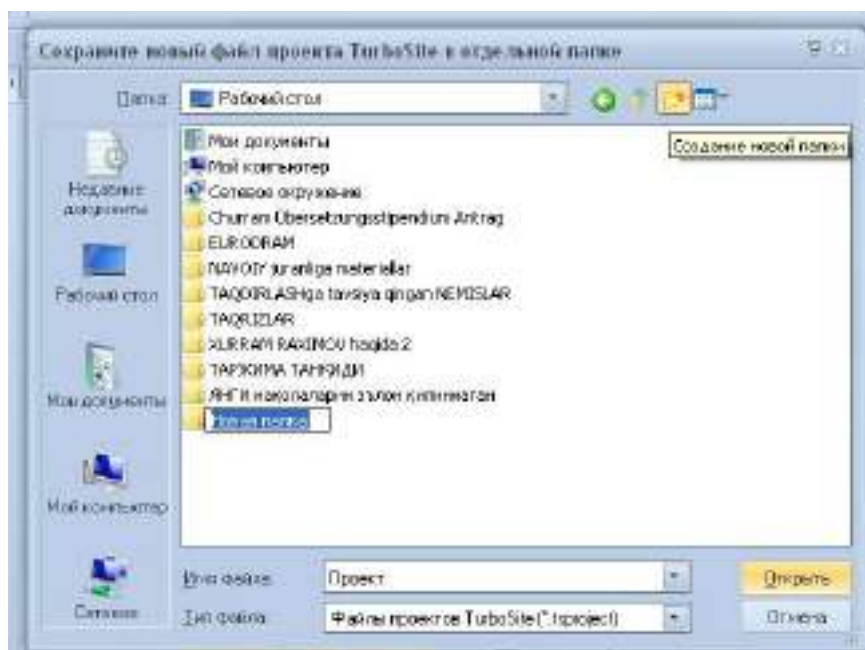
First of all, the teacher explains to students the basic concepts of the topic. He then presents datasets that work within a topic. During practice, students begin to create a new project using the "project" method. Students can use a variety of patterns. An example of this is the Turbosite website and the software used to create various projects. The project method is presented to students by the teacher.

Instructions on the organization of individual work of students, the distribution of educational tasks.

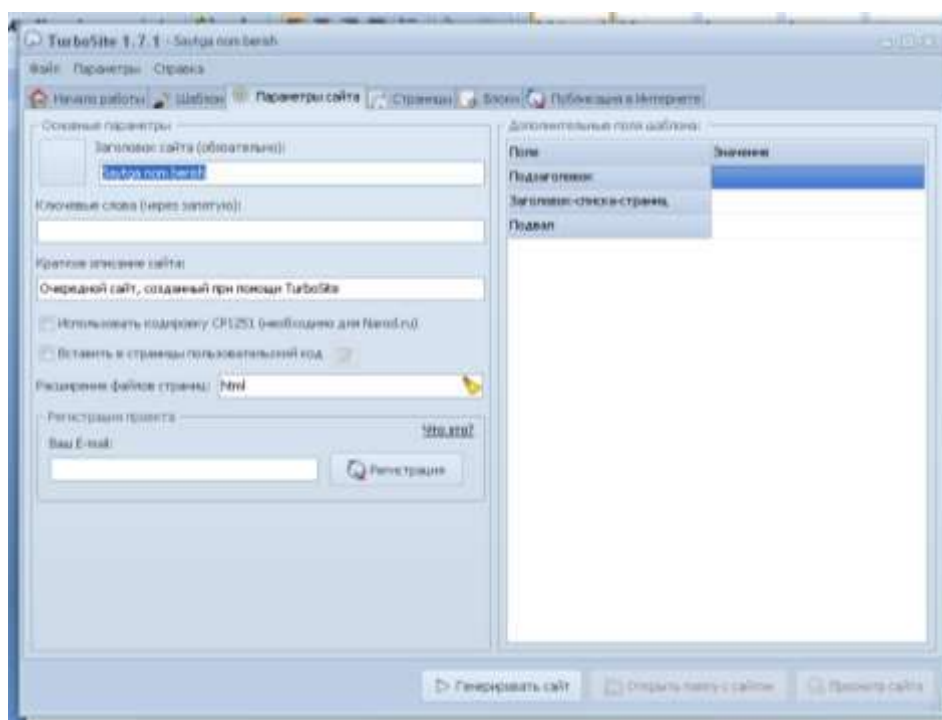
1. Go into Turbosite and create a new project (think about what small project you want to create).



Picture 1. Sequence of project creation in turbosite program.



Picture 2. Create a new folder when creating a project.



Picture 3. Turbosite program working window.

2. In the "Template" section, select a template suitable for your project.

3. Save the sequence of your actions using the "Generate Site" command, otherwise your actions will not be performed.

4. Go to the "Options" section and give a name to your site. This is the name of your project.

5. After saving, go to the Pages section and name the main section of your project.

6. Use the "Add" command to give your site a name, save your work after each action.

7. Save using the generate site command and click on view site. This will give you a preview of your first small project.

It is known that it is not possible to cover the results of all regional and international research on one topic in one article. For this reason, in our article, we have tried to study only one of the interactive



methods used internationally, the Project method. In our next articles, we plan to discuss other interactive methods used in education, as well as to provide more information about such interactive methods of assessment.

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## GENDER ASPECTS IN THE ANTHROPOCENTRIC STUDY OF ZOONYM COMPONENT METAPHORAS

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### ABSTRACT

*In this article, gender aspects in the anthropocentric study of the zoonym component metaphors were studied and their meaning was revealed.*

**KEY WORDS:** *gender, imagery, exaggeration, ethno psychological character, social character, professional character.*

### INTRODUCTION

It is well known that the use of zoonyms, that words denoting animal names in the description of a person, which are important in the lexical and syntactic layer of any language, has long been a well-known linguistic process [7]. Because throughout history, humans have lived side by side with animals. Zoonosis, which embody qualities such as imagery, emotionality, expressiveness, motivation and evaluation, play a psychological and historical role in describing the personality. The names of animals, which represent the inner and outer world of a person, social status and physical condition, are common both in live speech and in artistic style texts.

### DISCUSSION

Instead of describing a person's character using adjectives, describing him or her through a specific zoonym creates an active emotional state in the recipient, in which case the transmitted information is stored in the recipient's memory for a long time [3]. For example, a sheep is considered an animal with the same objectivity for all peoples in the form of designation. However, the general meaning of the word "sheep" in English and Uzbek also has certain differences.

While the English formed the semantics of "stubborn" and "stupid" in the sense of sheep, the Uzbeks tried to incorporate the semantics of "careless" and "stupid" into the semantics of the word. Formed [1].

It is known that in the last 10 years of the 20th century in linguistics, the study of linguistic phenomena based on the anthropocentric paradigm

has become widespread. At the same time, the assessment of a person by his contemporaries and the study of the diversity of his characters from a linguistic point of view were considered one of the main tasks of modern linguistics. The division of a person into two sexes is social and cultural in nature. indicates the presence of psychological and even linguistic features, that is, similarities and differences.

The scientific study of such features began to be studied using linguistic genealogy, including gender studies, including the study of linguistic features. At the same time, scientific research on gender linguistics, which is a new direction in modern linguistics, plays a special role in identifying the most pressing problems.

Linguistic genealogy, which is one of the inseparable branches of linguistics, has attracted the attention of a number of linguists as a science that studies sociocultural gender. Gender studies in modern linguistics are carried out at all levels of the language. Language vocabulary (A.F. Artemova, A.A. Grigoryan, I.V. Zikova, R. Lakoff, G.G. Slippkin, D. Tannen, V.N. Telia, D.U. Ashurova, M.I. Rasulova), grammatical (V.A. Vinogradov, D. Mackey, S. Miller, V.P. Pishaikina), at the phonetic-phonological level (S.V. Bondar, V.V. Potapova, T.I. Shevchenko), in lexicography (O. A. Vaskova, Yu. V. Vishnyakova, M. S. Kolesnikova, M. V. Sergeeva) and in the verbal and non-verbal aspects of communication (F. I. Kartashkova, G. E. Kreidlin, I. A. Sternin, Dj. Holms) should be noted here [4,5,6].

The units of the English language have been studied to a certain extent from a gender point of



view, but the gender characteristics of the units of the Uzbek language are currently one of the least studied problems. In particular, to date, the gender characteristics of zoonyms describing a person in the Uzbek language have not been specially studied in the synchronous or diachronic aspects.

It is well known that in order to determine the transferred meaning and gender aspects in the semantic structure of zoonyms, it is necessary to distinguish between archetypes and integral semaphores given in the lexical commentary. If an archiseme is present in the lexical description of all linguistic units belonging to the same field, then the integral seme is considered a semantically close seme. It is necessary to carry out a component analysis of several animal names in order to identify semaphores in the lexical interpretation of Uzbek zoonyms and classify a particular zoonym from a gender point of view, that is, only in the description of women or only men and in the description of both sexes. Here we analyze the component based on the lexical explanations of Uzbek zoonyms, such as chicken, donkey, rooster, leech, lamb in the five-volume "Explanatory Dictionary of the Uzbek Language".

The chicken - portable. Baby [1].

The donkey - portable. Fool, a person who is not interested in anything; stupid, ignorant person [1]. On the basis of this zoonym in the Uzbek language, the phrase "like a mullah riding a donkey" was created, which means "very obedient, gentle" [1].

The rooster - portable. fearless, brave [1].

Leech - portable. A greedy, selfish, ruthless person who lives at the expense of others. Sucks the blood of men; free [1].

The lambkin - a form of caressing children [1]<sup>9</sup>. From the above analysis, it was found that the semaphores of women, men and men in Uzbek are defined in zoos, mainly through implicit expression. In the Uzbek language, references such as the human archetype, man, woman, man, boy, girl and child, child are represented as integral semas.

Zoonyms describing a person studied by the methods of component analysis and text analysis can be divided into three groups in terms of gender expression:

1) zoonyms that are neutral in human description;

2) zoonyms describing only the female sex;

3) zoonyms that describe only the male gender. In the course of the analysis, it was found that neutral zoonyms, which are equally applicable to both men and women when describing human characteristics, account for more than zoonyms belonging to the other two groups in terms of quantity. Statistical analysis showed that zoonyms that are neutral in the description of a person, that is, both men and women, make up 73% of the total,

zoonyms describing only women make up 17%, and zoonyms used only for men make up 10 %.

Based on our observations of the amount of factual material collected from dictionaries and fiction in the Uzbek language, and the method of component analysis used for each group, we found that only the number of zoonyms with a predominance of men was lower than that of zoonyms with a predominance of women, as follows: not. The female semaphore is a prominent member of the male-female opposition and needs constant explicit expression.

Consequently, most zoonyms describing males can belong to the group of neutral zoonyms, while zoonyms in the group of neutral zoonyms can belong to the group of zoonyms describing men. But zoonyms that describe women cannot be included in the list of neutral zoonyms in this sense. Only four of the zoonyms studied in Uzbek lexically represent the sex of the female animal: cow, heifer, mackerel. Every second of these zoonyms has conventional or random transferable meanings, and such random meanings are realized only in the corresponding texts.

Below we will restrict ourselves to some examples of zoonyms that represent the female animal in the Uzbek language and are most actively used in the description of the female. "It just got our attention back then. This chick was not threatened. Hey your mother ... Tell me the truth, this is what you need ... To'xtamish jumped to his feet [Tahir Malik. Charxpalak]." Ordon! Who put a satin dress for the wife like a cow! How can I be deliver you an satin dress? [O'.Hoshimov. Ikki eshik orasi]. As a result of the analysis of the collected factual sources, it turned out that the zoonyms describing a woman in the Uzbek language have a mostly negative connotative meaning and are offensive and discriminatory. It turned out that the Uzbek language mackerel zoonym can be applied to nomadic men in a figurative sense: listen to the word, hellcat mackerel! - Jormat looked like a spear [Oybek. "Qutlug' qon"].

Although the lexeme mackerel represents a female animal. its application to men in a figurative sense indicates the emergence of the phenomenon of gender asymmetry in this zone. In Uzbek, the following seven zoonyms represent the names of male animals: stallion, bull, goat, rooster, wild boar, ram, ox: we are going to Tantiboy-junior's home tomorrow. ... A very cocky person. When you see this, you will be amazed [Oybek. Qutlug' qon]. - "Ganiboy has done a great job and only a rooster boy can do it," said Burgut [Said Ahmad. Cho'l burguti].

What a man is he who cannot give a dress to his wife, who sooner or later will give birth to a son like a ram! Do you have a seat belt? [O'.Hoshimov. Dunyoning ishlari]. Lullaby, let my baby sleep, Lullaby, rest in my arms, Lullaby. O sheep in the



mountains, O Lullaby, O ram in the cradle, O Lullaby. [O'.Hoshimov. "Dunyoning ishlari"]. Based on the results of the analysis, it can be concluded that in the Uzbek language, zoonyms have positive evaluation semaphores, such as the brave (rooster), young, proud young man ( young rooster), male hero (ram). Uzbek zoonyms denoting a male animal are used with a relatively more positive connotation (with the exception of the bull zoononym). Since the role of the ram in Muslim countries is assessed positively, the transferable meaning of this lexeme is often devoid of negativity.

## CONCLUSION

In short, zoonyms provide a figurative description of a particular person as a means of representation, and imagery is an important factor that enhances the speaker's speech or the aesthetic value of a work of art. The main semantic function of zoonyms is to provide an attractive, deep expression of the idea expressed in participating in the interpretation of the speaker's artistic intention, to exaggerate and highlight the characteristics of the imitated person. Gender aspects in the secondary meanings of zoonyms are of a social, ethno psychological and professional nature, as evidenced by their inextricable connection with the national mentality, character and cultural characteristics. The study of such problems is one of the topical issues of Uzbek and English gender linguistics.

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# SOCIO-PEDAGOGICAL FACTORS OF FORMATION OF PROFESSIONAL COMPETENCES ON THE BASIS OF PRIMARY EDUCATION SES REQUIREMENTS

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## ANNOTATION

*This article discusses the analysis of the SES and the program of primary education in the formation of professional competence of the future primary teacher, as well as modern approaches, developing educational opportunities. It is also based on the need to develop methodological methods of professional formation of future teachers as well as effective practices based on increasing the level of knowledge of students.*

**KEYWORDS:** *future primary school teacher, professional competence, motivation, personality-oriented education, developmental education, axiological (value) approach, cognitive approach, active-creative and personal approach.*

## DISCUSSION

The teacher of the primary class should achieve the formation of the state education standard of children's logical thinking capacity, professional competence and intellectual development, worldview of the state, the potential for the formation of communicative literacy and self-awareness, the ability to feel the beauty of material existence, the expansion of the competence activity, the free thinking of students.

Decree of the Cabinet of Ministers of the Republic of Uzbekistan dated April 6, 2017, №187 "On approval of state educational standards of general secondary and special secondary, vocational education improved" plays an important role in improving the educational sphere in accordance with modern requirements, improving the quality and effectiveness of education [1].

It sets out the mandatory minimum requirements for the level of preparedness of students graduating from the primary school, the assignment given to students graduating from the 4th grade, listening and understanding of simple texts; reading to understand the text; observance of the pronunciation of words and sentences in oral speech; writing an dictator consisting of 65-70 words; creation of the text; create a text consisting of 5-6 sentences on the basis of a message, an image, a step-by-step description of the statement and the essay, as well as adding 2-3 sentences with discussion elements, follow the rules of using paragraph, husnixat, spelling and punctuation marks.

Before we determined the development of professional competence in the lessons of the native language of the future primary teachers, we considered that it is necessary to analyze the goals and objectives of teaching in the lessons of the native language, the content of curricula, which is a state document.

The knowledge, skills and qualifications that the students possess in the primary class on the education of the mother tongue, the requirements for which are laid down in the curriculum, which is a state document. The process of professional competence development and its functions are also clearly demonstrated in the native language program. According to the program, the release of children's literacy from the first class begins with the teaching of elementary reading and writing. They master such literary language norms as reading and literate writing during the primary class.

The process of teaching literacy in the program of teaching literacy is shown as two periods: the period of preparation for the alphabet and the period of the alphabet. Teaching literacy based on the textbook "Alphabet" should teach students elementary education, writing classes and writing for four months. Therefore, the main purpose of the lessons of teaching literacy is to familiarize students with all sounds and letters in the Uzbek language, to formulate their reading and writing skills.

To enjoy the rich opportunities of the Uzbek language for primary school students is one of the important tasks facing primary education. The native





language program covers several sections of linguistics. These sections are interrelated in the interrelation, and although the study of them in the primary classes provides self-assimilation as a whole system, it also exposes its own complexities. In particular, the materials of the sections “Phonetics”, “Graphics”, “Orthoepy”, “Orthography” of linguistics are combined in the primary education into one section “sounds and letters”, all word categories into one section “Word”, the whole syntax into the section “Sentence”. In addition, in the process of theoretical study of all sections of the language, it is implied to master the lexical and spelling [2].

In the process of teaching the native language in primary classes, we have witnessed that students face a number of challenges in practical mastering. The re-creation of the artistic text of the reader, the literate expression of his speech in writing is not at the required level. However, the law “On education” stipulates that “the implementation of state educational standards is mandatory for all educational institutions of the Republic of Uzbekistan”.

In the process of working on literate and professional competence, the main direction of the educational and methodological activity of primary school teachers is the formation of professional compensations. This is done by practical teaching of the native language, regular and consistent teaching, teaching on the basis of samples and special exercises, preventing and correcting speech errors, teaching the literary - artistic form of speech. Taking into account the young and psychological characteristics of students, the mother tongue contributes to the thorough mastering of the subjects in the curriculum, independent thinking, free expression of thought, listening to the opinions of others, reasoning, distinguishing the most important of them, teaching him to put forward his own opinion, summarize it, which is of interest to the use of language material in, the development of advanced teaching methods and exercise system, which is recognized as a factor in improving the effectiveness of mother tongue education, is a period requirement. Due to this requirement, the following tasks are assigned to native language education:

1) approach of the educational process as subjects of educational activity to the organizing schoolboy and teacher person;

2) to provide a creative approach of the teacher and the student to the educational process;

3) to develop the skills and competency of teachers to use traditional and non-traditional forms, methods and means of improving mother tongue teaching;

4) integrate working on language units at each stage of the native language classes project;

5) to be able to improve the methods of performing lexical-grammatical exercises assignments for students practical assimilation;

6) to constantly study the activities of students, the level of their mastering, to analyze the results, to determine the measures to eliminate the problems that have arisen.

Work on the provision of literate and correct education, the formation of compensations of primary school students depends on professional competences, which are formed in accordance with their age characteristics, due to the continuity, continuity of education, the priority of the personality and interests of the pupil:

Communicative competence - ability to interact in the native language and in any foreign language in social situations, to follow the culture of communication, social adaptability, to work effectively in a team in cooperation;

Information competence - ability to seek out the necessary information from media sources, to have a media culture;

Self - development competence - ability to constantly develop self - development, to study independently, to evaluate;

Socially active civil competence - knowledge of his civil duties and rights, observance of him, treatment in labor and civil relations and possession of legal culture;

National and universal competence - loyalty to the motherland, kindness to people, being subordinate to universal and national values, understanding of works of art, dressing in the midst, observance of cultural rules and healthy lifestyle;

Being aware of the innovations in mathematical literacy, science and technology, as well as the competence of its use – implies compliance with the agenda, the formation of the dignity of the use of scientific and technical innovations that lead to favorable conditions. [3]

Also, due to the content of each of the subjects in general education, general compartments on the subject are formed in the students.

Today, the main goal of developing professional compendium in the lessons of the native language of future primary school teachers is the formation of young people as mature in all respects, harmonious people necessary for the development of our society. A harmonious person embodies spiritual and physical maturity in himself.

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# DETERMINATION OF THE EFFICIENCY OF SOLAR PHOTOELECTRIC PLANTS WITH A COMBINED PRODUCTION OF THERMAL AND ELECTRIC ENERGY

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## ABSTRACT

*The possibility of increasing the total conversion factor of solar installations by generating heat and electrical energy from one receiving surface is being considered. To achieve this goal, an installation is proposed, which is a photovoltaic panel and a heat collector. The results of comparative experimental studies of the proposed installations are presented.*

**KEYWORDS:** *surface temperature; photovoltaic installation; Solar cells; combined conversion of solar energy; conversion factor.*

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## ОПРЕДЕЛЕНИЕ ЭФФЕКТИВНОСТИ СОЛНЕЧНЫХ ФОТОЭЛЕКТРИЧЕСКИХ УСТАНОВОК ПРИ КОМБИНИРОВАННОЙ ВЫРАБОТКЕ ТЕПЛОВОЙ И ЭЛЕКТРИЧЕСКОЙ ЭНЕРГИИ

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**Аннотация:** Рассматривается возможность увеличения суммарного коэффициента преобразования солнечных установок за счет выработки тепловой и электрической энергии с одной приемной поверхности. Для реализации данной цели предложена установка, представляющий собой фотоэлектрическую панель и тепловой коллектор. Приводятся результаты сравнительных экспериментальных исследований предложенных установок.

**Ключевые слова:** температура поверхности; фотоэлектрическая установка; солнечные элементы; комбинированное преобразование солнечной энергии; коэффициент преобразования.



## Введение

В настоящее время по мере уменьшения традиционных источников энергии большое внимание уделяется на использование возобновляемых источников энергии растет по всему миру, в том числе в Узбекистане предложены большие усилия на развитие использования возобновляемых источников энергии [1]. Солнечные фотоэлектрические преобразователи являются самым распространенным видом возобновляемых источников энергии. При использовании фотоэлектрических установок их главным недостатком является невысокая эффективность преобразования потока солнечной радиации в электрическую энергию (КПД промышленных фотоэлементов составляет 15–20%). В то же время солнечные коллекторы, используемые для нагрева теплоносителя, имеют тепловой КПД в несколько раз выше. Следовательно, для повышения КПД системы целесообразно использовать комбинированную солнечную установку, совмещающую в себе тепловой коллектор и фотоэлектрический модуль.

С развитием науки и техники появляется все больше солнечных установок, при работе которых с одной и той же рабочей поверхности одновременно может вырабатываться тепловая и электрическая энергия. С уверенностью их можно отнести к новому классу гелиотехники – термофотоэлектрические солнечные установки, которые одновременно преобразуют всю падающую на них солнечную радиацию в тепло и электроэнергию, т.е. одновременно нагревают теплоноситель и являются электрическим генератором постоянного тока [2].

Использование комбинированных термофотоэлектрических установок дает заметную экономию материалов для их изготовления на единицу мощности, увеличивает их суммарный коэффициент преобразования и эффективность использования. Это объясняется тем, что абсорберы тепловых гелиосистем и фотоэлектрические преобразователи солнечных батарей преобразуют различные длины волн солнечного спектра, поэтому с одной рабочей поверхности можно получать как тепловую, так и электрическую энергию, не уменьшая эффективность работы тепловой и электрической части. Производство термофотоэлектрических панелей на основе серийных установок позволит сократить затраты на выпуск абсорберов с дорогими селективными покрытиями и на материалы для производства конструкций фотоэлектрических модулей, объединив их в одну установку [3].

Существует комбинированные солнечные фототермопреобразователи. В котором избыточное тепло, с тыльной поверхности служит источником энергии термоэлементов находящихся там же [4].

## Постановка задачи исследования

Современные промышленные солнечные элементы из монокристаллического и поликристаллического кремния имеют плоскую конструкцию, их КПД составляет 17–20%, при коэффициенте поглощения до 95%. При преобразовании солнечной энергии 80% энергии идет в основном на тепловой нагрев элементов, что только ухудшает их качественную работу. Расположив солнечные элементы поверх теплового абсорбера гелиоколлектора, при эффективном теплообмене создается возможность для увеличения КПД всей установки. Отвод теплоты теплоносителем, циркулирующим по контуру гелиосистемы, препятствует перегреву фотопреобразователей и, соответственно, повышает суммарную выработку электрической энергии. Высокий коэффициент поглощения солнечных элементов дает возможность до 80% поглощенной ими солнечной энергии пойти на нагрев приемной поверхности теплового абсорбера. Коэффициент преобразования до 80% является высоким показателем для многих абсорберов промышленных тепловых солнечных установок.

## Цель и задачи исследования

Цель исследования – проведение эксперимента для подтверждения теоретических данных об увеличении суммарного коэффициента преобразования потока падающей солнечной радиации термофотоэлектрической установкой и увеличения мощностных характеристик с единицы площади её приемной поверхности при использовании комбинированной выработки тепловой и электрической энергии. Подобный эксперимент был проведен в работе [5].

Эксперименты по измерению энергетических характеристик солнечной установки проводились в натуральных условиях на территории открытой лабораторной площадки факультета “Автоматика и энергетика” Наманганского инженерно-технологического института Республики Узбекистан с мая по июль 2020 года.

В работе использовались метод прямых измерений по току короткого замыкания и напряжению холостого хода фотопреобразователя при безнагрузочном режиме и методы температурных измерений теплоносителя. Исследования проводились в

натурных условиях на открытой площадке в ясные дни, при естественном солнечном освещении и максимальной освещенности (около  $1000 \text{ Вт/м}^2$ ). Условием проведения эксперимента являлось постоянство интенсивности солнечной радиации.

При проведении работ использовалась солнечная установка (рис. 1), длиной 1 м и шириной 0.6 м, предназначенного непосредственно для монтажа кровельного покрытия жилых домов. Сама комбинированная установка состоит из отдельных

фотоэлектрических элементов (ячеек), установленные между полипропиленовую плоскость и защитного стекла, с боков имеются технологические ребра, тыльная часть соединен с теплообменником, теплообменник представляет собой металлическую лист присоединенный к ребрам солнечной установки и два штуцера для циркуляции рабочей жидкости которые присоединены к резервуару. Внутри комбинированной установки находится жидкий теплоноситель.



Рис. 1. Термофотоэлектрическая солнечная установка

На приемной поверхности установки находятся солнечные элементы, способные вырабатывать электрическую энергию. Элементы покрывают от 8/10 до 9/10 части установки. За счет более низкой температуры внизу теплообменника при циркуляции теплоносителя происходит охлаждение элементов, что улучшает качество их работы. Так как кремниевые солнечные элементы преобразуют отличную от тепловой части спектра, происходит общее увеличение энерговыработки. Заводской КПД используемой солнечной установки (при освещенности  $E_0=1000 \text{ Вт/м}^2$ ) составляет 16 %, тепловой КПД предлагаемой комбинированной установки в стационарном режиме – 58 %. Соответственно удельная мощность солнечной батареи может составлять до  $160 \text{ Вт/м}^2$ , а теплового коллектора –  $583 \text{ Вт/м}^2$ .

Работа термофотоэлектрической установки описывается по методике [5].

Максимальная мощность  $P_{max}$ , вырабатываемая солнечной батареей:

$$P_{max} = F_{ff} I_{кз} U_{xx} = I_{max} U_{max} \quad (1)$$

где  $F_{ff}$  – фактор заполнения вольт-амперной характеристики;  $I_{кз}$  – ток короткого замыкания;  $U_{xx}$  – напряжение холостого хода;  $I_{max}$  – ток в рабочей точке;  $U_{max}$  – напряжение в рабочей точке.

КПД фотоэлектрической солнечной бата-реи рассчитывается по известной формуле:

$$\eta_{сб} = \frac{I_{max} U_{max}}{S_{эл} E_0} = \frac{P_{max}}{S_{эл} E_0} \quad (2)$$

где  $S_{эл}$  – полезная площадь солнечных элементов,  $\text{м}^2$ ;  $E_0$  – освещенность рабочей поверхности,  $\text{Вт/м}^2$ .

Соответственно расчет теплового абсорбера производится также известным методом [6]. Полезная энергия  $Q_u$ , отводимая из коллектора в единицу времени, Вт, равна:

$$Q_u = F_R A [I_T(\tau\alpha) - U_L(T_i - T_a)], \quad (3)$$



где  $A$  – площадь коллектора,  $m^2$ ;  $F$  – коэффициент отвода теплоты из коллектора;  $I_T$  – плотность потока суммарной солнечной радиации в плоскости коллектора (с учетом углового коэффициента  $R$ ),  $Вт/м^2$ ;  $\tau$  – пропускательная способность прозрачных покрытий по отношению к солнечному излучению;  $\alpha$  – поглощательная способность пластины коллектора по отношению к солнечному излучению;  $U_L$  – полный коэффициент тепловых потерь коллектора,  $Вт/м^2 \text{ град}$ ;  $T_i$  – температура жидкости на входе в коллектор (на номинальном режиме),  $^{\circ}C$ ;  $T_a$  – температура окружающей среды,  $^{\circ}C$ .

Для практических расчетов более применим упрощенный вариант формулы (3):

$$Q_u = S_{TK} G C_p (T_{\text{вых}} - T_i), \quad (4)$$

Где  $Q_u$  – тепловая мощность солнечного коллектора  $P_{TK}$ ;  $S_{TK}$  – площадь коллектора,  $m^2$ ;  $T_{\text{вых}}$  – температура жидкости на выходе из коллектора.

Соответственно КПД теплового коллектора определяется формулой:

$$\eta_{СК} = \frac{P_{TK}}{S_{TK} E_0} \quad (5)$$

Для комбинированной установки освещенность  $E_0$  одинакова для тепловой и электрической части, а величины площадей  $S_{СК}$  и  $S_{эл}$  эквивалентны, т.е. можно записать:

$$\eta_{TK} = \frac{P_{TK}}{S_{TK} E_0}; \quad \eta_{СБ} = \frac{P_{СБ}}{S_{TK} E_0}, \quad (6)$$

где  $\eta_{СК}$ ,  $\eta_{СБ}$  – тепловой и электрический КПД комбинированной установки соответственно;  $P_{TK}$ ,  $P_{СБ}$  – мощность, отводимая от теплового коллектора и солнечной батареи соответственно;  $S_{TK}$  – полезная площадь термофотоэлектрической установки, заполненная солнечными элементами.

Общая мощность термофотоэлектрической установки равна сумме мощностей тепловой и фотоэлектрической частей:

$$P_{TK} = P_{TK} + P_{СБ} = S_{TK} E_0 (\eta_{TK} + \eta_{СБ}) = S_{TK} E_0 \eta_{TKф}, \quad (7)$$

где  $\eta_{TKф}$  – общий суммарный КПД термофотоэлектрической установки (комбинированной установки).

Отсюда видно, что при увеличении отбираемой мощности от солнечной установки за счет фотоэлектрической составляющей возрастает её суммарный КПД, так как площадь и освещенность рабочей поверхности остаются постоянными.

При неполном покрытии приемной поверхности комбинированной установки солнечными элементами формулу (7) необходимо заменить:

$$P_{TKф} = S_{TKф} E_0 (\eta_{TK} + f_{TKф} \eta_{СБ}) \quad (8)$$

где  $f_{TKф}$  – коэффициент заполнения солнечными элементами приемной поверхности комбинированной установки. В нашем случае он изменяется в пределах от 8/10 до 9/10.

КПД солнечных элементов при нагреве уменьшается:

$$\eta_{СБ} = f_{TKф} \eta_0 (1 - k(T_i - T_0)) \quad (9)$$

где  $\eta_0$  – КПД фотоэлемента при  $T_0 = 25^{\circ}C$ ;  $T_i$  – температура нагретого фотоэлемента (считаем её равной температуре жидкости на входе в коллектор); падение КПД солнечного элемента зависит от температурного градиента  $k$  и составляет от 0,3 до 0,5 %/ $^{\circ}C$  [7].

С учетом изложенного формула принимает вид:

$$P_{TKф} = S_{TKф} E_0 \frac{G C_p (T_{\text{вых}} - T_i)}{E_0} + S_{TKф} E_0 f_{TKф} \eta_0 (1 - k(T_i - T_0)), \quad (10)$$

По формулам (1) – (10) можно определить все параметры солнечной установки с учетом тепловой и электрической части.

## Результаты исследований

Для проведения экспериментов выбирались летние ясные дни с большой интенсивностью солнечной радиации. Освещенность при измерениях составляла от 980 до 1000  $Вт/м^2$ .

Паспортные данные использованной солнечной батареи:

Марка: AS – 100P,  $P_{max} = 100 \text{ Вт}$ ,  $U_{xx} = 21.8 \text{ В}$ ,  $I_{кз} = 6.1 \text{ А}$

Вышеприведенные значения справедливы при значениях:  $AM=1.5$   $E_0=1000 \text{ Вт/м}^2$   $T_c=25^{\circ}C$

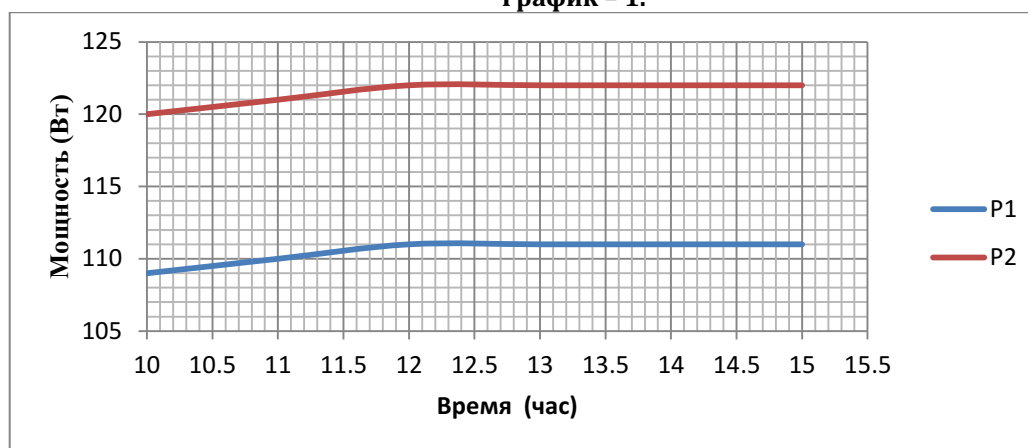
С учетом жаркого климата Узбекистана температура поверхности солнечного фотоэлектрического преобразователя может достигать до  $70^{\circ}C$  и выше, поэтому, не удается достичь номинальных значений энергетических характеристик в реальных условиях. В связи с этим целесообразно использовать комбинированные установки.

В таблице – 1, Приведены результаты измерения предложенной комбинированной установки.

Таб. 1.

№	Время измерения	Температура поверхности СБ (°C)	Ток короткого замыкания	Напряжение холостого хода
1	9.05.2020	29	5.65	21.75
2	25.05.2020	30	5.65	21.7
3	10.06.2020	31	5.64	21.7
4	21.06.2020	30	5.64	21.7

График - 1.



P1 – мощность фотоэлектрической батареи, P2 – Электрическая мощность комбинированной установки

Температурный градиент зависимости КПД солнечного элемента  $k = 0.42 \frac{\%}{^{\circ}\text{C}}$  [6]. Использование комбинированной установки, можно предотвращать 3% снижения КПД электрической части установки в реальных условиях. Тепловая мощность комбинированной установки согласно формулам (4) составляет 583 Вт.

## Выводы

Проведенные исследования показывают, что использование теплового коллектора с солнечными фотоэлектрическими преобразователями существенно увеличивает КПД солнечных батарей на 3% [7]. Это происходит вследствие того, что при работе солнечных батарей без теплового отвода инфракрасная тепловая составляющая солнечной радиации идет на нагрев фотоэлементов, что часто может приводить к их перегреву и падению КПД фотоэлементов [8, 9].

В результате исследований получены следующие результаты:

1. Можно сделать заключение об эффективности работы солнечных установок с

комбинированной выработкой электрической и тепловой энергии [3, 4].

2. Показано, что с 1 м<sup>2</sup> поверхности разработанной комбинированной установки можно получать до 160 Вт электрической и около 583 Вт тепловой мощности.

3. Суммарный коэффициент преобразования солнечной энергии комбинированной установки увеличивается до 75 %. При том, что электрический КПД солнечных элементов, используемых в исследованиях, около 17 %, а тепловой КПД установки может составлять до 58 %.

4. Использование разработанной установки в жилых домах с непрерывным источником воды является эффективным.

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## MODELS OF ENSURING THE QUALITY OF HIGHER EDUCATION IN WORLD PRACTICES AND THE EFFECTIVENESS OF THEIR USE

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### ABSTRACT

*This article analyzes the models of protecting the quality of higher education in the world program and their benefits.*

**KEY WORDS:** *higher education, innovation, goals, standards, educational criteria, scientific and educational activities, management, educational technology*

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### DISCUSSION

Today, higher education requires scientific and technical achievements and the ability to create a high level of added value in the field of innovation. As a result, there is a need for economic analysis of the quality of higher education, identification of financial, economic and management problems, assessment of the ability to achieve the set goals in the face of constant changes in external and internal factors. In this regard, the President of the Republic of Uzbekistan Sh. Mirziyoyev said: "... we need to logically complete our national programs on education. To this end, the most important task of the Government, relevant ministries and departments and the entire education system, our esteemed teachers and professors is to thoroughly educate the younger generation, to bring them up as physically and spiritually mature people. It is time to take our work to a new level, to create modern jobs for our children, to ensure that they take their rightful place in life "[1].

In general, in higher education, as in other sectors, quality is one of the main factors that ensure competitiveness and save costs. This will require economic, organizational, informational, legal support that will ensure the sustainable socio-economic efficiency of higher education and raise it to a new level of development. In this regard, the development of scientific proposals and practical recommendations for assessing the quality of higher education outcomes determines the relevance of the chosen topic.

The concept of higher education quality has been received differently by stakeholders and various competent organizations. Sources of international importance contain information about its three components: subjects of education; normative documents of education; learning environment [2]. In the research of L. Vlaskin and L. Greenberg, the quality of higher education is a multifaceted, multilevel and dynamic concept, which depends on the semantic unity of the educational model, the mission and objectives of the institution, as well as specific standards [3]. V. Levshina's research has expressed many controversial points, that is, shows two aspects of the quality of higher education: the quality of the outcome of the educational process; description of quality assurance systems. This requires a comprehensive analysis of the content of education, the process of training applicants, teaching staff, information and methodological support, educational technologies and scientific activities [4].

Scientific research has been conducted in Uzbekistan on the economic aspects of the quality of higher education. The issues of financing and management of higher education are widely covered. In particular, according to N. Mirkurbanov, regardless of the type and stage of the national economy and education, its existence and functioning in a market economy is based on quality criteria. Quality assurance in higher education leads to the training of mature personnel in the provard. This is an unproven axiom that has become a major issue for the Government of the Republic of Uzbekistan, the



Ministry of Higher and Secondary Special Education, and higher education institutions [5]. According to A. Karimov, L. Peregudov and M. Saidov, quality is a multifaceted concept in higher education. It should cover all functions and activities in the field of education - educational and academic programs, research and scholarships, full staffing, staff, students, buildings, facilities and equipment, all work for the welfare of society and the academic environment [6].

These studies have not comprehensively explored issues such as the optimal level of quality of higher education, social impact, and the allocation of resources to ensure the quality of higher education. In this regard, it is important to develop methodological approaches to the use of foreign experience in improving the quality of higher education in the reform of the higher education system of Uzbekistan.

One of the priorities in implementing a strong social policy in Uzbekistan is to improve the system of higher education and bring its quality to world standards. Improving the quality of higher education will ensure the sustainable development of the country's economy and its global competitiveness, increase the competitiveness of higher education graduates in the labor market and ensure the export of educational services, recognition of qualifications for foreign citizens and organizations.

The processes of globalization, the internationalization of the economy and business require national higher education systems to train qualified personnel who can work effectively in the rapidly changing global labor market. Higher education is becoming a social boon as well as a customer-centered education service system.

The concept of the quality of higher education first appeared in the economic literature in the nineteenth century, and the full tariff was achieved when the classical higher education system reached its maximum level of development. The quality of education reflects the socio-economic importance of education, and the description of educational activities includes its results, economic, social cognition and cultural aspects. There are various scientific approaches in defining the quality of education in the economic literature. According to the first approach, the quality of higher education is characterized by the factors influencing it. Including requirements (goals, standards, educational criteria); provision of resources (educational programs, human resources, contingent of entrants, infrastructure, logistics, finance); educational processes (scientific and educational activities, management, educational technology) and other factors are taken into account.

The second approach is based on the requirements of the laws of a market economy in relation to the beneficiaries interested in the development of the education system. In all tariffs for

the quality of education, a comparison of certain basic norms, standards, requirements, goals is made.

The formation of an effective system of quality assurance in education is a strategic priority and requires the active interaction of all subjects of education policy (national, regional, international, institutional).

The different national systems that ensure the quality of education in the world differ from each other in many respects. In the Organization for Economic Cooperation and Development (OECD) member countries, the higher education system is grouped according to the following criteria: the number of higher education institutions, the structure of higher education management, the grouping of higher education institutions, the degree of organizational autonomy. National systems of quality assurance in higher education differ in the following aspects:

- Government rights;
- Degree of involvement of public and trade unions;
- Statement of goals and objectives;
- Criteria and procedure.

This situation is determined by the differences in the education systems in different countries, including the management of the educational process and cultural traditions.

The following models of quality assurance in higher education are distinguished in the world practice:

The French model - nominal place is given to the internal self-assessment of the university, the main emphasis is placed on the effective external evaluation of the university by the state or public organizations. The German (Anglo-Saxon) model is used in Germany, France and the Scandinavian countries. In this model, the internal self-assessment of the university plays a crucial role and takes into account the expert assessment of the quality of external professional, social education, and it is widespread in the UK, Ireland, USA, Latin America, Philippines, Taiwan.

The "French model" of higher education quality assurance systems, the "continental" model of management of educational institutions is based on the following principles:

- Establishment of centralized control by the state over the policy of paternalism in relation to higher education by public authorities in the regulation of the development of higher education (Ministry of Education, Ministry of Education);
- Restriction of the independence of the higher education institution (financial and academic);
- Availability of a strong stratified system of university education (usually free);
- The leading role of state property in education.



In these cases, the quality of education is ensured by the responsible government agencies and funded by the government. Such quality assurance systems will be under government control, licensed, subject to state accreditation, certification, inspection, comparison of different higher education institutions, and allocation of financial resources.

The Anglo-Saxon model is based on the principles of the following "Atlantic" model:

- Independence of higher education (liberal approach to university development strategy);
- Higher education institutions have great autonomy, including rational financial and economic independence of each university;
- paid higher education system services;
- The share of non-state property in the education system is high.

The "American model" of improving the quality of education is based on the accreditation of educational institutions and educational programs and is an effective combination of the "French" and "English" models. U.S. universities have developed a self-assessment system. In other words, American higher education is largely controlled by higher education institutions. The process of accreditation of universities is carried out by the Association of Regional Universities and Colleges. These associations include specialized higher education commissions and accredit higher education institutions in the region. Accreditation of USA educational institutions is a system of collective regulation of higher education institutions to ensure a balance between the right to academic freedom and their responsibility to the state and society. Underlying the USA self-regulatory system is an assessment at the higher education institution level aimed at improving the education system.

The Bologna model of improving the quality of the higher education system is based on the following principles: voluntary participation and preservation of national identity, including the convergence of national higher education systems. Its basic provisions are set out in the 1999 Bologna Declaration, adopted by 29 European countries. The goal of this model is to provide access to the European education system and increase its international prestige and competitiveness.

At the beginning of the XXI century, due to political and economic changes in many countries, there is a convergence of systems to improve the quality of education. These changes are seriously affected by the Bologna process of improving the quality of higher education.

The Bologna Model is based on the following principles:

- Reduction of centralized control over the academic and research activities of higher education institutions and expansion of their independence and responsibility;

- Existence of national higher education institutions and higher education assessment organizations independent of the state education management structure;

- Mutually acceptable criteria for assessing and ensuring the quality of education and their use;
- Full participation of higher education institutions in the evaluation process;
- The following changes to this procedure should be given priority in the self-assessment report and compared with the external auditor's expert opinion.

Thus, all models of improving the quality of education are based on internal and external evaluation, and the exact mechanism of their implementation may vary. External control of higher education institutions is aimed at the collection of quantitative indicators of the university, as well as the identification of achievements and problems in the quality of education does not allow planning to improve the quality of education.

The quality education systems established by the universities themselves are a promising form of self-regulation, with each institution developing its own conceptual scheme, assessment methodology and methodology and implementation plan in accordance with its assessment strategy, program, goals, objectives and resources.

In Uzbekistan, the legal basis for the system of control and evaluation of the quality of the educational process and training has been formed. The state system of attestation and accreditation of higher education institutions of Uzbekistan to some extent meets the requirements set in the Bologna process of improving the quality of education. Needs improvement in some areas. In Uzbekistan, employers and students are not actively involved in ensuring the quality of higher education. The practice of self-assessment at the level of international standards is not established, the regulatory framework for its implementation is insufficient. The legal and regulatory framework for the system of socio-professional examination of educational institutions in the field of external evaluation is not perfect. The analysis shows that the main focus in ensuring the quality of education in Uzbekistan is not to improve the quality of education, but to report. Passivity in the implementation of the internal system of quality assurance in education is due to the lack of good information supply and lack of qualified personnel. External mechanisms of quality assurance in education are aimed at monitoring compliance with the established requirements of the organization of the educational process, rather than the strategy of improving the quality of education.

At present, in accordance with international requirements and recommendations aimed at ensuring the quality of education in Uzbekistan, the system of improving the quality of education needs to



be improved, and it is expedient to implement the following:

- Ensuring the broad and active participation of students, employers and public organizations interested in improving the skills of graduates in the process of improving the quality of education through the introduction of a system of regulation and incentives;

- Attention should be paid to the final results of students' studies, including employment in their specialty;

- Focusing on the internal mechanism of improving the quality of education will allow to strengthen the internal motivation of teachers working in the higher education system to improve the quality of education;

- A balance must be struck between reporting and improving the quality of education, as the ultimate goal of measures to improve the quality of education is to improve its quality. The report reflects the current state of the educational process;

- The results of attestation and accreditation of higher education institutions should be widely published in the media, on the Internet;

- Ensuring international comparative comparison of the quality of education should be carried out at the level of higher education institutions and government agencies that ensure the quality of education.

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## GLOBAL PROBLEMS AND GENERAL VALUES

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### ANNOTATION

*This article describes the environmental, social and global problems that are currently developing on a global scale and their impact on human values.*

**KEYWORDS:** *Global problem, universal value, environmental problems, social problems, quality of education, children's health*

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### DISCUSSION

Humans have lived on our planet for centuries and global problems have always existed. In ancient times, the biggest global problem was wars. Since the beginning of civilization, people have mostly fought with each other to get new territories and more lands. The problems of peace, health, and social activism, which are universal values, have always influenced world civilization. There are global problems today that can be divided into two categories: a) ecological; b) socio-economic and political issues.

The first category includes problems related to environmental destruction, pollution and global warming. Climate is changing and for many people climate change may be one of the biggest threats facing our planet. Global warming has destroyed some animals and plants. Rising sea levels are threatening all peoples in the Pacific and Indian Ocean islands.

The second category of global problems deals with social, economic and political issues. These include global terrorism, poverty, human rights, health, racism, and other issues that affect universal values. We are facing the problem of global terrorism. And more and more countries are suffering. It is very difficult to capture terrorists and prevent their actions. Another of the global problems in the world is the health of children and their access to secondary education. Children are the key to our future success, but many of their needs are not being met around the world. The under-five mortality rate remains high across countries. Children's health and education are interrelated. Malnutrition in children leads to permanent physiological damage. Hungry children are unable to concentrate and therefore do not learn. Children who are chronically hungry experience cognitive difficulties, meaning they can

never reach their true scientific or professional potential. Even when children go to school, their quality of education may be low or their educational opportunities and resources may be limited. This means that they can drop out of school without the required number or literacy skills. It is estimated that approximately 600 million children worldwide do not learn elementary math and literacy in school.

Although women make up almost half of this situation, there have historically been social barriers to economic and personal freedoms for women. While much has been done to alleviate this, there is still a long way to go in the developing world. When women are deprived of the opportunity to go to school from a young age, for financial reasons or because of the perception that their education is not important, they are deprived of their opportunities. Globally, women still earn less than men, and women with children earn even less. It wastes potential and hinders development that hinders global prosperity. Giving women a chance is a huge benefit to the world. It is estimated that if farm women were given the same resources as men, they could feed 150 million more people to achieve their goal of avoiding starvation. Women around the world are often the patrons of home health, and global well-being statistics can be radically changed if all women are taught effective health care methods. In some countries, children of educated mothers are also malnourished. But it is not just a lack of education and financial resources that is hurting women. HIV and AIDS-related diseases are the leading cause of death for women worldwide.

Much of the planet is covered with water. We rely on the oceans to maintain our rainwater system, and many rely on it for free food and income. The oceans also absorb carbon dioxide and produce 30



percent of our oxygen. But despite its importance, the ocean is in danger. Fishing and sustainable fishing lead to the extinction and extinction of many marine species. Pollutants such as boat fuel, pesticides, fertilizers, sewage and plastics create 'dead zones' - places where no organism can live are formed in the ocean. The atmosphere should be cleaned of carbon dioxide. The most effective and natural way to do this is to expand forest areas. In particular, it has become a tradition to plant thousands of seedlings on April 22 "Earth Day". In conclusion, it can be said that the growing global problems around the world are having a negative impact on world civilization and universal values. We need to find solutions to environmental, socio-economic, political problems and reduce these problems.

The concept of universal values represents the general forms of values that are of importance to society as a whole, reflecting the existence, past, present and future of mankind, the main directions of life, laws, requirements and procedures, the most ancient dreams and ideals of people. They are of common importance to all members of society, the changes taking place in human life, people's practical activities, lifestyles, attitudes towards others are also assessed according to whether they meet these criteria or not.

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## FEATURES OF INVESTMENT PROCESSES IN THE ECONOMY IN THE CONDITIONS OF THE CORONAVIRUS PANDEMIC

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### ANNOTATION

*The article examines the features of investment processes caused by the conditions of the coronavirus pandemic and measures taken to mitigate the crisis in the economy.*

**KEYWORDS:** *investments, investment processes, market infrastructure, government support, investment factors, investment activity.*

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### DISCUSSION

"The strategy of actions in the priority areas of further development of the Republic of Uzbekistan in 2017 - 2021", approved by the Decree of the President of the Republic of Uzbekistan dated February 7, 2017, identified one of the main tasks for the accelerated development of processing industries in all regions of the country. This policy is aimed, first of all, at increasing the share of competitive finished products in the structure of exports, at reducing the economy's dependence on the volatile prices of the world market for raw materials. Without the modernization of production, technical and technological re-equipment of industrial enterprises, the transition to international quality standards, liberalization of the economy in itself cannot lead to the expected results. Therefore, within the framework of the Strategy, targeted investment programs were adopted and implemented, in particular, in export-oriented industries, and at enterprises conducting production localization.

In the context of coronavirus pandemic accelerating and scaling up the process of modernization in the industry has become even more urgent. As you know, the coronavirus pandemic in all countries of the world leads to a decrease in GDP, to the closure of enterprises or to a reduction in production and an increase in unemployment. In Uzbekistan, although there is no reduction in GDP, a slowdown in GDP growth is observed - from 5,6 percent in 2019 to an expected 1,5 percent in 2020, the consequences of the coronavirus pandemic crisis

have affected the well-being of 450 thousand families. Therefore, in order to mitigate and possibly overcome the negative impact of the coronavirus pandemic on the economy, the state is taking large-scale measures. A very important area is the financial support of the state of economic entities. In this direction, in March - May 2020, 16 decrees and resolutions of the President of the Republic of Uzbekistan were adopted and implemented.

Anti-crisis measures of the state are aimed primarily at financial support of enterprises, which is also important for the processing industry. In the condition of a pandemic, business entities, starting from June 1, 2020, are exempt from land and property tax for 3 months, previous tax payments have been postponed, various tax payments have been reduced - in 2020, all this will amount to more than 70 trillion soums. For the period of the pandemic, procedures are being simplified and the conditions of bank lending will be softened, resource sources of bank lending are expanding.

Successful functioning in the conditions of global competition of the national economy and of an individual enterprise depends on the development and implementation of large advanced investment projects. Therefore, an increase in the scale and types of investment activities of enterprises, the innovative orientation of their further development is very important. The crisis phenomena associated with the coronavirus pandemic clearly demonstrate the need and relevance of qualitative changes in the implementation of the investment process, the



introduction of innovations in all spheres of social and economic life. In the context of the crisis, the importance of state support for commodity producers has especially increased, although in principle they should have the ability to financially autonomously operate (economic independence). This is due to the fact that, especially in times of crisis, each enterprise, one way or another, cannot ignore the importance of external sources - material, financial, scientific, etc.

In 2020, it is planned to commission 240 thousand production facilities in Uzbekistan, 16 thousand social facilities and infrastructure. For their implementation, along with other financial sources, it is planned to use funds allocated by the Asian Development Bank, the World Bank and the Japan International Cooperation Agency in the amount of 2.7 billion US dollars. In investment processes, an important place is occupied by the processing industry.

Achievements in the development of processing industries can be seen on the example of light industry enterprises. In recent years, a modern complex for processing raw cotton and selling products of a high degree of readiness has been created. It meets the requirements of the global market. In the country in 2020, 100 percent of the produced cotton fiber is processed, textile products are exported to many countries of the world. Work is underway to open up the markets of developed countries for the products of the textile industry of Uzbekistan. In the textile industry in 2020, US \$ 300 million of foreign direct investment is being mastered. The industry employs 365,000 people and exports US \$ 1.6 billion worth of products. In the next 3 years, the export potential should increase at least 2 times.

Some measures of an institutional and organizational nature are envisaged. It is planned to accelerate the transition in the design of large investment facilities to international standards, and restrictions on the allocation of budget funds for design purposes are canceled. To stimulate investment processes, local investors are equated with foreign ones. So, if a local investor implements an investment project worth more than 25 million US dollars, then the corresponding external communications will be built at the expense of the state.

The need to overcome the negative impact of the coronavirus pandemic on economic development suggests new approaches to the country's industrial policy. The primary task is the rational use of raw materials, the accelerated development of processing industries, the introduction of innovative technologies. The products of the processing industry must become competitive both in the domestic and foreign markets. It should be noted that in recent years, the scale of the introduction and use of advanced technologies in

developed countries has significantly expanded, which has led to fundamental changes in industry. New types of products have been created and the number of new jobs created is consistently growing.

As you know, the use of available local raw materials creates favorable conditions for expanding the export opportunities of industrial enterprises, localization of production. Domestic producers get a number of advantages by using local raw materials, in particular:

- comparative cheapness of local resources and cost reduction;
- overcoming dependence on imported raw materials and mitigating the effects of fluctuations in exchange rates, saving monetary and financial resources;
- and when using high-quality local raw materials, complex technological processes can give better results and the competitiveness of products increases;
- broader opportunities to influence resource suppliers regarding quality, volumes and delivery times.

Rational use of local raw materials is an important factor in reducing costs and increasing the competitiveness of industrial products. Cotton-growing clusters have been created and operated in Uzbekistan since 2018. In 2020, their number reached 96 and they cover the farms of 144 regions of the country. In them, farms produce agricultural raw materials under the direct order of a processing enterprise. In the first place is not the volume, but the quality of the raw materials produced. In addition, quality raw materials are guaranteed to be paid for at a substantially higher price. This organization of relationships between partners allows for a more complete use of local raw materials, which ultimately has a positive effect on the financial and economic stability of processing enterprises. The accelerated expansion of the scale of the use of modern technology and technology improves the overall efficiency of the industry.

It should be noted that in the industry of Uzbekistan, taking into account the prevailing conditions and needs, a set of measures is being carried out, covering the following main directions:

- acceleration of modernization of enterprises, technical and technological renewal of production, widespread introduction of modern rapidly adapting technologies. This is happening in leading industries, primarily in export-oriented and localized industries. The task was set to accelerate the implementation of the adopted sectoral programs for modernization, technical and technological renewal of production, which should strengthen the positions of manufacturers in local and international markets;
- creation of additional conditions in a situation when the current situation is changing, in





order to strengthen the stimulation of exports and strengthen the competitiveness of exporting enterprises;

- the widespread introduction of a saving regime, stimulating the efforts of manufacturers to reduce production costs and reduce production costs.

In modern conditions, the economic measures of the state are aimed at further increasing the investment attractiveness of the real sector of the economy. In particular, they provide for a significant expansion of the freedom of entrepreneurship. The principled approach is that the interference of state structures in entrepreneurial activity is radically reduced, priority is given to preventing violations and increasing the effectiveness of preventive work.

In the condition of the ongoing coronavirus pandemic, significant market and financial risks persist and intensify in industry. Therefore, state support for enterprises remains objectively necessary. The positive results in industrial development achieved in Uzbekistan show that this approach is justified.

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# IMPACT OF WORKING ENVIRONMENT ON JOB SATISFACTION OF EMPLOYEES

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## ABSTRACT

*The aim of this paper is to analyse the impact of working environment on job satisfaction of port trusts employees. A well-structured interview schedule was used to collect the primary data and proportionate random sampling method was used to select the respondents. The study found that there is a significant difference between the satisfaction of employees of V.O.C. and Chennai port trusts with regard to working environment.*

**KEYWORDS:** Working environment, Job satisfaction, Port trusts employees, Interview schedule.

## INTRODUCTION

A working environment is the environment where people work together for achieving organization objectives. It means systems, processes, structures and tools and all those things which interact with employees and affect in positive or negative ways on employee's performance. It can also be defined as the location where a task is completed. When studying place of employment, the work environment involves the physical geographical location as well as the immediate surroundings of the workplace such as a construction site or office building. It typically involves other factors relating to the place of employment such as the quality of the air, noise level and additional perks and benefits of employment. The term job satisfactions refer to the attitude and feelings people have about their work. Positive and favorable attitudes towards the job indicate job satisfaction. Negative and unfavorable attitudes towards the job indicate job dissatisfaction (Armstrong, 2006).

## STATEMENT OF THE PROBLEM

In order to increase efficiency, effectiveness, productivity and job commitment of employees, the business must satisfy the needs of its employees by providing good working conditions. Office

employees spend a lot of their time inside a building, where the physical environments influence their well-being and directly influence their work performance and productivity. In the workplace, it is often assumed that employees who are more satisfied with the physical environment are more likely to produce better work outcomes. Temperature, air quality, lighting and noise conditions in the office affect the work concentration and productivity. Numerous studies have consistently demonstrated that characteristics of the physical office environment can have a significant effect on behaviour, perceptions and productivity of employees. There were few studies done on the relationships between the physical office environment and employees' job satisfaction. Hence, this paper presents the impact of working environment on job satisfaction of port trusts employees.

## REVIEW OF LITERATURE

Ketharaj and Selvakumar (2009) in their research titled, "A Study on Job Satisfaction of Women Workers in Fireworks Industries in Tamil Nadu", analysed the perception of women workers relating to wages, working conditions, working environment, welfare facilities and so on in fireworks industry situated at Virudhunagar District in Tamil



Nadu. 400 women workers were selected randomly by using convenient sampling method. The primary data were collected through survey and analysed by using statistical techniques namely percentages, garret ranking and sign test. This study found that there is no significant difference between the facilities available in fireworks industries and job satisfaction. This study concluded that the satisfaction of women workers at Virudhunagar District is satisfactory. It was suggested that the industry should come forward to provide moderate wages and adequate safety measures.

Sumrinder Kaur et al., (2009) in their survey entitled, "A Study of Job Satisfaction and Work Environment Perception among Doctors in a Tertiary Hospital in Delhi", analysed job satisfaction among doctors in Delhi and various factors related with job satisfaction. The primary data were collected from 250 doctors on tenure- based job. They were selected by stratified random sampling. The primary data were collected by using a self administered questionnaire. The study found that a significant proportion of doctors were dissatisfied with their working hours and salary. The study suggested that further studies are needed to explore how best the working hours of doctors could be adjusted to improve their job satisfaction.

Loveleen Kaur Chawla (2009) in her article, "Job Satisfaction of Call Centre Employees", emphasized the performance management and job satisfaction of call centre employees in Indore. This study was based on primary data collected from 188 call centre employees through questionnaire. The key issues were identification and definition of key performance areas, role clarity and direction, performance feedback and potential appraisal and job rotation as a powerful tool to develop and unleash employee's potential. The study concluded that the conducive and congenial physical, social and psychological working conditions enhance the job satisfaction of the call centre employees.

## OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To analyse the job satisfaction of V.O.Chidambaranar and Chennai Port Trusts employees with regard to working environment.
2. To compare the satisfaction of both port trust employees with regard to working environment.
3. To offer suitable suggestions for the improvement of job satisfaction of

employees of V.O.Chidambaranar and Chennai port trusts.

## SCOPE OF THE STUDY

The present study covers job satisfaction of employees working in V.O.Chidambaranar port trust in Tuticorin and Chennai port trust in Chennai. There are eight departments in both port trusts namely, administration, mechanical and electrical engineering, civil engineering, marine engineering, finance, traffic, medical and vigilance department. The researcher conducted the survey in all the eight departments of both port trusts.

## SOURCES OF DATA

This study is based on both primary and secondary data. The primary data were collected from the employees of V.O.Chidambaranar and Chennai port trusts. The secondary data were collected from various books, journals, web sites and annual reports of the port trusts.

## METHODOLOGY

A well structured interview schedule was used to collect the primary data as well as information related to job satisfaction of the employees on working environment. A five point scale was used to measure the opinion of respondents on the working environment. V.O.Chidambaranar port trust and Chennai port trusts were selected for this study. A proportionate random sampling method was used to select the respondents. Out of 917 employees of V.O.Chidambaranar port trust and 7504 employees of Chennai port trust, respondents belonging to Class I to Class III alone were included for the study. The final population consisted of 699 employees of V.O.Chidambaranar and 5066 employees of Chennai port trusts. For each class of employees, the distributions of respondents were calculated proportionate to the population. The respondents from each class were chosen at random, using simple random sampling procedure.

## ANALYSIS AND INTERPRETATION OF DATA

Job satisfaction of employees on working environment is tested on Lighting, Ventilation, Temperature, Humidity, Sanitation, Cleanliness and Noise.

### Comparison of working environment in V.O.C. and Chennai port trusts

Data relating to satisfaction of employees towards working environment is presented in table 1.



**Table 1**  
**Port-wise mean scores of working environment**

Items	PORT					
	VOC			Chennai		
	Mean	S.D	No. of Respondents	Mean	S.D	No. of Respondents
Lighting	4.06	.64	254	3.89	.69	370
Ventilation	3.91	.77	254	3.73	.85	370
Temperature	3.65	.89	254	3.35	1.05	370
Humidity	3.63	.90	254	3.36	1.01	370
Sanitation	3.37	1.03	254	3.28	1.05	370
Cleanliness	3.31	1.07	254	3.29	1.05	370
Noise	3.55	.94	254	3.44	.93	370
<b>Factor items mean</b>	<b>3.64</b>	<b>.70</b>	<b>254</b>	<b>3.48</b>	<b>.77</b>	<b>370</b>
<b>Overall score</b>	<b>25.47</b>	<b>4.91</b>	<b>254</b>	<b>24.34</b>	<b>5.37</b>	<b>370</b>

Source: Computed data

The above table reveals that the factor items mean of working environment of V.O.C. port trust is 3.64 and that of Chennai port trust is 3.48. Comparison of mean ratings of individual scale items with their factor items mean in V.O.C. port trust reveals that lighting, ventilation and temperature have scored higher. Humidity, sanitation, cleanliness and noise have scored lower than the factor items mean in V.O.C. port trust.

In Chennai port trust lighting and ventilation have scored higher than the factor items mean and the remaining individual scale items have scored lower than the factor items mean. The overall mean

scores of V.O.C. and Chennai port trusts is 25.47 and 24.34 respectively. This shows that Chennai port trust employees have slightly lower satisfaction with regard to working environment.

The following hypothesis has been framed to test whether the scores of working environment differed significantly between the employees of V.O.C. and Chennai port trusts.

$H_0$ : There is no significant difference between the satisfaction of employees of V.O.C. and Chennai port trusts with regard to working environment.

**Table 2**  
**t-test for comparison of overall mean scores of working environment**

t	df	Sig. Value
2.661	622	0.001**

Source: Computed data

\*\* 1% level of significance

The calculated t-test value at 2.661 is greater than the table value of 2.584 at 1% level of significance. It is, therefore, inferred that there is a significant difference between the satisfaction of employees of V.O.C. and Chennai port trusts with regard to working environment. Hence, the hypothesis is rejected.

### FINDINGS

- Comparison of mean ratings of individual scale items with their factor items mean in V.O.C. port trust reveals that lighting, ventilation and temperature have scored higher.
- Comparison of mean ratings of individual scale items with their factor items mean in Chennai port trust shows that lighting and ventilation have scored higher than the factor items mean.

- The overall mean scores of working environment of V.O.C. and Chennai port trusts is 25.47 and 24.34 respectively.
- Chennai port trust employees have slightly lower satisfaction with regard to working environment.
- There is a significant difference between the satisfaction of employees of V.O.C. and Chennai port trusts with regard to working environment.

### SUGGESTIONS

In working environment, cleanliness has scored the least mean score in V.O.C. port trust and sanitation in Chennai port trust. The working places should, therefore, be kept clean and free from wastage and dirt. The managements must provide clean and hygienic environment to the employees through improvement in the quality of housekeeping and also instruct and guide employees to maintain a



clean environment. Conducive and congenial working environment may improve the job satisfaction of employees and its leads to increase their productivity.

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## CONCLUSION

Some factors in workplace environment may be considered important for job satisfaction. The quality of working environment may simply determine the level of employees' motivation, subsequent performance, productivity and jobs satisfaction. Eventually, this study proved the words of Robert Hoppock that "Job satisfaction is also related to the place of work or work situation. It's believed that employees at the work place in large cities are generally less satisfied with their jobs than those who work in small towns or cities". This study proved that town employees of V.O.C. port trust are more satisfied than large city employees of Chennai port trust.

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# IMPACT OF LEADERSHIP ON ORGANISATIONAL EFFECTIVENESS

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## ABSTRACT

*The implication of this study is related to the impact of Compensation on HRM practices while HR is broadly understood to be an attractive option, its specific impact on performance and value that results not yet been well confirmed by research. HR function's program is similar to all programs and policies, in that learning comes after implementation; therefore, evaluating and reviewing with 360-degree feedback will ensure a more holistic view and systematic evaluation of the success of the outsourcing HR service. The ultimate aim of this study is to unearth the impact of outsourcing on Human resources practices in selected Public sectors of Visakhapatnam like Visakhapatnam Port Trust, Visakhapatnam Steel Plant, Bharat Heavy Plates Limited, Hindustan Ship Yard, Hindustan Petroleum Corporation Limited. Data was collected both from primary and secondary sources. The researcher has personally visited organisations and administered the questionnaire / schedule and collected first hand information through personal interviews. Secondary sources of the data were also used and they include records, reports, files and other published and unpublished materials of the organisations.*

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## INTRODUCTION

One of the four most important factors of production is Human Resource. This Resource has some unique characteristics which separates it from other factors of production. Due to this, human resource occupies a special place in the business of any organization. Human Resource Management is the function performed in organizations that facilitate the most effective use of people (employees) to achieve organizational and individual goals. HRM involves designing management systems to ensure that human talent is used effectively and efficiently to accomplish organizational goals.

### **Outsourcing of Human Resources:**

Human Resource outsourcing is considered as an important factor in today's business world. It is

constantly growing, especially in the global world where companies outsource not just within their country but across borders. Although there are numerous reasons to outsource, current wisdom dictates that the primary reason a company should look to outsource is to regain and improve focus on strategic business processes. Outsourcing allows a company to focus on broader business strategies while having the less strategic aspects of a business performed by an outside expert.

The organisation must be flexible enough to change, because outsourcing requires a culture shift, including the willingness to work with interdependencies and to take risks. While some costs, such as fixed internal resources, will be reduced or



avoided, some other costs such as communications and travel will increase. The organisation needs to be able to see these in the context of direct cost savings, and the costs which would have been necessary should outsourcing not have been chosen.

## REVIEW OF LITERATURE

Quinn (1999) emphasized that the affect of outsourcing enables organizations to: (1) concentrate more power than anyone else on the capabilities that customers genuinely care about, (2) innovate constantly to stay ahead of competitors, (3) develop flexibilities to adapt to changing competitor pressures and opportunities, and (4) leverage organizational resources through the capabilities and investments of others. In a survey conducted by Miller (2006), 86 percent of respondents, including top executives, cited that introducing outsourcing into their organisations could increase their overall business outcomes in many areas. Chatterjee, S. R. (2007), opined India is being widely recognised as one of the most exciting emerging economies in the world. Besides becoming a global hub of outsourcing, Indian firms are spreading their wings globally through mergers and acquisitions. Akdemir, (2009). However, in the context of organisational outsourcing, communication can impact on attitudes and behaviours at work. Hence, it appears important for the organisation to communicate the outsourcing issues, including the reason to outsource, and the benefits of outsourcing to employees. light of outsourcing. K. Alef ., et.al., (2013), "The link between perceived human resource management practices, engagement and employee behaviour: a moderated mediation model", researcher contributes to understanding of the mediating and moderating processes through which human resource management (HRM) practices are linked with behavioural outcomes. Researcher developed and tested a moderated mediation model linking perceived HRM practices to organisational citizenship behaviour and turnover intentions. Sarosh Kuruvilla and Aruna Ranganathan (2010) in their research study titled "Globalisation and outsourcing: confronting new human resource challenges in India's business process outsourcing industry" argue that the rapid growth of the outsourcing industry has resulted in both high turnover and labour shortages and at the same time provided employment opportunities to a new group of employees: young upwardly mobile college graduates.

## NEED FOR THE STUDY

In more recent times the need for organisations to compete not just locally but nationally and even globally has led to many organisations recognising the

importance of the effective use of the human resource. An approach which has been called human resource management acknowledges the contribution that people management makes to organisational effectiveness and requires the personnel function to be more integrated with the broader objectives of the organisation, adopting a proactive rather than reactive approach. HR practitioners face a tough challenge in anticipating the effect of internal and external changes, the change process occurs in business environments that are themselves changing, resulting in unpredictable outcomes.

## OBJECTIVES OF THE STUDY

- To study and explore the reasons for Human Resource Policies.
- Examine how successful Human Resource Policies and Practices in Automobile Industry.
- Recent developments of HR Practices in selected Automobile industries of Gurgaon .
- To crystallize the impact of HR policies and practices for effective leadership and job performance

## A. RESEARCH METHODOLOGY

The universe for the present study is derived from selected private sector undertakings located in Gurgaon. Since the undertakings chosen from various Automobile Industries, There are different categories of employees in the organization. These different categories are broadly classified into five categories namely workers other wise called as Associates, Lower Management Cadre, Middle Management Cadre, Senior Management Cadre and Top level Management. In the Managerial category there are different cadres, they are Junior Managers, Middle level managers and senior level managers. The researcher has included all the 252 employees here after called as respondents in the sample. The different item relating to both the dependent variables and the intervening variables are provided with alternatives basing on Likert pattern of five point scale. The five response categories together with the numerical values assigned to them for computation are! Strongly agree (2), agree (1), No Opinion (0), disagree (-1), strongly disagree (-2). The tabulations and the results for analysis were done with the help of SPSS (Statistical Package for Social Sciences) version 14, MINITAB version-14 and Microsoft Excel for Statistical measurements such as simple percentages, mean values etc., were used in the present study. Normal test (Z-test) is conducted to know the mean significance difference between the two categories of the respondents. ANOVA test was administered to know the average significant difference



between the opinion of the respondents belonging to different respondents.

i. Reliability Tests in Study:

Cronbach's alpha can be written as a function of the number of test items and the average inter-correlation among the items. Below, for conceptual purposes, the researcher show the formula for the standardized Cronbach's alpha:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}$$

Here N is equal to the number of items, c-bar is the average inter-item covariance among the items and v-bar equals the average variance. The alpha coefficient for the 78 items is 0.860, suggesting that the items have highly relatively internal consistency.

ii. **Cadre wise Distribution of the Respondents**

CADRE	Frequency	Percent
Middle level Managers	202	80.1
Senior level Managers	50	19.9
Total	252	100.0

iii. **Department wise Distribution of the Respondents**

DEPARTMENT	Frequency	Percent
Administration	66	26.3
Marketing and Services	26	10.4
Logistics and Operations	44	17.6
Sales and Distribution	42	16.7
Vendor Management	25	10
Research and Development	49	19.4
Total	252	100.0

iv. **Reliability Tests**

Dimension Name	Alpha	Cases	Items
Lower Management	0.585	252	11
Middle Management	0.90	252	13
Senior Level management	0.494	252	6
Top Level management	0.62	252	30
Leadership	0.928	252	25
Decision Making	0.708	252	16
Motivation	0.875	252	7
Overall	0.860	252	78

**B. LIMITATIONS**

Since the important method used in the enquiry is the case study, it has all the limitations associated with it. The generalizations of the study cannot be expected to have universal application. Even when trying to apply to the organization of similar nature, these must be applied with caution. During the collection of

information, it was found that officials were rather hesitant and ambivalent in providing the required information and sometimes they were reluctant to discuss.





### C. DATA ANALYSIS

#### i. Overall opinion of the respondents on HR Policies:

Opinion on HR Policies Style	Strongly Agree	Agree	No Opinion	Disagree	Strongly disagree
Well framed HR practices will increase the organisational effectiveness and performance.	11.1	24.6		42.5	21.8
Good direction and execution is required		23.4	6.7	69.8	
Levels of Job role and creation is very important	23.4	12.7		63.9	
Division of proper labour and job description with role clarity play a significant role in HR Management		67.1		32.9	
Leaders won't have exemptions		5.2		94.8	
Most people prefer directions rather than taking the lead and responsibility.	7.5	13.1	10.3	57.9	11.1

#### ii. Overall opinion of the respondents on Initiative Practices of HR:

Statements On Organization culture	Strongly Agree	Agree	No Opinion	Disagree	Strongly disagree
Forecasting of the problems is up to the mark?	26.6	54.4	17.9	1.2	
Quality of the product is up to the mark??	25	51.2	19.8	2.4	1.6
People do their work efficiently at up to the mark??	25	52.4	20.6	1.6	0.4
Morale of employees in the organization is up to the mark?		93.3	6.7		
People take effective measures to meet the anticipated problems in an Organisation?	25	50	23	1.2	0.8
people in your organization well informed about new developments?		43.3	53.2	2.4	1.2
Organization adapts new changes in Macro environment?		69.8	28.6	1.6	
Morale of managers in the organization is up to the mark?		93.3	6.7		
Impact of HR practices in growth of the organization?	6	94			
How well planned are the work assignments in your organization?		87.7	11.1	1.2	
How well are your systems and procedures geared to achieve company goals?		93.3	6.7		
How well qualified are people in your organization to handle the tasks assigned to them?	24.2	50.8	21	2	2
How good are the industrial relations in your organization?	25	75			
Decision making in HR Policies and Practices is up to the mark?	25.4	51.6	19.8	2	1.2
Quality of decisions is up to the mark?	24.6	52	20.2	2.4	0.8
Degree of effectiveness of decisions on important issues?	25	75			
Degree of acceptance of decisions made by HR in the organization	24.6	53.6	18.7	3.2	
Degree of delegation of authority by HR in the organization		93.3	6.7		
Degree to which superior and other managers interference in others work		69.8	28.6	1.6	



Subordinates involvement in making decisions?		93.3	6.7		
Overall decision making involvement in implementing the HR Policies and Practices?		69.8	28.6	1.6	
Decision-makers are aware of the deficiencies in the organization	25.4	52.4	18.3	2	2
Success rate of Management in removing the problems of the organization?		87.3	12.7		
Top management follow their own policies?	24.6	52.8	18.7	2.4	1.6
Optimum utilisation of Resources in organization (money, equipment, people, etc.) it has?		87.7	10.3	1.2	0.8
Average	12.25	69.87	16.18	1.20	0.50

**iii. Overall opinion of the respondents on Problem solving:**

<b>Your opinion on decision making</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>No Opinion</b>	<b>Disagree</b>	<b>Strongly disagree</b>
Problem solving with consultation of other employees in the Organisation.		75.4		24.6	
Decisions are generally taken after consultation with top level management cadre?	62.7	24.6	12.7		
Well aware of all important problems confronted at lower levels?	2.4	72.2	24.2	0.8	0.4
Technical and professional knowledge is considered in decision making process?	2	72.6	24.6	0.8	
Decisions made often on analysis with relevant data:	1.2	73	0.8	24.6	0.4
Adequate information is available for solving the problems?	62.7		37.3		
Problems will be solved by groups instead of individuals.	62.7		12.7		24.6
The influence an individual ability of problem solving depends on his skill and competence?		75.4		24.6	
Problem solvers are able to anticipate and assess Macro environmental trends?	17.1		54.8	24.6	3.6
Mostly Problem solvers depends on precedents?		24.6		75.4	
Problem solvers follow the marks set by Top management?	24.6	75.4			
Ground level reality is aware by Problem solvers in an organisation?		71.8	24.2	2	2
In case of sudden problems the technique PDCA-Plan Do Check and Act used to be followed?	25.8	52.4	18.3	2	1.6
Lower Management is interested to work with Top Management in Problem solving?	26.6	54.4	17.9	1.2	
Earlier decisions will be checked but not considered all the times?		75.4	24.6		
After solving the Problems arised will be circulated for inferences and feedback issues?	24.6			75.4	
Average	19.52	46.69	15.75	16	2.04



**iv. Overall opinion of the respondents on Communication of HR Practices:**

<b>opinion on Organizational effectiveness</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>No Opinion</b>	<b>Disagree</b>	<b>Strongly disagree</b>
All the employees in the Organisation will be communicated new challenges and issues related to HR Practices?		75.4		24.6	
Only after clear communication only Policies will be adopted and accepted by employees?	62.7	12.7	24.6		
Review and control of Practices will be done by senior management cadre at all levels?	19	61.9	14.7	3.6	0.8
In daily job practices it is considered effectively that practices should not effect the smooth flow of working environment?		75.4	24.6		
All the people will share information when it is required and asked by others?	11.1	75.4	6.7	6.7	
Problems will be solved with clear discussions by effective communication of participation?		75.4		24.6	
Adequate Management Information system is there?		75.4	24.6		
<b>Average</b>	<b>13.26</b>	<b>64.52</b>	<b>13.6</b>	<b>8.50</b>	<b>0.11</b>

**v. Significant difference in the average opinion scores of respondents belongs to different Management Cadres:**

Dimension	INCOME (In Rupees)	N	Mean	S.D	F-value	P-value	Decision
Leadership Style	Low level Managers	61	0.1656	0.2089	0.43	0.734	N.S
	Middle Level Managers	111	0.1955	0.1800			
	Senior Level Managers	44	0.1720	0.1971			
	Top Level Managers	36	0.1704	0.1640			
Organization culture	Low level Managers	61	0.8236	0.3950	2.69	0.047	S
	Middle Level Managers	111	0.9777	0.3277			
	Senior Level Managers	44	0.8964	0.3433			
	Top Level Managers	36	0.9489	0.3456			
Decision making	Low level Managers	61	0.5754	0.4203	1.44	0.232	N.S
	Middle Level Managers	111	0.6857	0.3695			
	Senior Level Managers	44	0.6584	0.3723			
	Top Level Managers	36	0.7178	0.3614			
Organization effectiveness	Low level Managers	61	0.6662	0.6120	1.33	0.266	N.S
	Middle Level Managers	111	0.8347	0.5489			
	Senior Level Managers	44	0.7750	0.6255			
	Top Level Managers	36	0.8606	0.5681			



**vi. Significant difference in the average opinion scores of respondents belongs to different departments on all the dimensions:**

Dimension	EXPERIENCE	n	Mean	S.D	F-value	P-value	Decision
Leadership style	Administration	96	0.1958	0.1925	1.52	0.196	N.S
	Marketing and Services	32	0.1542	0.2021			
	Logistics and Operations	49	0.1306	0.1947			
	Sales and Distribution	33	0.2101	0.1761			
	Vendor Management	42	0.2008	0.1583			
Organization culture	Administration	96	0.9546	0.3303	1.97	0.10	N.S
	Marketing and Services	32	0.9225	0.3322			
	Logistics and Operations	49	0.8	0.4236			
	Sales and Distribution	33	0.9830	0.33174			
	Vendor Management	42	0.9419	0.3320			
Decision Making	Administration	96	0.6604	0.3671	1.49	0.206	N.S
	Marketing and Services	32	0.6619	0.3842			
	Logistics and Operations	49	0.5884	0.4443			
	Sales and Distribution	33	0.6106	0.3739			
	Vendor Management	42	0.7729	0.3347			
Organization effectiveness	Administration	96	0.7765	0.6308	0.80	0.529	N.S
	Marketing and Services	32	0.8206	0.5346			
	Logistics and Operations	49	0.6837	0.5875			
	Sales and Distribution	33	0.8	0.5480			
	Vendor Management	42	0.8969	0.5218			

**vii. Significant difference in the average opinion scores of respondents belongs to different experiences of employees on all the dimensions:**

Dimension	AGE	n	Mean	S.D	F-value	P-value	Decision
Leadership Style	Less than 5 Years	22	0.1394	0.2193	1.01	0.390	N.S
	Less than 15 Years	67	0.1602	0.1947			
	Less than 25 years	59	0.1842	0.2023			
	Above 25 years	104	0.2003	0.1662			
Organization culture	Less than 5 Years	22	0.8491	0.4049	0.93	0.427	N.S
	Less than 15 Years	67	0.8848	0.3425			
	Less than 25 years	59	0.9668	0.3403			
	Above 25 years	104	0.9362	0.3574			
Decision making	Less than 5 Years	22	0.5836	0.3815	0.62	0.602	N.S
	Less than 15 Years	67	0.6393	0.3963			
	Less than 25 years	59	0.7046	0.3653			
	Above 25 years	104	0.6613	0.3860			
Organization effectiveness	Less than 5 Years	22	0.7855	0.6214	0.27	0.848	N.S
	Less than 15 Years	67	0.7433	0.6287			
	Less than 25 years	59	0.8369	0.5334			
	Above 25 years	104	0.7876	0.5755			



#### D. MAJOR FINDINGS

- Pearson correlation of HR Policies and Practices = 0.371, P-Value = 0.000, there is a significant relationship between the two dimensions Decision making and Leadership style
- Pearson correlation of Problem solving and Organization culture = 0.395, P-Value = 0.000, P-value divulges that the relationship between the dimensions leadership style and organization culture is significant at 0.05 level.
- Pearson correlation of communication and Organizational effectiveness = 0.375, P-Value = 0.000, the correlation coefficient r-value and P-value indicates that there is a significant correlation between leadership style and organizational effectiveness at 5% level of significance.
- Pearson correlation of various departmental effectiveness = -0.229, P-Value = 0.000, there is a significant correlation between autocratic leadership style and organizational effectiveness. Also the r-value suggests that there is a negative correlation between both the dimensions.
- It is indicated that Democratic Leadership Style is very much important factor which is contributing for the effectiveness of the organization.
- There is a significant correlation between autocratic leadership style and organizational effectiveness. Also the r-value suggests that there is a negative correlation between both the dimensions.
- It indicates the difference in between these age groups may be that the company is giving preference to the experience personnel at managerial levels.
- people are responsible for themselves and one else, thus the leader can not be blamed for or take credit for the work of his subordinates.
- There is no significant difference for the dimensions of leadership style, decision making and organizational effectiveness. However there is a significant difference in the opinion of the respondents from the four categories in terms of organization culture.
- With regard to experience wise responses on all dimensions there is no significant mean difference in opinion score between the experience groups with respect to the said dimensions, whereas the score on organization

culture is more when compared with the remaining dimensions.

- Autocratic style of leadership the results are negative which indicated that both the cadres are not in favour of autocratic style of leadership and it is not at all contributing for the effectiveness of the organization.

#### E. Suggestions:

- Most of the respondents opined that periodical performance reviews are not being conducted in a regular manner, hence it is suggested that the concerned management of the organization can take necessary steps in order to conduct performance reviews regularly.
- It is suggested that the management should take necessary steps to make the culture of the organization much better.
- It is also suggested that frequent training programs for managers shall be conducted to equip themselves with latest techniques in order to withstand themselves during the tough competition in the present globalize scenario.
- It is suggested that the management should take necessary steps to advise such managers to be Democratic.

#### F. CONCLUSION

The business management environment has become severe in recent years and that organizational development strategies often need transforming. Thus, a business is more eager than ever for those who have the transformational leadership being able to change organizational strategy and culture and being able to enable the organization to be more adaptable to external environmental requirements. It is certain that a business also expect these that have the charismatic leadership and the visionary leadership of being self-confident and competent for expressing visions. Furthermore, subordinates will be inspired with more potential by such leadership styles and make more mental and physical efforts for organizations. Therefore, an organization can start from adjusting the leadership style if wanting to promote the organizational performance. Leadership is a dynamic and flowing process involving the interplay of the situations, the followers, and the goals with the behaviour of the leader



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# IMPACT OF COMMUNICATION AND LEADERSHIP ON ORGANISATIONAL PERFORMANCE

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## ABSTRACT

*This research study examines the styles of organizational leadership and evaluates them in terms of related measures of organizational effectiveness with the objective of exploring whether there is any relationship between leadership styles and organizational effectiveness. Since the undertakings chosen from Automobile Industry there are different categories of employees in the organization. These different categories are broadly classified into five categories namely workers otherwise called as Associates, Junior Management Cadre, Middle Management Cadre, Senior Management Cadre and Top Management. In the Managerial category there are different cadres, they are Junior Managers, Middle level managers and senior level managers. Since “the study is impact of leadership styles on organizational effectiveness” the associates category, staff and operators categories and Junior Managerial category are excluded from the purview of the study as these categories do not possess Decision Making Powers.*

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## A. INTRODUCTION

It is generally accepted that leadership and types of leadership play a vital role in driving change, but that there are different sources of leadership and that the definition of leadership varies from situation to situation. Leaders do not exist in isolation and neither do their companies. Leaders who are as in touch with the macro environment in which their business executes, as its micro environment, and can adapt their direction to changing circumstances are more likely to continue as leaders of successful organisations. The ever changing business environment has created a need for leaders who can meet the demands and challenges of organizations functioning in complex and competitive situations, with the world open for trade. The discussion in this chapter initially describes the nature and definition of leadership, leadership types

and organizational effectiveness. Good leaders are made not born. Besides personality traits, it has been assumed that the acquisition of certain skills on the part of leader has almost become a necessity for the successful performance of task. There are several types modeled from the three basic styles of Leadership namely Authoritarian type, Democratic / Participative type and Free-Rein type.

## B. REVIEW OF LITERATURE

The insight of the study based on literature and earlier studies of Leadership Styles and Organizational effectiveness. Leadership Styles has assumed considerable importance in the 21st century, because of its impact on employee performance and organizational efficiency. all members of the organization in order to achieve desired results. Most of the authors opined that



effective leadership is the capacity of manager to integrate efforts of First, when followers assess the strengths and weaknesses of their leaders, they may have difficulty in differentiating between the various transformation and transactional leadership behaviours.

Mark A. Huselid, (1997), Conducted a study on “Technical and Strategic Human Resource Management Effectiveness as Determinants of Firm Performance” in study he evaluated the impact of human resource (HR) managers’ capabilities of leadership on HR management effectiveness and the latter’s impact on corporate financial performance. He observed that for 293 U.S. firms, effectiveness was associated with capabilities and attributes of HR staff leadership. He also found relationships between HR management effectiveness and productivity, cash flow, and market value. Elizabeth B. Bolton (2007), research article on “Leadership Styles and Leadership Change in Human and Community Service Organizations”, deals with leaders who must be able to adapt their style to the changing environment.

**C. NEED FOR THE STUDY**

Today organizations strive to link individual performance more closely to organizational goals. Employers want the employees to perform well in

teams and leadership against both current and future objectives of the company. There is, therefore, a continuous enquiry so as to know what skills and competencies will be required to fill longer term goals of leadership. Competitive pressures have forced organizational changes in the areas of leadership styles, decision making and motivation etc.

**D. OBJECTIVES OF THE STUDY**

- To study the influence of Leadership Styles on organizational culture.
- To ascertain the environmental factors influencing the adoption of such leadership styles.
- To assess the overall impact of leadership styles on organizational effectiveness.
- To measure the influence of some selected behavioral factors of employees on leadership styles.
- To suggest alternative strategies wherever necessary to improve leadership styles.

**E. RESEARCH METHODOLOGY**

**i. Sampling:**

Keeping in of the above objectives and methods of study the sample is drawn from different categories of Auto Mobile Industry i.e., 1. Executives 2. Staff 3.Workmen

Department	Strength
Office administration	96
Marketing	69
Purchasing	735
Finance	156
Materials	138
Stores	723
Fabrication	2,027
Painting and Polish	644
Research and Development	50
Others	430
Total	5,068

a. Sample Size taken for the study from various Automobile industries:

Category	Strength	Sample Size (10%)
Organisation Executives	330	33
Operations Staff	3,125	313
Technicians and others`	1,824	183
Total	5,068	529

**ii. Tools for investigation and data collection:**

Data was collected through technique of schedule, interview and observations. The designed schedule was administered after pretesting in a pilot

study. Interview was conducted at the convenient to the respondents to have qualitatively better than any tool. Convenient timings for the respondents have been fixed in advance mostly during the early hours to utilize the fresh mind of the respondents and at some time during





the lunch breaks and some on the occasions at evening in the hours. Personal interviews were conducted with all the respondents. The researcher has used SPSS 16.0 Version Software and M S Excel for the purpose of data analysis.

iii. Reliability of the Schedule / questionnaire:

Cronbach's Alpha test is also conducted to find out internal consistency and reliability associated with scores or composite scores which can be derived using a scale or composite score. Reliability is important because in the absence of reliability it is impossible to have a validity of scale or question included in the questionnaire or a Schedule. Cronbach's

alpha is a measure of internal consistency that is, how closely related a set of items as a group. For conceptual purposes, the formula for the standardized Cronbach's alpha is given below.

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}$$

Here N is equal to the number of items, c-bar is the average inter-item co variance among the items and v-bar equals the average variance. Reliability statistics of dimension of Human Resources Policies in the organisation is being presented below

#### Reliability Statistics

Cronbach's Alpha	N of Items
.908	68

The alpha coefficient for the 82 items is 0.923 suggesting that the questions possess internal consistency.

#### F. LIMITATIONS

Since the important method used in the enquiry is the case study, it has all the limitations associated with the method. The generalizations of the study cannot be

expected to have universal application. Even when one tries to apply to the organization of similar nature, it must be applied with caution. During the collection of information, it was found that some respondents were rather hesitant and unsure in providing the desired information. Employees were hard pressed for time in view of the job demands and rigorous work schedule.

#### G. DATA ANALYSIS

##### i. Leaders aware the Mission and vision of the Organisation:

Category	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Organisation Executives	28 (84.84%)	4 (12.12%)	1 (3.03%)	0 (0.0%)	0 (0.00%)	33 (100%)
Operations staff	0 (0.00%)	229 (73.16%)	82 (26.19%)	2 (0.60%)	0 (0.00%)	313 (100%)
Technicians and others`	0 (0.00%)	127 (69.40%)	56 (30.60%)	0 (0.00%)	0 (0.00%)	183 (100%)
Total	28 (5.29%)	360 (68.07%)	139 (26.27%)	2 (0.37%)	0 (0.00%)	529 (100%)

Chi Square Value : 4.467, P Value : 0.02



**ii. Employees updated with policy changes:**

Category	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Organisation Executives	12 (36.36%)	16 (48.48%)	5 (15.16%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	103 (32.90%)	151 (48.24%)	58 (18.54%)	0 (0.00%)	1 (0.32%)	313 (100%)
Technicians and others	53 (26.96%)	86 (46.99%)	43 (23.50%)	1 (0.55%)	0 (0.00%)	183 (100%)
Total	168 (31.75%)	253 (47.83%)	107 (20.23%)	1 (0.19%)	0 (0.00%)	529 (100%)

Chi Square Value : 4.414, P Value : 0.01

**iii. Influence of Leadership on Prevention of Training new employees in an organisation:**

Category	Excellent	Good	Average	Poor	Very Poor	Total
Organisation Executives	31 (91.94%)	2 (6.06%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	7 (2.24%)	216 (69.01%)	89 (28.43%)	1 (0.32%)	0 (0.00%)	313 (100%)
Technicians and others	0 (0.00%)	107 (58.47%)	76 (41.53%)	0 (0.00%)	0 (0.00%)	183 (100%)
Total	38 (7.18%)	325 (61.44%)	165 (31.19%)	1 (0.19%)	0 (0.00%)	529 (100%)

Chi Square Value: 4.720, P Value : 0.00

**iv. Impact Leadership on Organisational Performance:**

Category	Excellent	Good	Average	Poor	Very Poor	Total
Organisation Executives	13 (39.39%)	14 (42.43%)	6 (18.18%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	5 (1.59%)	246 (78.59%)	62 (19.82%)	0 (0.00%)	0 (0.00%)	313 (100%)
Technicians and others	0 (0.00%)	175 (95.62%)	0 (0.00%)	8 (4.38%)	0 (0.00%)	183 (100%)
Total	18 (3.40%)	435 (82.23%)	68 (12.85%)	8 (1.52%)	0 (0.00%)	529 (100%)

Chi Square Value: 1.969, P Value: 0.00



**v. Level of effectiveness of Leadership in dealing with changes in Organisation:**

Category	Excellent	Good	Average	Poor	Very Poor	Total
Organisation Executives	23 (69.69%)	10 (30.30%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	30 (9.58%)	138 (44.08%)	143 (45.69%)	2 (0.65%)	0 (0.00%)	313 (100%)
Technicians and others	53 (28.96%)	90 (49.18%)	40 (21.86%)	0 (0.00%)	0 (0.00%)	183 (100%)
Total	106 (20.04%)	238 (44.99%)	183 (34.59%)	2 (0.38%)	0 (0.00%)	529 (100%)

Chi Square Value: 61.298, P Value: 0.00

**vi. Rate the Influence of Leadership on Individual Performance:**

Category	Excellent	Good	Average	Poor	Very Poor	Total
Organisation Executives	29 (87.87%)	4 (12.13%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	14 (4.47%)	247 (78.91%)	52 (16.62%)	0 (0.00%)	0 (0.00%)	313 (100%)
Technicians and others	0 (0.00%)	173 (94.53%)	0 (0.00%)	10 (5.47%)	0 (0.00%)	183 (100%)
Total	43 (8.12%)	424 (80.15%)	52 (9.84%)	10 (1.89%)	0 (0.00%)	529 (100%)

Chi Square Value: 3.569, P Value: 0.00

**vii. Rate the Influence of Leadership on Organisational Performance:**

Category	Excellent	Good	Average	Poor	Very Poor	Total
Organisation Executives	10 (30.30%)	12 (36.36%)	11 (32.34%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	38 (12.15%)	144 (46.00%)	110 (35.15%)	21 (6.70%)	0 (0.00%)	313 (100%)
Technicians and others	0 (0.00%)	129 (70.49%)	54 (29.51%)	0 (0.00%)	0 (0.00%)	183 (100%)
Total	48 (9.08%)	285 (53.87%)	175 (33.08%)	21 (3.97%)	0 (0.00%)	529 (100%)

Chi Square Value: 7.435, P Value: 0.00

**viii. Rate expertise of Leadership of the Company:**

Category	Excellent	Good	Average	Poor	Very Poor	Total
Organisation Executives	29 (87.87%)	4 (12.13%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	16 (5.12%)	271 (86.58%)	26 (8.30%)	0 (0.00%)	0 (0.00%)	313 (100%)
Technicians and others	0 (0.00%)	152 (83.06%)	0 (0.00%)	31 (16.94%)	0 (0.00%)	183 (100%)
Total	45 (8.50%)	427 (80.71%)	26 (4.93%)	31 (5.86%)	0 (0.00%)	529 (100%)

Chi Square Value: 2.220, P Value: 0.02



**ix. Job Description of Leaders clearly been informed:**

Category	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Organisation Executives	23 (69.69%)	10 (30.31%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	31 (9.92%)	242 (77.31%)	40 (12.77%)	0 (0.00%)	0 (0.00%)	313 (100%)
Technicians and others	55 (30.05%)	94 (51.36%)	34 (18.57%)	0 (0.00%)	0 (0.00%)	183 (100%)
Total	109 (20.62%)	346 (65.40%)	74 (13.98%)	0 (0.00%)	0 (0.00%)	529 (100%)

Chi-square: 1.562. P-value: 0.000

**x. Helping to strengthen knowledge and skills of employees through effective Leadership:**

Category	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Organisation Executives	13 (39.40%)	10 (30.30%)	10 (30.30%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	17 (5.43%)	243 (71.65%)	30 (9.58%)	23 (7.34%)	0 (0.00%)	313 (100%)
Technicians and others	0 (0.00%)	79 (43.18%)	77 (42.08%)	21 (11.47%)	6 (3.27%)	183 (100%)
Total	30 (5.67%)	332 (62.75%)	117 (22.12%)	44 (8.32%)	6 (1.14%)	529 (100%)

Chi-square: 1.823. P-value: 0.000

**xi. Helping to access for technological development through Leadership:**

Category	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Organisation Executives	29 (87.87%)	4 (12.13%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	23 (7.35%)	240 (76.68%)	41 (13.09%)	9 (2.88%)	0 (0.00%)	313 (100%)
Technicians and others	0 (0.00%)	161 (87.97%)	0 (0.00%)	22 (12.03%)	0 (0.00%)	183 (100%)
Total	52 (9.83%)	405 (78.55%)	41 (7.76%)	31 (5.86%)	0 (0.00%)	529 (100%)

Chi-square: 49.515. P-value: 0.000



**xii. Employees turnover is effected because of Leadership:**

Category	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Organisation Executives	26 (78.78%)	7 (32.22%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	32 (10.23%)	245 (78.27%)	36 (11.50%)	0 (0.00%)	0 (0.00%)	313 (100%)
Technicians and others	39 (21.31%)	93 (50.81%)	47 (25.68%)	4 (2.18%)	0 (0.00%)	183 (100%)
Total	97 (18.33%)	345 (65.23%)	83 (15.68%)	4 (0.76%)	0 (0.00%)	529 (100%)

Chi-square: 2.801. P-value: 0.000

**xiii. Pleasure in working and sharing workplace issues in Leadership:**

Category	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Organisation Executives	25 (75.75%)	8 (24.25%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	5 (1.59%)	236 (75.39%)	70 (22.38%)	2 (0.64%)	0 (0.00%)	313 (100%)
Technicians and others	0 (0.00%)	105 (57.37%)	78 (42.03%)	0 (0.00%)	0 (0.00%)	183 (100%)
Total	30 (5.67%)	349 (65.97%)	148 (27.98%)	2 (0.38%)	0 (0.00%)	529 (100%)

Chi-square: 1.620. P-value: 0.000

**xiv. Leadership obstructing in creating standardized HR Practices:**

Category	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Organisation Executives	12 (36.32%)	16 (48.48%)	5 (15.16%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	88 (28.12%)	172 (54.95%)	53 (16.93%)	0 (0.00%)	0 (0.00%)	313 (100%)
Technicians and others	0 (0.00%)	161 (87.97%)	0 (0.00%)	22 (12.03%)	0 (0.00%)	183 (100%)
Total	100 (18.90%)	349 (65.97%)	58 (10.97%)	22 (4.16%)	0 (0.00%)	529 (100%)

Chi-square: 2.421. P-value: 0.000



**xv. Leadership helping to reduce the Staff shortage problem:**

Category	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Organisation Executives	26 (78.78%)	6 (18.18%)	1 (3.04%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	97 (30.99%)	156 (49.85%)	41 (13.09%)	19 (6.07%)	0 (0.00%)	313 (100%)
Technicians and others	8 (4.38%)	126 (68.85%)	35 (19.12%)	14 (7.65%)	0 (0.00%)	183 (100%)
Total	131 (24.76%)	288 (54.45%)	77 (14.55%)	33 (6.24%)	0 (0.00%)	529 (100%)

Chi-square: 64.626. P-value: 0.000

**xvi. Fault Leadership Leads to decrease in Employee Morale:**

Category	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Organisation Executives	28 (84.85)	5 (15.15)	0 (0.00%)	0 (0.00%)	0 (0.00%)	33 (100%)
Operations staff	23 (7.35)	230 (73.48)	59 (18.85)	1 (0.32)	0 (0.00%)	313 (100%)
Technicians and others	10 (5.46)	147 (86.33)	19 (10.38)	7 (3.83)	0 (0.00%)	183 (100%)
Total	61 (11.61)	382 (72.21)	78 (14.74)	8 (1.52)	0 (0.00%)	529 (100%)

Chi-square: 58.301. P-value: 0.000

**H. MAJOR FINDINGS**

- Due to the impact of fault Leadership organization is unable to create standardized Leadership policies.
- A majority of respondents believe Leadership is preventing opportunities of new employees in the organization and also training for the employees.
- Due to lack of Leadership the operation expenses and operations cost is increasing.
- One of the interesting findings of the study is outsourced employees also are aware of Leadership Vision, Mission and core values of the organizations
- Identifying and communicating a clear Leadership vision is one of the most important functions organisation.
- It is observed from the analysis that majority of respondents opined Outsourced employees are good as organisational employees at anticipating problems that may come up in the future and understand what employer is trying to achieve in business management and customer satisfaction.
- In general Leadership wins more support among corporate facility executives.
- The respondents are positive above the quality of service from employees and they further opined employees are capable of dealing with changes in the organization with effective Leadership.
- The respondents opined the organisation has gained expertise due to Leadership.
- Leadership offers many advantages. For instance, allows companies to seek out and hire the best Leaders and experts for specialized work.
- Leadership of workforce affecting the talent pools which is built to address longer-term recruitment issues
- The study further reveals Leadership may affect some employees positively by upgrading their role and leads to decrease in employee morale to lower productivity and



finally possibly leading to increased employee turnover.

## I. SUGGESTIONS

- HR function's program is similar to all programs and policies, in that learning comes after implementation; therefore, evaluating and reviewing with 360-degree feedback in leadership will ensure a more holistic view and systematic evaluation of the success.
- Organisations should establish and keep an eye on evaluation system as a follow up activity after implementing the HR Policies, and need to evaluate how this HR and Leadership function process can be modeled to fit the overall business strategy and objectives so that focus is maintained and employees take the necessary ownership.
- Lack of attention to the Leadership process, unable to meet business requirements and time frames, and low service standards are all potential difficulties that could happen to any organisation if clear and specific contracts are not created hence it is advised Organisations should pay adequate attention over deals of Leadership.
- employee should be clearly defined with the scope of work, along with including contract cost, contract duration, defining performance measures, defining penalties, and defining evaluation proposals.
- Organisations must make sure that any knowledge or techniques used by the Leadership provider be transferred to the internal employees, otherwise organisations would lose internal skill, Leadership ability and knowledge.
- Care must be taken to ensure that employees perceive the benefits of Leadership in HR processes.

## J. CONCLUSION

HR managers will be able to focus more on strategic functions that add more value to the organisations. This can strengthen the potential Leadership abilities to make positive contribution to the business' success. The success of every industry depends upon the harmonious and healthy relations in the organisation good human resources practices are highly crucial for sustaining harmonious and healthy industrial relations, in addition to high productivity and greater efficiency and thereby organisational effectiveness. In this respect, organisation may transfer traditional functions to external vendors in order to

realise cost saving in terms of headcount reduction. The implication of this study is related to the impact of Leadership skills on HR practices while HR policies broadly understood to be an attractive option, its specific impact on performance and value that helps for development of organisation.

## K. SCOPE FOR FURTHER RESEARCH

The implication of this study is related to the impact of Leadership skills and practices while HR is broadly understood to be an attractive option, its specific impact on performance and value. In contrast, positive HR performance was achieved when it was associated to a higher reliance on leadership's traditional HR functions. Nowadays organizations are more relying on the external sources to get best by having lower cost and lower quantity of employees. So it is highly recommended that further researches must be conducted related to the HR outsourcing in leadership that gives more insight about the Leadership styles and techniques, methods and its long term effects on the organization's performance.

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# PERISHABLE INVENTORY MODEL WITH FINITE RATE OF REPLENISHMENT HAVING GENERALIZED PARETO DECAY

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## ABSTRACT

*In this paper an EPQ model for deteriorating items is developed and analyzed an inventory model for deteriorating items with the assumptions that the lifetime of the commodity is random and follows a Generalized Pareto distribution, having constant demand rate with shortages. The total cycle length in this model is divided into our non-overlapping intervals depending on the decrease of stock. Assuming that shortages are allowed and fully backlogged, the differential equations governing the instantaneous state of inventory are developed and solved for  $I(t)$ . The loss due to deterioration, the total backlogged demand, the ordering quantity is also derived with suitable cost consideration. The total profit per unit time is developed and optimized with respect to the time at which production is to be started, time at which shortages occur, the time at which production is to be restarted. The optimal ordering quantity,  $Q$  is also obtained for given values of the parameters. A numerical illustration is presented. This model also includes some of the earlier models as particular cases for specific values of the parameters.*

**KEYWORDS:** *Random Replenishment; Generalized Pareto Decay; Constant Demand; Shortages.*

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## 1. INTRODUCTION

Inventory modeling is a very important subject in logistics. Reducing cost while maintaining a quality is vital aspect for any organization. Having a solid inventory strategy could not only save company lots of money, but might be the difference between not being able to compete against the competition and having a well-known position in the market segment. However, relatively little consideration has been devoted to the inventory modeling of perishable goods. Dealing with perishable goods, particularly in the food industry, appears to be a significant problem.

However in many practical situations arising at places like oil and natural gas industries, chemical industries the life time of commodity is random and having variable rate of decay. Hence in this an inventory model for deteriorating items with finite rate of replenishment with the assumption that the lifetime of the commodity is random and follows a Generalized Pareto distribution with constant demand is developed and analyzed.

Using the differential equations the instantaneous state of inventory is obtained with suitable cost considerations. The total cost per unit time and profit rate functions are derived. The optimal ordering policy of the



system is also obtained. The sensitivity of the model with respect to the parameters and costs are discussed with numerical values.

## REVIEW OF LITERATURE

In the research paper titled “An EOQ model for deteriorating items with time varying demand and partial backlogging” classical economic order quantity model, it is often assumed that the shortages are either completely backlogged or completely lost. However, in some inventory systems, it is more reasonable to assume that the backlogging rate is dependent on the length of the waiting time for the next replenishment. The longer the waiting time is, the smaller the backlogging rate would be. In this paper, researchers focus on the effect of the backlogging rate on the economic order quantity decision. Numerical examples are presented to illustrate the model.

Moncer Hariga (1996) “Optimal EOQ Models for Deteriorating Items with Time-Varying Demand” in this paper, optimal inventory lot-sizing models are developed for deteriorating items with general continuous time-varying demand over a finite planning horizon and under three replenishment policies. The deterioration rate is assumed to be a constant fraction of the on-hand inventory. Shortages are permitted and are completely backordered. The proposed solution procedures are shown to generate global minimum replenishment schedules for both general increasing and decreasing demand patterns. An extensive empirical comparison using randomly generated linear and exponential demands revealed that the replenishment policy which starts with shortages in every cycle is the least cost policy and the replenishment policy which prohibits shortages in the last cycle exhibited the best service level effectiveness.

Ali Akbar Shaikh et al., (2019) “Price discount facility in an EOQ model for deteriorating items with stock-dependent demand and partial backlogging” in their study observed economic order quantity (EOQ) models are cloistered by considering as constant not only the purchase cost (irrespective of the order size of the product) but also the carrying cost during the entire cycle period. However, the unit purchase cost has an antagonistic relationship with the order size, and the carrying cost has a commensurate relationship with the storage time-period of the product, that is, the higher the order size, the lower the unit purchase cost, and the longer the storage time-period, the greater carrying cost per unit. Also deterioration is another imperative issue in inventory analysis as it has a huge impact on profit or cost of the inventory system.

Liao, J., Huang, K., Chung, K. et al. (2020) Opined economic order quantity (EOQ) model has been used extensively over a century. This research paper is concerned with the finding of the optimal replenishment cycle time for the inventory issues where items received are partly with imperfect quality and involve deterioration after the inspection time. Also for financial safety, for the supplier, when the permissible delay in payments can promote their sales and reduce their on-hand stock level. In order to minimize the total relevant inventory cost, mathematical theorems have been developed to determine the existence and the uniqueness of the optimal solution. Numerical calculations and illustrations demonstrate the application and the performance of the proposed theories in this research paper.

Zhou, Y., Chen, C., Li, C., Zhong, Y.: “A synergic economic order quantity model with trade credit, shortages, imperfect quality and inspection errors” researchers developed a synergic economic order quantity (EOQ) model, in which trade credit, shortages, imperfect quality and inspection errors are taken into consideration simultaneously. We prove that the objective function of annual profit is strictly concave and show the closed-form optimal solution to the model. In special cases, some related EOQ models can be derived from our model, which they illustrate with numerical examples. Managerial implications are also proposed in this research.

Shin, M., Lee, H., Ryu, K., Cho, Y., & Son, Y. J. (2019). “A two-phased perishable inventory model for production planning in a food industry” in their paper paper, a two-phased perishable inventory model for a food industry is proposed, where the inventory is perishable, but can be renewed by additional processing. The proposed model is applied and demonstrated with a kimchi processing facility in Korea. Two heuristic solution methods for generating its inventory management plan are also presented along with computational experiments.

Janssen, L., Sauer, J., Claus, T., & Nehls, U. (2018). “Development and simulation analysis of a new perishable inventory model with a closing days constraint under non-stationary stochastic demand” developed a new age-based inventory model with a closing days constraint. This stochastic multi-item inventory model includes total stock capacity constraints, a positive lead time, a periodic inventory control, a target customer service level and mixed FIFO and LIFO issuing policies for perishable items with a fixed lifetime under a non-stationary random demand.

Saranya, N., & Lawrence, A. S. (2019). “A stochastic inventory system with replacement of perishable items” researchers presents a continuous review perishable inventory system in which the perished items will be replaced by the supplier at a later time. Demands occur according to a Markov arrival process. The items in the



inventory have exponential life times and these perished items are stored in a place, called pool for replacement. The  $(s, S)$  ordering policy is adopted. At the time of placing an order, the ordering quantity is adjusted with number of items in the pool. The lead time is assumed to have phase type distribution. The joint probability distribution of the inventory level and the number of pooled items is obtained in the steady state case using the matrix-geometric methods. Various system performance measures in the steady state are derived and the total expected cost rate is calculated under a prefixed cost structure.

Mandal, D., & Venkataraman, S. V. (2019). "A dynamic programming model for perishable inventory management" develops a model which reduces such costs and hence increases the overall profit; researchers classify the entire lifetime of the products into two periods: in the first period a customer derives a higher utility from the product than from the second. In the traditional models discussed in literature, the net profit which is the difference between selling price and overall costs is maximised. Through this research, researchers propose a modification of this traditional model by varying the preferences of the product and hence its price over time.

Bhuala, B., Dash, J. K., & Kumar, M. R. (2019) "An optimal inventory model for perishable items under successive price discounts with permissible delay in payments" derives an optimal ordering policy for non-instantaneously deteriorating items under successive price discounts with delay in payments. Here successive price discounts is a strategy to sell almost all the items before decomposition.

Waliv, R. H., & Umap, H. P. (2019) "Stochastic inventory model with income and price dependent demand" in this paper a multi-item cost minimising stochastic inventory model is developed in stochastic environment. Demand is considered to be function of income level of consumer and price of commodity. Budget, income and price are assumed to be random and their randomness is expressed by normal distribution. Deterioration rate is modelled using Weibull distribution. Stochastic inventory model is converted into equivalent crisp inventory model by using stochastic nonlinear programming (SNLP) technique. Crisp problem is solved by fuzzy nonlinear programming (FNLP) technique and intuitionistic fuzzy optimisation (IFO) technique.

Saha, S., & Sen, N. (2019) "An inventory model for deteriorating items with time and price dependent demand and shortages under the effect of inflation" this research paper presents an inventory model with selling price and time dependent demand, constant holding cost and time dependent deterioration. In this model, shortages are assumed to be partially backlogged. It is designed keeping in mind to optimise total inventory cost under the effect of inflation. For the solution of the model, an algorithm is proposed and illustrated with numerical values of system parameters. The optimal results are also presented graphically. Finally, sensitivity analysis is performed for different parametric values of system parameters.

## 2. NOTATIONS AND ASSUMPTIONS

### 2.1 Notations

- Q: The ordering quantity in one cycle.
- C: The cost per unit.
- h: Inventory holding cost per unit per unit time.
- $\pi$ : The shortage cost per unit per unit time.
- s: Selling price of a unit.
- R: Demand Rate ( $< k$ )

### 2.2 Assumptions

1. The demand rate is known
2. The lead time is zero
3. T, the fixed duration of production cycle is known
4. k, the production rate finite
5. Shortages are allowed and fully backlogged
6. Cost of placing an order is zero.

## 3. INVENTORY MODEL WITH SHORTAGES

Consider an inventory system in which the lifetime of commodity is random and follows a Generalized Pareto distribution having the probability density function

$$f(t) = \begin{cases} \frac{1}{a} \left(1 - \frac{ct}{a}\right)^{\frac{1}{c}-1} & c \neq 0 \\ \frac{1}{a} e^{-\frac{t}{a}} & c = 0 \end{cases}$$

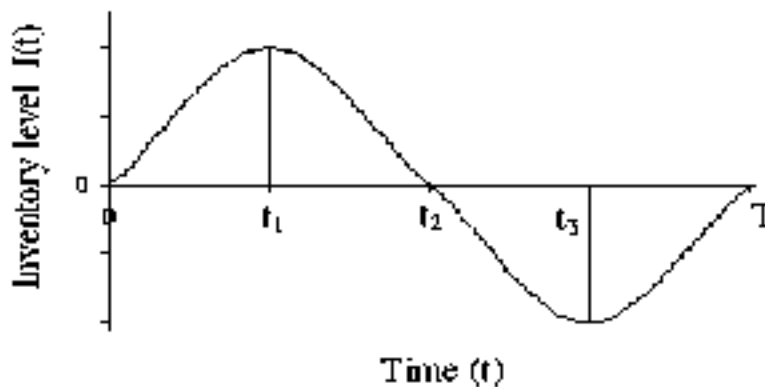
The range of  $t$  is  $0 \leq t < \infty$  for  $c \leq 0$  and  $0 \leq t \leq a/c$  for  $c > 0$

Where  $c$  is the shape parameter and  $a$  is the scale parameter.

Hence the instantaneous rate of deterioration  $h(t)$  is

$$h(t) = \frac{1/a \left\{1 - \frac{ct}{a}\right\}^{\frac{1}{c}-1}}{\left(1 - \frac{ct}{a}\right)^{1/c}} = \frac{1}{a - ct} \tag{1}$$

The amount of stock is zero at time  $t = 0$ . Production starts at  $t=0$  and stops at  $t = t_1$ . The stock attains a level  $S$  at  $t = t_1$ . During  $(t_1, t_2)$  the inventory level gradually decreases mainly to meet up the demand and partly due to deterioration. By this process the stock reaches zero level at  $t = t_2$ . Now storages occur and accumulate to the level  $P$  at  $t = t_3$ . Production starts again at  $t = t_3$  and backlog is cleared at  $t = T$ . The cycle then repeats itself after time  $T$ . The schematic diagram showing the inventory level over time is given in figure (2.1).



Let  $I(t)$  be the inventory level at time  $t$  ( $0 \leq t \leq T$ ). Then the differential equations describing the instantaneous state of  $I(t)$  over the cycle of length  $T$  are

$$\frac{d}{dt} I(t) + h(t) I(t) = k - R \quad \text{for} \quad 0 \leq t \leq t_1 \tag{2}$$

$$\frac{d}{dt} I(t) + h(t) I(t) = -R \quad \text{for} \quad t_1 \leq t \leq t_2 \tag{3}$$



$$\frac{d}{dt} I(t) = -R, \quad \text{for } t_2 \leq t \leq t_3 \quad (4)$$

$$\frac{d}{dt} I(t) = k - R, \quad \text{for } t_3 \leq t \leq T \quad (5)$$

With initial conditions  $I(0) = 0$ ;  $I(t_1) = S$ ;  $I(t_2) = 0$ ;  $I(t_3) = -P$ ;  $I(T) = 0$ .

Substituting  $h(t)$  from equation (1) in equations (2) and (3) and solving the above differential equations, the on hand inventory at time  $t$  can be obtained as

$$I(t) = \frac{(k - R)}{1 - c} \left[ (a - ct) - a^{1-1/c} (a - ct_1)^{1/c} \right], \quad 0 \leq t \leq t_1 \quad (6)$$

$$I(t) = \frac{R}{1 - c} \left[ (a - ct)^{1/c} (a - ct_2)^{-1/c} - (a - ct) \right], \quad t_1 \leq t \leq t_2 \quad (7)$$

$$I(t) = -R(t - t_2), \quad t_2 \leq t \leq t_3 \quad (8)$$

$$I(t) = -(k - R)(T - t), \quad t_3 \leq t \leq T \quad (9)$$

The stock loss due to deterioration in the interval  $(0, T)$  is

$$L(T) = k t_1 - R t_2 \quad (10)$$

The backlogged demand at time  $t$  in the interval  $(t_2, t_3)$

$$B(t) = R(t - t_2) \quad t_2 \leq t \leq t_3 \quad (11)$$

The ordering quantity  $Q$  in a cycle of length  $T$  is obtained as

$$Q = k(T + t_1 - t_3) \quad (12)$$

Let  $K(t_1, t_2, t_3, T)$  be the total cost per unit time. Since the total cost is the sum of the cost of the units, the inventory holding cost and shortage cost,  $K(t_1, t_2, t_3, T)$  is obtained as

$$K(t_1, t_2, t_3, T) = \frac{CQ}{T} + \frac{h}{T} \left[ \int_0^{t_1} I(t) dt + \int_{t_1}^{t_2} I(t) dt \right] + \frac{\pi}{T} \left\{ \int_{t_2}^{t_3} I(t) dt + \int_{t_3}^T I(t) dt \right\} \quad (13)$$

Substituting, the equations (2.2.6), (2.2.7), (2.2.8), (2.2.9) and (2.2.12) in the equation (2.2.13), the total cost per unit time is obtained as

$$K(t_1, t_2, t_3, T) = \frac{Ck}{T} (T + t_1 - t_3) + \frac{h}{T} \left\{ \int_0^{t_1} \frac{(k - R)}{1 - c} \left[ (a - ct) - a^{1-1/c} (a - ct)^{1/c} \right] dt + \int_{t_1}^{t_2} \frac{R}{1 - c} \left[ (a - ct)^{1/c} (a - ct_2)^{1-1/c} - (a - ct) \right] dt \right\}$$

$$+ \frac{\pi}{T} \left\{ \int_{t_2}^{t_3} R(t-t_2).dt + \int_{t_3}^T (k-R)(T-t)dt \right\} \quad (14)$$

On Integrating, we obtain K (t<sub>1</sub>, t<sub>2</sub>, t<sub>3</sub>, T) as

$$\begin{aligned} K(t_1, t_2, t_3, T) &= \frac{Ck}{T} (T + t_1 - t_3) \\ &+ \frac{h}{T(1-c)} \left\{ (k-R) \left[ at_1 - \frac{ct_1}{2} + a^{1-1/c} \frac{(a-ct_1)^{1/c+1}}{1+c} - \frac{a^2}{1+c} \right] \right. \\ &+ R \left[ \frac{c}{2} (t_2^2 - t_1^2) - a(t_2 - t_1) \right] \\ &- \frac{1}{1+c} \left[ (a-ct_2)^2 - (a-ct_1)^{1+1/c} (a-ct_2)^{1-1/c} \right] \left. \right\} \\ &+ \frac{\pi}{2T} \left\{ R(t_3 - t_2)^2 + (k-R)(T - t_3)^2 \right\} \end{aligned} \quad (15)$$

The profit rate function P (t<sub>1</sub>, t<sub>2</sub>, t<sub>3</sub>, T, s) can be written as

$$P(t_1, t_2, t_3, T, s) = \frac{sRt_3}{T} - K(t_1, t_2, t_3, T) \quad (16)$$

Substituting the equation (2.2.15) in equation (2.2.16) the profit rate function of the model can be obtained as

$$\begin{aligned} P(t_1, t_2, t_3, T, s) &= \frac{sRt_3}{T} - \frac{Ck}{T} (T + t_1 - t_3) \\ &- \frac{h}{T(1-c)} \left\{ (k-R) \left[ at_1 - \frac{ct_1^2}{2} + \frac{a^{1-1/c} (a-ct_1)^{1+1/c}}{1+c} - \frac{a^2}{1+c} \right] \right. \\ &+ R \left[ \left[ \frac{c}{2} (t_2^2 - t_1^2) - a(t_2 - t_1) \right] - \frac{1}{1+c} \left[ (a-ct_2)^2 - (a-ct_1)^{1+1/c} (a-ct_2)^{1-1/c} \right] \right] \left. \right\} \\ &- \frac{\pi}{2T} \left\{ R(t_3 - t_2)^2 + (k-R)(T - t_3)^2 \right\} \end{aligned} \quad (17)$$

#### 4. OPTIMAL ORDERING POLICY OF THE MODEL

In this section the optimal ordering policy of the inventory system developed in section (2) is obtained. To find the optimal values of t<sub>1</sub>, t<sub>2</sub>, t<sub>3</sub>, we equate the first order partial derivatives of P(t<sub>1</sub>, t<sub>2</sub>, t<sub>3</sub>, T, s) with respect to t<sub>1</sub>, t<sub>2</sub> and t<sub>3</sub> to zero respectively.

By differentiating P(t<sub>1</sub>, t<sub>2</sub>, t<sub>3</sub>, s) w.r.t to t<sub>1</sub> and equating to zero. we get,



$$Ck + \frac{h}{1-c} \left\{ (k-R) \left[ (a-ct_1) - a^{1-1/c} (a-ct_1)^{1/c} \right] + R \left[ (a-ct_1) - (a-ct_2)^{1-1/c} (a-ct_1)^{1/c} \right] \right\} = 0 \quad (18)$$

By differentiating P(t<sub>1</sub>, t<sub>2</sub>, t<sub>3</sub>, T, s) with respect to t<sub>2</sub> and equating to zero, we get

$$\frac{h}{1+c} \left\{ (ct_2 - a) + (a-ct_1)^{1+1/c} (a-ct_1)^{-1/c} \right\} - \pi \{t_3 - t_2\} = 0 \quad (19)$$

By differentiating P(t<sub>1</sub>, t<sub>2</sub>, t<sub>3</sub>, T, s) with respect to t<sub>3</sub> and equating to zero, we get

$$sR + Ck + \pi [k(T - t_3) - R(T - t_2)] = 0 \quad (20)$$

By solving the equations (18), (19) and (20) simultaneously, the optimal time at which the production is to be stopped t<sub>1</sub><sup>\*</sup> of t<sub>1</sub>, the time at which shortages will start t<sub>2</sub><sup>\*</sup> of t<sub>2</sub>, and the optimal time at which the production should be restarted, t<sub>3</sub><sup>\*</sup> of t<sub>3</sub> can be obtained.

### 5. NUMERICAL ILLUSTRATIONS

As a numerical illustration the optimal values t<sub>1</sub><sup>\*</sup>, t<sub>2</sub><sup>\*</sup>, t<sub>3</sub><sup>\*</sup>, P and Q are obtained for given values of the parameters .

**TABLE 1**  
**Optimal values of production time, time at which shortages occur, time at which production is restarted, profit and optimal ordering quantity (when c is positive)**

a	c	k	h	R	π	C	s	T	t <sub>1</sub> <sup>*</sup>	t <sub>2</sub> <sup>*</sup>	t <sub>3</sub> <sup>*</sup>	P	Q <sup>*</sup>
200	0.4	100	0.25	60	0.1	5	15	500	150.82946	223.72147	474.2328	27.512	17659
201									150.36042	223.4474	474.068	27.4188	17629
202									149.90228	223.18107	473.908	27.3283	17599
203									149.4546	222.922	473.753	27.240	17570
200	0.41	100	0.25	60	0.1	5	15	500	151.189	223.76192	474.2571	27.403	17693
	0.42								151.555	223.800	474.28	27.29	17727
	0.43								151.928	223.83	474.30	27.17	17762
200	0.4	101	0.25	60	0.1	5	15	500	146.123	219.78	472.64	21.492	17521
		102							141.7423	216.13	471.25	15.71	17389
		103							137.64818	212.731	470.037	10.152	17263
200	0.4	100	0.26	60	0.1	5	15		144.86442	216.625	469.975	17.007	17488
			0.27						139.377	209.999	465.99	7.084	17337
			0.275						136.794	206.84	464.107	2.326	17268
200	0.4	100	0.25	61	0.1	5	15	500	159.374	230.37	477.35	38.58	18201
				62					168.85903	238.95	481.149	50.458	18770
				63					179.5389	248.059	485.77	63.226	19376
200	0.4	100	0.25	60	0.09	5	15	500	139.702	211.77	482.62	68.40	15708
					0.08				128.5645	199.529	494.717	116.42	13384
					0.07				117.397	186.94	512.166	174.00	10523
200	0.4	100	0.25	60	0.1	5.1			149.908	223.11	474.86	23.99	17504
						5.5			146.289	220.74	477.44	10.24	16884
						6.0			144.51	219.58	478.75	3.548	16576
200	0.4	100	0.25	60	0.1	5	15.5		153.88	226.95	479.17	56.11	17471
							16		157.018	230.24	484.14	85.13	17287
							16.5		160.2314	233.601	489.16	114.21	17107



**Table 2**  
**Optimal values of production time, time at which shortages occur, time at which production is restarted, profit and optimal ordering quantity (when c is negative)**

a	c	K	H	R	$\pi$	C	s	T	$t_1^*$	$t_2^*$	$t_3^*$	P	$Q^*$
200	-8	100	0.25	60	0.1	5	15	500	112.41591	211.45826	466.87496	29.94	14554
201									112.4037	211.44916	466.8695	29.92	14553
202									112.39152	211.4401	466.86406	29.91	14552
203									112.37939	211.4310	466.858	29.90	14551
200	-6	100	0.25	60	0.1	5	15	500	114.19147	212.301	467.381	30.370	14681
-5									115.43	212.8736	467.724	30.62	14770
-4									117.057	213.60	468.1616	30.89	14889
200	-8	101	0.25	60	0.1	5	15	500	110.1067	209.696	466.6514	25.48	14489
102		107.8902							208.016	466.4802	21.15	14423	
103		105.7605							206.412	466.356	16.95	14358	
200	-8	100	0.26	60	0.1	5	15	500	109.478	205.602	463.361	19.47	14611
0.27			106.683						200.059	460.035	9.5	14664	
0.28			104.021						194.805	456.88	0.2	14713	
200	-8	100	0.25	61	0.1	5	15	500	116.41972	214.539	467.369	38.18	14905
62				120.5798					217.77	468.02	46.85	15255	
63				124.908					221.180	468.843	55.94	15606	
200	-8	100	0.25	60	0.09	5	15	500	106.852	202.634	477.13	72.31	12971
0.08									100.9418	193.25	490.954	121.4	10998
0.07									94.653	183.27	509.965	179.7	8468
200	-8	100	0.25	60	0.1	5.1	15	500	111.99	211.42	467.85	27.04	14414
5.5						110.33			211.269	471.761	15.73	13857	
6						108.258			211.08	476.648	2.22	13160	
200	-8	100	0.25	60	0.1	5	15.5	500	113.819	213.68	471.210	58.08	14260
16.0							115.22		215.910	475.54	86.48	13967	
16.5							116.62		218.13	479.88	115.1	13674	

From Tables 1 & 2 we observe that when the scale parameter, a is increasing then the optimal time at which production is to be stopped,  $t_1^*$  of  $t_1$ , the time at which shortages will start,  $t_2^*$  of  $t_2$ , the optimal time at which the production should be restarted,  $t_3^*$  of  $t_3$ , the profit per unit time, P and the optimal ordering quantity,  $Q^*$  of Q are decreasing for a given Cycle length T, when other parameters and costs are fixed.

When the shape parameter, c is increasing positively or negatively then the optimal time at which the production is to be stopped,  $t_1^*$  of  $t_1$ , the optimal ordering quantity  $Q^*$  of Q, the time at shortages will start,  $t_2^*$  of  $t_2$ , the optimal time at which the production should be restarted,  $t_3^*$  of  $t_3$  are increasing the profit per unit time, P is decreasing for a given cycle length T, when other parameters and costs are fixed.

When production rate k is increasing, then the optimal time at which production is to be stopped,  $t_1^*$  of  $t_1$ , the time at which shortages will start,  $t_2^*$  of  $t_2$ , the optimal time at which the production should be restarted,  $t_3^*$  of  $t_3$ , the profit per unit time, P and the optimal ordering quantity,  $Q^*$  of Q are decreasing for a given Cycle length T, when other parameters and costs are fixed.

When holding cost, h is increasing, then the optimal time at which production is to be stopped,  $t_1^*$  of  $t_1$ , the time at which shortages will start,  $t_2^*$  of  $t_2$ , the optimal time at which production should be started,  $t_3^*$  of  $t_3$ , the profit per unit time, P, are decreasing for a given cycle length T, but the optimal ordering quantity  $Q^*$  of Q is decreasing when  $c > 0$  and the optimal ordering quantity  $Q^*$  of Q is increasing when  $c < 0$ , when other parameters and costs are fixed.

When the demand rate, R is increasing then the optimal time at which production is to be stopped,  $t_1^*$  of  $t_1$ , the time at which shortages will start,  $t_2^*$  of  $t_2$ , the optimal time at which production should be started,  $t_3^*$  of  $t_3$ , the profit per unit time, P, the optimal ordering quantity  $Q^*$  of Q are increasing, when other parameters and costs are fixed.

When shortage cost,  $\pi$  is increasing then the optimal time at which production should be stopped,  $t_1^*$  of  $t_1$ , the time at which shortages will start,  $t_2^*$  of  $t_2$ , the optimal ordering quantity,  $Q^*$  of Q are increasing and the time at which the production is to be restarted  $t_3^*$  of  $t_3$  and profit per unit time, P are decreasing for a given cycle length, T, when other parameters and costs are fixed.

When unit cost, C is increasing then the optimal time at which production should be stopped  $t_1^*$  of  $t_1$ , the time at which shortages will start,  $t_2^*$  of  $t_2$ , profit per unit time, P, the optimal ordering quantity  $Q^*$  of Q are





decreasing and the time at which production should be restarted,  $t_3^*$  of  $t_3$  is increasing, for a given cycle length,  $T$ , when other parameters and costs are fixed.

When unit selling price,  $s$  is increasing then the optimal time at which production should be stopped,  $t_1^*$  of  $t_1$ , the time at which shortages will start,  $t_2^*$  of  $t_2$ , the optimal time at which the production should be restarted,  $t_3^*$  of  $t_3$ , the profit per unit time,  $P$  are increasing and the optimal ordering quantity,  $Q^*$  of  $Q$  is decreasing for a given cycle length,  $T$ , when other parameters and costs are fixed.

## 6. INVENTORY MODEL WITHOUT SHORTAGES

In this section the model without shortages is developed and analyzed. For developing model under study, we take  $\pi \rightarrow \infty$  and  $t_2 \rightarrow T$ . The differential equations governing the instantaneous state of inventory level of the system at time  $t$  of the model are

$$\frac{d}{dt}I(t) + h(t)I(t) = k - R \quad , \quad 0 \leq t \leq t_1 \quad (21)$$

$$\frac{d}{dt}I(t) + h(t)I(t) = -R \quad , \quad 0 \leq t \leq T \quad (22)$$

with initial conditions  $I(0) = 0, I(T) = 0$

The on hand inventory level at time  $t$  is

$$I(t) = \frac{k - R}{1 - c} \left[ (a - ct) - a^{1-1/c} (a - ct)^{1/c} \right] \quad (23)$$

$$I(t) = \frac{R}{1 - c} \left[ (a - ct)^{1/c} (a - cT)^{1-1/c} - (a - ct) \right] \quad (24)$$

The stock loss due to deterioration in the interval  $(0, T)$  is

$$L(T) = k t_1 - R T \quad (25)$$

The ordering quantity in a cycle of length  $T$  is obtained as

$$Q = k t_1 \quad (26)$$

The total cost per unit time  $K(t_1, T)$  is

$$K(t_1, T) = \frac{C k t_1}{T} + \frac{h}{T(1-c)} \left\{ (k - R) \left[ a t_1 - \frac{c t_1^2}{2} + \frac{a^{1-1/c} (a - c t_1)^{1+1/c}}{1+c} - \frac{a^2}{1+c} \right] \right. \\ \left. + R \left[ \left[ \frac{c}{2} (T^2 - t_1^2) - a(T - t_1) \right] - \frac{1}{1+c} \left[ (a - cT)^2 - (a - c t_1)^{1+1/c} (a - cT)^{1-1/c} \right] \right] \right\} \quad (27)$$

The profit rate function  $P(t_i, T_s)$  is



$$P(t_1, T, s) = sR - \frac{Ckt_1}{T} - \frac{h}{T(1-c)} \left\{ (k-R) \left[ at_1 - \frac{ct_1^2}{2} + \frac{a^{1-1/c}(a-ct_1)^{1+1/c}}{1+c} - \frac{a^2}{1+c} \right] \right. \\ \left. + R \left[ \left[ \frac{c}{2}(T^2 - t_1^2) - a(T - t_1) \right] - \frac{1}{1+c} \left[ (a-cT)^2 - (a-ct_1)^{1+1/c} (a-cT)^{1-1/c} \right] \right] \right\} \quad (28)$$

To find the optimal value of  $t_1$ , we equate the first order derivative of  $P(t_1, T, s)$  with respect to  $t_1$ , to zero.

By differentiating  $P(t_1, T, s)$  with respect to  $t_1$  and equating to zero, we get

$$Ck + \frac{h}{1-c} \left\{ (k-R) \left[ a - ct_1 - a^{1-1/c}(a-ct_1)^{1/c} \right] + R \left[ (a-ct_1) - (a-cT)^{1-1/c}(a-ct_1)^{1/c} \right] \right\} = 0 \quad (29)$$

By solving (29) the optimal time at which the production is to be stopped  $t_1^*$  of  $t_1$ , profit for unit time and optimal ordering quantity are computed for different values of the parameters and costs.

## 7. NUMERICAL ILLUSTRATION

As a numerical illustrations the optimal values of  $t_1^*$ ,  $Q^*$  are obtained for given values of parameters and costs using MATHCAD are computed and given in Table 3 for  $c > 0$ , and in Table 4 for  $c < 0$ .

**Table 3**  
**Optimal values of production time, profit and ordering quantity**  
**(when c is positive)**

a	c	k	h	R	C	s	T	$t_1^*$	P	$Q^*$
26	0.4	60	0.5	50	5	20	55	47.94	673.235	2876
27								47.28	673.14	2837
28								46.71	672.931	2803
25	0.42	60	0.5	50	5	20	55	48.781	671.394	2987
	0.43							50.478	670.037	3029
	0.44							51.403	667.969	3084
25	0.4	61	0.5	50	5	20	55	48.626	664.157	2966
		62						48.519	655.221	3008
		63						48.414	646.303	3050
25	0.4	60	0.6	50	5	20	55	49.351	661.23	2961
			0.7					49.828	649.846	2990
			0.8					50.209	638.798	3013
25	0.4	60	0.5	52	5	20	55	48.985	721.597	2939
				54				49.223	770.175	2953
				58				49.447	818.838	2967
25	0.4	60	0.5	55	5.5		55	48.386	646.625	2903
					6.0			48.054	620.324	2883
					6.5			47.736	594.2	2864
25	0.4	60	0.5	50	5	21	55	48.733	723.11	2924
						22		48.733	773.112	2924
						23		48.733	823.112	2924



**Table 4**  
**Optimal values of production time, profit and optimal ordering quantity (when c is negative)**

a	c	k	h	R	C	s	T	$t_1^*$	P	$Q^*$
25	-0.3	60	0.5	50	5	20	25	13.44	747.276	804.687
26								13.344	747.51774	800.61
27								13.279	7.748	796.739
28								13.218	747.97	793.058
25	-0.29	60	0.5	50	5	20	25	13.423	747.218	805.359
	-0.27							13.445	747.099	806.732
	-0.25							13.469	746.978	808.115
25	-0.3	61	0.5	50	5	20	25	13.159	743.111	802.692
		62						12.913	739.049	800.576
		63						12.672	735.086	798.343
25	-0.3	60	0.6	50	5	20	25	14.68	730.429	880.812
			0.7					15.624	715.99	937.42
			0.8					16.353	702.605	981.162
25	-0.3	60	0.5	52	5	20	25	14.019	787.586	891.16
				54				14.616	828.481	876.945
				56				15.201	869.938	912.071
25	-0.3	60	0.5	50	5.5	20	25	12.678	731.624	760.67
					6.0			11.964	761.841	717.834
					6.5			11.269	702.903	676.132
25	-0.3	60	0.5	50	5	21	25	13.411	797.276	804.687
						22		13.411	847.276	804.687
						23		13.411	897.276	804.687

From Tables 2.3 & 2.4, we observe that when the scale parameter, a is increasing, then the time at which production is to be stopped,  $t_1^*$  of  $t_1$ , optimal ordering quantity,  $Q^*$  of  $Q$ , are decreasing. But the profit per unit time, P is increasing when  $c > 0$  and P the profit per unit time is decreasing when  $c < 0$ , when other costs and parameters are fixed.

When the shape parameter, c is increasing positively or negatively then the optimal time at which the production is to be stopped,  $t_1^*$  of  $t_1$  and the optimal ordering quantity,  $Q^*$  of  $Q$  are increasing and the profit per unit time, P is decreasing, when other costs and parameters are fixed.

When holding cost, h is increasing then the optimal time at which production is to be stopped,  $t_1^*$  of  $t_1$ , and the optimal ordering quantities,  $Q^*$  of  $Q$  are increasing and the profit per unit time, P is decreasing, when other costs and parameters are fixed.

When the demand rate, R is increasing then the optimal time at which production is to be stopped  $t_1^*$  of  $t_1$ , and the optimal ordering quantities,  $Q^*$  of  $Q$ , and the profit per unit time, P are increasing, when other costs and parameters are fixed.

When cost per unit C, is increasing then the optimal ordering quantities,  $Q^*$  of  $Q$ , and the profit per unit time, P, the optimal time at which production is to be stopped  $t_1^*$  of  $t_1$  are decreasing, when other costs and parameters are fixed. When production rate, k is increasing then the optimal time at which production is to be stopped  $t_1^*$  of  $t_1$  is decreasing. But the profit per unit time, P and the optimal ordering quantities,  $Q^*$  of  $Q$  are increasing for  $c > 0$  and are decreasing for  $c < 0$ , when other costs and parameters are fixed.



When the unit selling price,  $s$  is increasing then the optimal time at which the production is to be stopped  $t_1^*$  of  $t_1$  and the optimal ordering quantity,  $Q^*$  of  $Q$  are remain the same and the profit per unit time,  $P$  is increasing, when other costs and parameters a fixed.

## CONCLUSIONS

In this paper we developed and analyzed an inventory model for deteriorating items with the assumptions that the lifetime of the community is random and follows a Generalized Pareto distribution, having constant demand rate with shortages. The total cycle length in this model is divided into our non-over lapping intervals depending on the decrease of stock. The losses due to deterioration, the total backlogged demand, the ordering quantity are also derived with suitable cost consideration. The total profit per unit time is developed and optimized with respect to the time at which production is to be started, time at which shortages occur, the time at which production is to be restated. The optimal ordering quantity,  $Q$  is also obtained for given values of the parameters. The without shortages model is also analyzed as a limiting case. The proposed model is much useful in developing the optimal pricing and ordering policies of an inventory situation in photochemical industries, food processing units, material handling, fruit and vegetable markets.

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## ROLE OF TRANSNATIONAL CORPORATIONS (TNCs) IN THE INTERNATIONAL TRADE

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### ABSTRACT

*The actual focus or key purpose of this document or research paper is to measure the role of transnational corporations (TNCs) in the international trade. Transnational corporations (TNCs) play a vital role of the world economics or trade sector it has a great value in aspects of world economy. If we analysis we can see on one side the globalization and regionalization capitalized lead the opportunity to build a very favorable situations for progress or development of TNCs, on the other sector there is companies strengthen this method by their export and foreign direct investment (FDI) technique method. So here the trading system that deals with out of boarder or beyond the territory line is interconnected and has a great role in economic growth and foreign direct investment.*

**KEYWORDS:** *transnational corporation (TNCs), international trade, economic growth, FDI*

### INTRODUCTION

In a globalized world, TNCs are playing a vital role, as well as in situation of integration, universalize and proliferation method, the action of transnational corporations is mainly focused on economic growth. The leading part of such entities or organization in the world economy raises the broader their presentation, especially since transnational companies (transnational corporations - TNCs) defined by different aspects and institution. 'the United Nations (UN) says, transnational corporation has wings and/or division with at least two countries, they minimum maintain more than one zone and create a management system to ensure implementation by the branch of the common strategies and policies, the linkage forms of subsidiaries which interact each other's'.<sup>2</sup>

'United Nations sets out the definition of transnational company, as an economic entity with legal personality or not having legal personality, composed of the mother company and its foreign affiliates'<sup>3</sup>.

The mode of characterized 'Transnational Corporations' are by: the political situation of the country does not give any extra opportunity; the authority contains of the circumstance that strategic decisions of TNCs are taken independent of the countries of investment. However, the Sovereignty, does not provide any protection of them against the risk of investment (more or less), because they need to depend on the economic growth conditions or the political condition of the country; as there always an up and down situation the extension of surface area or in a sense geographical spread.

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<sup>2</sup> United Nation Centre on Transnational Corporation, *Transnational Corporation in World Development*, New York 1983 s. 28.

<sup>3</sup> *World Investment Report 2000, Cross-border Mergers and Acquisitions and Development*, UNCTAD, Geneva 2000, s. 267.



Methodology and technology they use and human resources between division and corporate's offices- 'Involving the ability to carry out many operations simultaneously on different markets, in order to use the economic differences (in prices, in terms of production, resources, and in the tax regulations), the effect is the ability for high current or prospective performance'<sup>4</sup>.

### TRANSNATIONAL CORPORATIONS IN THE CURRENT WORLD

The vital part of transnational corporations in the current world economy stems not only of the theoretical foundations as well as the economic side. The mainly development of corporations has started in the fifties of the twenty centuries. The increase of amount of capital invested in different region of world was result of this situation.

"In the time of 1969, the world, have around 7,000 transnational corporations"<sup>5</sup>. "In 1992, more than 37 thousand TNCs, and around 200,000 remote offshoots, and in 1996 this figure had ascended to more than 44,500, which control in excess of 270 thousand auxiliaries, and in 2000 to more than 62 thousand and of 820 thousand its outside auxiliaries, and in 2008 the quantity of transnational partnerships on the planet added up to 82 thousands which controlled 810 thousand subsidiaries"<sup>6</sup>. The principle job for the world economy has the biggest one hundred transnational partnerships. On the off chance that we drawing up its yearly rankings by the UNCTAD top positions involved by the greatest companies didn't change throughout the years. In 2008, the underlying areas on the rundown were: General Electric, Vodafone and Royal Dutch (see Table 1).

**Table 1. The world's top 25 TNCs ranked by country of origin**

Number	Name of TNCs	Home countries	Industry
1	General Electric	USA	Electrical & electronic equipment
2	Vodafone Group Plc	USA	Telecommunications
3	Royal Dutch/ Shell Group	Netherlands	Petroleum Expel. /ref./Distr.
4	British Petroleum Company	United Kingdom	Petroleum Expel. /ref./Dist.
5	Exxon Mobil	USA	Petroleum Expel. /ref./Dist.
6	Toyota Motor Corporation	Japan	
7	Total	France	Petroleum Expel. /ref./Dist.
8	Electricity De France	France	Electricity, gas and water
9	Ford Motors	USA	Motor vehicles

Number	Name of TNCs	Home countries	Industry
10	E.O.N. AG	Germany	Electricity, gas and water
11	Arcelor Mittal	Luxemburg	Metals and metal products
12	Telefonica SA	Spain	Telecommunications
13	Volkswagen AG	Germany	Motor vehicles
14	ConocoPhillips	USA	Petroleum expels. /ref./distr.
15	Siemens AG	Germany	Electrical electronic equipment
16	DaimlerChrysler	USA	Motor vehicles
17	Chevron Corporation	USA	Petroleum expels. /ref./distr.
18	France Telecom	France	Telecommunication
19	Deutsche Telekom	Germany	Telecommunication
20	AG	France	Electricity, gas and water
21	Suez Group	France	Water, Gas and Waste Management
22	BMW AG	USA	Motor vehicles
23	Hutchison Whampoa	HK, China	Diversified
24	Honda Motor Co Ltd	Japan	Motor vehicles
25	Eni Group	Italy	Petroleum expel. /ref./distr.

Source: World Investment Report. Transnational Corporations, Agricultural Production and Development, UNCTAD, New York and Geneva 2009, s. 258.

<sup>4</sup> A. Zorska, *Ku globalizacji? Przemiany w korporacjach transnarodowych w gospodarce światowej*, PWN, Warszawa 2000, s. 50-57.

<sup>5</sup> Ibidem, s. 48.

<sup>6</sup> World Investment Report 1994. Transnational Corporations Employment and the Workplace, United Nations, New York and Geneva 1994, s. 15-17, World Investment Report, World Investment Report. Transnational Corporations, Agricultural Production and Development, UNCTAD, New York and Geneva 2009, s. 17



In year of 2008, generally engaged or mainstream organizations out of one hundred biggest companies had opened up their base camp in the Triad nations chiefly, the United States, the European Union nations and Japan. Be that as it may, in the time of 1993 none of the 100 biggest enterprises was the transnational organization from creating nations or immature, while in the 2007 on the rundown seemed seven of them: three companies from Korea, one structure China, Hong Kong and Malaysia and Mexico was there. Global organizations consistently had centered for investigating business essentially in

created nations. Spot of decision for TNCs from created nations are nations, for example, UK, Germany, Netherlands, United States, and Japan. Be that as it may, the significance of creating nations as a position of transnational enterprises' area has expanded. The explanation behind the expanding exercises of TNCs in creating nations is to increment of their number in: China and India. They presently are getting the most elevated pace of monetary turn of events, gain the exceptional outcomes in worldwide exchange and are the top exchanging accomplices (see Table 2).

**Table 2. Number of parent corporations and foreign affiliates by region and economy, latest available year (concluded)**

Region/Economy	Parent corporations based in economy	Foreign affiliates located in economy	Year
<b>Developed economies</b>	58783	366881	
<b>Europe</b>	47765	347771	
<b>e.g.:</b>			
<b>France</b>	1267	10713	2002
<b>Netherlands</b>	4788	17521	2008
<b>Germany</b>	6115	11750	2007
<b>Poland</b>	58	14469	2001
<b>Sweden</b>	1268	1944	2007
<b>United Kingdom</b>	2360	113667	2005
<b>North America</b>	3857	9389	
<b>Canada</b>	1439	3725	1999
<b>USA</b>	2418	5664	2002
<b>Other developed countries</b>			
<b>Japan</b>	4663	4500	2006
<b>Developing economies</b>	21425	425258	
<b>Africa</b>	746	6084	
<b>The Caribbean and Other America</b>	3533	39737	2007
<b>Asia and Oceania</b>	17146	279437	2008
<b>India</b>	815	2242	
<b>China</b>	1167	9712	

Source: Like in Table 1.

The leading influence or playing a great role of TNCs on globalization and regionalization processes, reason to fixes their potential in the plat form global economy in current world.

### THE IMPORTANCE OR “ROLE OF TNCs” IN THE INTERNATIONAL TRADE

So, if we take a deep look on the exercises of transnational enterprises, ought to be considered in two perspectives in the worldwide economy. Initially, in the roundabout structure, comprehended as the presence of merchandise and enterprises of independent firms on outside bazaars and from the immediate side, which means working together because of speculations made abroad. Along these lines, both side to commitment of TNCs in remote exchange and of venture, caused that they are

"predominant" on the planet economy. Today when the economy is begun creating or changed, organizations have the chance to pick of the degree of universal exchange and work. For instance, the fare of one transnational partnership's subsidiaries in 2008 was represented 33% of world fares. Moreover, the quantity of individuals utilized by global partnerships developed quickly in 2008 amounted to 77 million people, which is twice than the all workforce in Germany (see Table 3).

**Table 3. Selected indicators of the activities of transnational corporations**

Item	Value at current Prices (billions of dollars)		Annual growth rate (per cent)			
	1990	2008	1996-2000	2004	2006	2008
<b>Years</b>	1990	2008	1996-2000	2004	2006	2008
<b>FDI inflows</b>	207	1697	39.4	30.0	50.1	-14.2
<b>FDI outflows</b>	239	2853	35.6	65.0	58.9	-13.5
<b>Cross-border M&amp;As</b>	112	673	62.9	28.4	38.1	-34.7
<b>Sales of foreign affiliates</b>	6026	30311	8.1	26.8	18.9	-4.6
<b>Gross product of foreign affiliates</b>	1477	6020	6.9	21.6	20.1	-4.4
<b>Total assets of foreign affiliates</b>	5938	69771	18.9	4.8	23.9	-5.0
<b>Export of foreign affiliates</b>	1498	6664	3.6	21.3	15.0	15.4
<b>Employment by foreign affiliates (thousands)</b>	24476	77386	9.7	8.5	11.4	-3.7

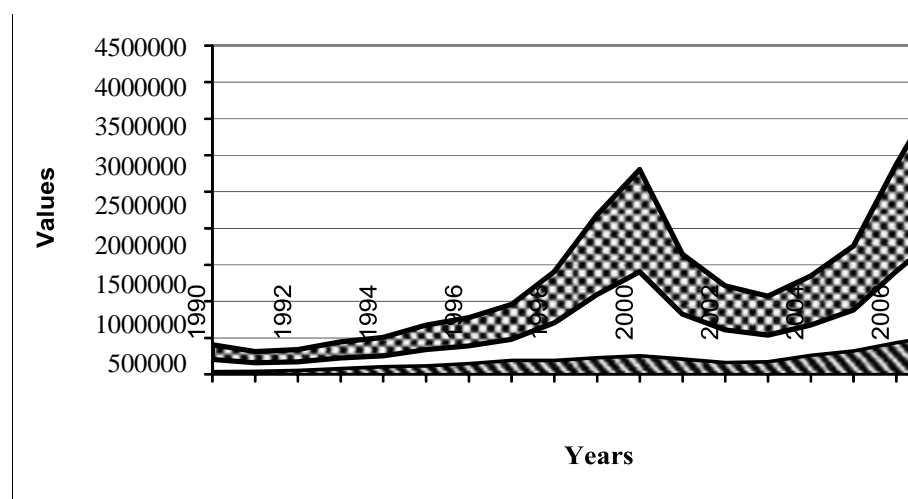
Source: Like in table 1.

Investigation of the information contained in the table 3 shows that the TNCs have the extreme job in the current world and worldwide economy. In the both created and creating nations TNCs are the makers of merchandise and enterprises on the planet. In the season 2007-2008 the biggest TNCs have delivered 4% of worldwide GDP, also have 9% of worldwide outside resources, made 16% of world fares or conveying and utilizing 11% of accessible resources<sup>7</sup>. In 2008, all pointers of transnational organizations (barring trades)

declined, which transformed into the emergency. The information in table 3 shows that the job of TNCs make about 20% of worldwide exchange.

Be that as it may, remote direct venture is the most exceptional type of worldwide nearness of transnational partnerships. "On remote direct venture comprises of: money related capital, reinvested income and credits companies"<sup>8</sup>. As per, in the time of 2008 the pattern in the inflow of remote direct speculation (FDI) was as per the following (see Figure 1).

**Figure 1. FDI inflows, global, and by groups of economies 1990-2008 (mild USD)**



Source: Own compilation based on: <http://stats.unctad.org/FDI/>,

<sup>7</sup> Ibidem, s. 17

<sup>8</sup> Por. *World Investment Report 2005, Transnational Corporation and the Internationalization of R&D*, UNCTAD, New York and Geneva 2005, s. 10.

<sup>9</sup> Por. *World Investment Report. Transnational...op.cit.*, s. 19.





Since, 1990 there was an orderly increment proportion in capital put resources into the type of remote direct speculation (FDI) on the planet until 2000, when inflows arrived at 1.400 billion U.S. \$, of which 1.200 billion was promoted in created nations, while around 200 billion in creating nations or zones. Since 2000, the estimation of promoted reserves continuously declined. Since 2003, FDI inflows into the world economy started to develop until 2007, when there was a disappointment in the most elevated all through the period by 14% from 1679 billion USD in 2008. The principle reason of disappointment the inflow of outside capital into the economy world in 2008 ought to be associated with in the emergency time frame.

The consequence of the money related emergency was the dismissal the quantities of worldwide mergers and acquisitions by 39% in 2008 contrasted and 2007, which is considered as the primary channel inflow of remote capital. "In Europe, the quantity of mergers and acquisitions fell by 56% and Japan 43%<sup>9</sup>". The hour of emergency, additionally ensured that the created nations are increasingly touchy for variances, in light of the fact that their budgetary framework is intently or the same to the financial framework like in United States than the monetary frameworks of creating nations.

Notwithstanding the dismissal of remote direct speculation appearance to created nations a large portion of the FDI went to the Member States of the European Union in 2008. Their worth added up to 503 billion U.S. dollars. The appearance into Asia in 2008 added up to 388 billion U.S. dollars. On the accompanying spots were North America with the inflow of FDI was 360 billion U.S. dollars and South and Central America with 144 billion dollars. "The year 2008 was additionally incredibly favoring and gainful for Africa as far as outside direct venture (FDI) floods, which added up to 87 billion dollars. It was a surprising time in the historical backdrop of the Region"<sup>10</sup>. Recently, the movement in the flow of foreign capital have translated the principle of relations between the rich North and poor South. Cooperation was strongminded precisely as "open regionalism".

The investments of transnational corporations there be can some sort difference in the most unfortunate nations may have negative side and impacts, since it expands the social disparities and a separation. Enterprises produce merchandise and offer types of assistance for this specific gathering, which have the buying power, yet don't think about the requirements of the most unfortunate individuals who don't have the chance to purchase the products (this marvel is known as a "neediness of bounty").

The impact of disparities in the utilization of capitals are the distinctions in levels of advancement between the more evolved nations and nations with low degrees of monetary turn of events. Significant inquiry emerges whether it is conceivable the arrangement of such assets by transnational partnerships that they will end up being the variables that escalates the improvement of less created nations, accordingly engrossing speculation exercises?

## CONCLUSIONS

The importance or role of transactional corporation or TNCs is increasing world economy or trade as always. Undeniably, corporations are turn into independent and expanded from the control and regulation of both the main and the multitude economy. The secure situation of establishments in the world budget due to the functions they perform, i.e.:

- The transferring or the drive of resources and measurements of manufacture and trade,
- The motivation of development and the pecuniary productivity,
- The encouragement of rearrangement,
- The strengthening of the marketplace struggle,
- The mixing of initiatives and financial prudence.

TNCs mainly focused on strengthen the beyond the boarder and its development process. Funds cares area wised commercial combination, both in developed countries, developing and poor countries deprived countries, mainly by the "international trade". So, we can clearly say it that it has a drastic role in our current civilized world.

<sup>10</sup> Ibidem, s. 247-250.



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## REFERENCE

Books, Journal, case law, article.



# LOCKDOWN: INDIAN DESI RAP'S 'CARTOONIZATION'

**A study on the inclusion of cartoons in the rap video songs during the Covid-19 lockdown period in India**

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## ABSTRACT

*While the pandemic situation has kept the whole of the nation in a lockdown, this hasn't stopped the content producers to stop their production on alternative media. Likewise, this covid-19 lockdown has engaged the rap video producers into 'cartoonization' of rap videos. This study explores the replacement of real human visuals been replaced by cartoons by the Indian rappers in their videos.*

**KEYWORDS:** Rap Music, Cartoonization, alternative media, visuals

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## INTRODUCTION

For decades, hip-hop has been perceived as empty and thoughtless, leading to harsh criticism. However, hip-hop has also been effective in creating and expanding the awareness of various social movements, despite being an unorthodox and often overlooked as a successful means. When hip-hop has gained attention, so has a safe-haven for the oppressed 's voice. Unlike other genres, it can speak volumes as it is a staple of youth and popular culture (Ingle, 2020). With the Indian content producers dominating the online spaces for content generation, the alternative media has brought in an ease in making content and publicizing it with zero cost. This has led the alternative media to be a content market without any monopoly on viewership, consumer access, and advertisement their personality and talent. The definition of alternative media should be expressed in relation to material creation, delivery and consumption peculiarities. (Olga G. Bailey, 2007)

Throughout the 1980s, domestic film production expanded to a surge throughout British youth entertainment and music videos from the multimedia culture of New York hip hop. James Macnally explored this historical media transition, the early creation of rap imagery and testimonies of early London hip-hoppers of order to explore how the digital dynamics of music video revealed both the "language of the rank" of hip-hop and new body speeds which facilitated hip Hop transfers as a

multifaceted youth movement from New York to London (McNally, 2019)

As the world has nearly stopped due to the lockdown of the Covid-19 pandemic, content producers, on the other hand, are trying to make the best of their productions. On the one hand, where traditional media entertainment industry has been stopped, new media content producers have stepped forward to make the most of this pandemic situation. The situation is that real-life videography is replaced by the use of cartoons in Indian Desi Rap Music Videos. This 'cartoonization' of rap videos is due to the lockdown situation where outdoor videography is banned. Thus, we look at how content producers focused more on visual graphics and animation, giving them a push to produce videos.

The animation can be the simplest and fluid type in the graphic arts in its mature form. Each artist has long searched for the ideal medium-one, which would be colour, light, extend, and motion within his frame, since the first Cro-Magnon Picasso has hacked grafts on his cave wall. It can be done by the illustrated film. There are no constraints of form or length. In technical realism it can approach an absolute and in abstraction it can reach the absolute. You can breathe a deep breath over both. When technically difficult to achieve the unreal or fantastic, the animator does not have any problem (Jones, 1946). The process of its creation, adaptation and decline is also explored. In so doing it shows, along

with its revolutionary ideas, an important chapter in the little-known early history in electronic synthesized music. (Robertson, 2010). A person can play rap music videos with the music beat of the script by writing text and character gestures (Hayashi, 2017)

A plurality of conclusions is based on the use and fulfilment experience of mass media. Those require an engaged community, an attempt to align media use with gratifications, a variety of accessible contact channels and specific awareness about desires and preferences. "Usually the models of use and gratuitousness begin with social and psychological requirements that encourage certain motivations to select and use forms of communication. Such studies have assumed that a person can choose between communication alternatives knowingly to satisfy the needs if a need leads to a motive. Studies usually takes into account assumptions of the motivations of people to use information channels. The use of this means that compensation or other effects are expected (Rebecca B. Rubin, 1986)

You're familiar with hip-hop music videos because you've never seen the 'trending' list on YouTube or looked at the famous list of every social media website. Music videos are much more entertaining than any other genres. In this study of genre, it was seen that hip-hop music videos were much more complex than what was thought, and the end product was due to careful planning and many production stages (Sayre, 2019). A systematic analysis of the music video manufacturing industry and the artistic process of rap music video creation and artist promotion is the outcome of this article.

The participants' answers are presented in three areas: the process of music video production, current trends in rap music videos and the setting of music videos as a gender site. There is no doubt about the artistic freedom of expression and the mechanical production (Fitts, 2007).

Although an artist may have a certain concept, they want their music video entered around, there is usually a large crew that helps create, produce, shoot, edit, and create digital effects for the video (Sayre, Lauren, 2019). This pandemic, brought in the newer concept where no crew, but an individual or a smaller team had been the production team for cartoonization of the rap videos.

## METHODOLOGY

Since the producing of rap video songs involved cartoons leading to a certain approach for audiences, the methodology of content analysis was adopted for this study. Cultivation theory addresses TV's long-term impact on audiences. The theory implies that television's danger lies in its ability to influence not a single point of view on a specific issue, but in its ability to shape the world's moral values and general beliefs. The theory stands on a number of concepts: symbolic environment, storytelling, television symbolic function, television traits, cultural model, value system cultivation, multi-directional process and cultural indicators (Mosharafa, 2015). Those rap video songs on produced YouTube's alternative media platform were considered for study.

## FINDINGS AND OBSERVATIONS

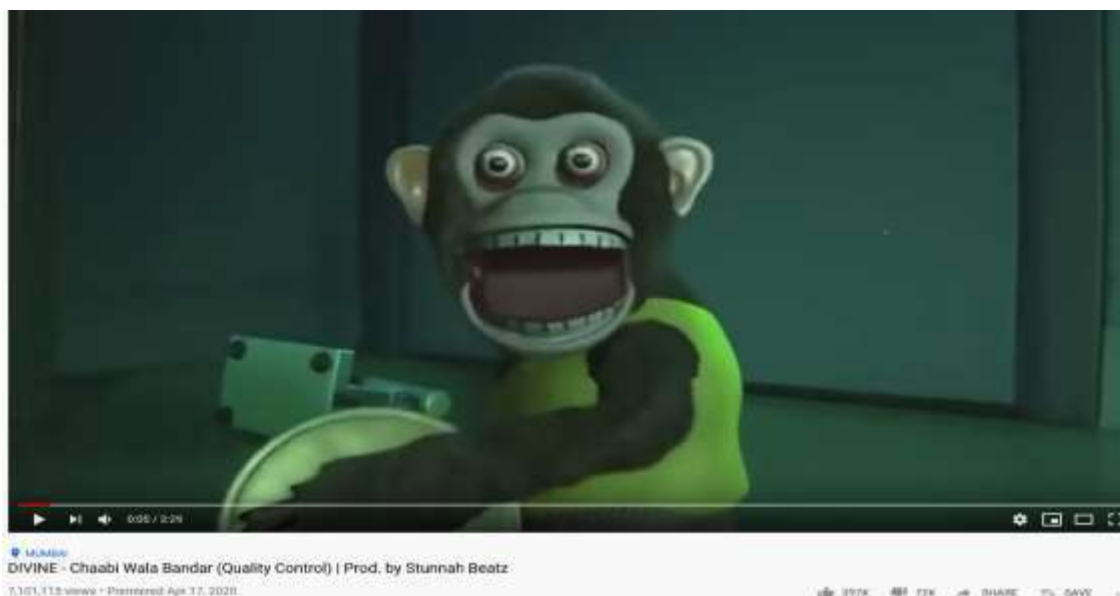
Fig.1.1 – A screenshot of the video song “Khatam Karona” produced on youtube with cartoon characters.



Rappers are American pop culture 's biggest characters. When "natural" shooting doesn't suit a moment 's significance, it's only fair that they receive the animation treatment. Rapper's rap video hit 'Khatam Korona' had a series of animated clips. These clips visualized and narrated corona cause and

spread. Such cartoons seemed more appealing when synced with the song's lyric. The video stressed description and lyrics clarification through these cartoons. This rap video seemed more like a video about the corona virus where cartoons were more oriented.

**Figure 1.2: A screenshot of the video song “Chaabi Wala Bandar” from YouTube having cartoonization in its visuals.**



Although Rap songs are primarily part of protest music or music for cause and problems, on the other hand, the rap genre 'Gangsta' brings another dimension of music. Here's a diss (a rap song against another rap artist) album. This track 'Chabiwala Bandar' was also created against another Indian rapper. Like the rap song says, "Chabi" (ring) and

"bandar" (moneky) had a monkey toy pounding the drums as the cord coiled. Although this rap song had the rapper in less visual, most monkeys' cartoons were used in this rap. Here, we observed that the reliance on animation and cartoons was important to produce the video during the lockdown era.

**Figure 1.3: A screenshot from the rap song “Kuch Bhi Nah” which had Anime characters and was produced on Youtube.**



Speaking regarding cartoonization, some rap videos have recorded the use of anime characters. One such rap song was 'Kuch Bhi Nahi' by E3. This rap song is based on a love story characterized by video anime characters. The popularity of anime

characters and synchronization with rap and music is another attraction for viewers to like, comment and subscribe to the video song on any alternative media platform,

**Figure 1.4: A screenshot of the rap song “Firse Machayenge” which had the caricatures of the rapper and the DJ in the video than the real shooting being done.**



Yet again, the rapper Emiway Buntai remixed and relaunched "Firse Machayenge." Earlier this video had real-life characters, but this remix had the main focus on cartoon-like characterization of rappers. Again, this observation makes us realize the

necessity and indulgence of cartoonization during the pandemic situation.

**Figure 1.5: A screen shot from the Rap video song produced by Cartoon Network having the cartoons being animated to follow the tips for not getting sick during the Covid-19 Pandemic.**



In view of the coronavirus pandemic, Cartoon Network has released a rap song to raise awareness about safety and hygiene. The local music video featuring Ben 10, the Powerpuff Girls and other toon heroes promotes the Be Clean Be Cool message and provides easy helpful tips for children to stay safe

and tidy during the current health emergency. Children can learn how simple measures like hand washing, sneezing, and coughing can help prevent disease.



## CONCLUSION

Although the lockdown period had impeded content producers and videographers from stopping the rap video's real-life filming, they did not disappoint and continued to make the best use of cartoons and animations to be used in rap music videos. Here, producers' reliance on cartoons was observed. While the rappers tried to show themselves in the video, cartoonization filled the need for cartoons and the void. Importantly, it followed a great tradition in hip-hop, where emcees were not afraid to collaborate with animators to create something really vibrant and larger-than-life in this pandemic lockdown situation. Not only cartoons, but the success of cartoons characters has played a key role in that views and shares, as well as video creators or rappers' subscriptions. Here, the rap videos' narrating animation overshadowed more than lyric sync or rap music. The story-telling animation of rap videos, drawn to the cartoons, brought a big aspect of the cartoons becoming part of the rap songs. Furthermore, cartoon animation was such that they clarified rap. Thus, reliance on cartoons and animators brought a new trend among Indian Desi rappers and content producers to introduce the trend of 'cartoonization' in rap videos during India's lockdown.

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# CONFIRMATORY FACTOR ANALYSIS OF STUDENT MATHEMATICS ENGAGEMENT SCALE AMONG SENIOR SECONDARY SCHOOL STUDENTS IN EKITI STATE, NIGERIA

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## ABSTRACT

*This study validated student mathematics engagement scale (SMES) among secondary school 2 students in Ekiti State, Nigeria. The study adopted a survey design. Multi-stage sampling procedure was used to select a sample of 1600 SS2 students from 32 schools in Ekiti State, Nigeria. Confirmatory Factor Analysis (CFA) was used in the validation of a robust student mathematics engagement scale to measure students' engagement in mathematics.*

*Six factors, comprising 45 student mathematics engagement items (SMEI) were reduced to 37 items through CFA. Dimensionality analysis of CFA showed that the 37 items distinctly loaded on six factors and denoted sub-scales. These factors were: Personal Agency Engagement, Positive Affective Engagement, Negative Affective Engagement, Positive Behavioural Engagement, Negative Behavioural Engagement and Cognitive Engagement. The composite reliabilities of each of the sub-scales of the SMES ranged from 0.66 to 0.90. A robust 6-dimensional Students Mathematics Engagement scale was validated. Mathematics teachers should be encouraged to use this scale for measuring secondary school students' level of engagement in the subject.*

**KEYWORDS:** *Student mathematics engagement scale, Confirmatory factor analysis, Dimensionality of scales, Composite reliabilities.*

## INTRODUCTION

Over the years, it has been observed that one of the learner's characteristic which has a high probability of affecting learning outcomes and achievement in Mathematics is students' engagement. This denotes students' vigorous obsession in learning activities (Reschly, Wylie & Christenson, 2012). In learning Mathematics, engagement happens when students are systematically busy with the teacher inside the classroom, partake in solving problems, do the Mathematics, and grasp the opinion that having mathematical knowledge is meaningful and suitable, in the classroom and outside the classroom. Basically, the conception of engaging students is grounded on the trust that their knowledge increases when they are snoring, fascinated, or encouraged. But their knowledge decrease when they are uninterested, calm,

dissatisfied, or otherwise disengaged in learning activities (Attard, 2011).

Academically engaged students are dedicated, tenacious, and captivated in their academic quest (Adegbuyi, 2019). Seeley (2004) noted that students' engagement brings about success and that commitment could have the utmost influence on fairness during Mathematics class. Seeley also noted that students' engagement makes students to study. To corroborate Seeley's view, Akpan & Umobong (2013) carried out a research work on students' achievement, students' Inspiration and students' level of engagement during teaching and learning process in Nigeria. Their results showed that students' success, students' performance, and students' achievement have a positive correlation with engagement. These researchers said that before a child can achieve success in his or her academics, he or she must affianced maximally in academic work, as





academic commitment is essential for a child to be successful in the classroom.

However, despite the significance of engagement of students to their success in the classroom, the level of students' engagement in some of their subjects is low, most especially in Mathematics. However, in order to increase the level of engagement in mathematics, teachers and school administrators need to identify these set of disengaged students and occupy them in meaningful teaching and learning process, for high level performance in their classrooms. Basically, assessment of students' level of engagement is highly necessary in their subject areas, most especially in Mathematics with valid and reliable student mathematics engagement questionnaire, that researchers and teachers can use to investigate the feelings, views, and beliefs which students have about Mathematics and how an adjustment can be made to improve students' level of comprehension during the teaching of Mathematics, among secondary school students in Nigeria and outside Nigeria.

However, among psychometricians and mathematics' researchers, the dimensionality of student engagement construct has constituted a problem. Most of the instruments currently available to assess students' level of engagement, most especially in Mathematics in Nigeria and outside Nigeria, are validated by not very effective psychometric procedures. For researchers to assess the extent of students' involvement in Mathematics, so as to improve students' learning outcome and achievement, there is a need to validate a multidimensional student mathematics engagement scale with sophisticated statistical tool, that is, Confirmatory Factor Analysis (CFA). With the use of this statistical tool, valid, reliable and robust multidimensional student mathematics engagement instrument in Nigeria can be validated. On the bases of the reason mentioned above, this work validated the six sub-scales of student Mathematics engagement scale constructed with the use of Exploratory and parallel analysis by Adegbuyi & Adegoke in (2017). This work use Confirmatory Factor Analysis for more rigorous validation of the six sub-scales.

The need for CFA in this study is borne out of the fact that CFA is a multivariate statistical technique which is basically for hypothesis testing. The hypothesis deals with a latent pattern of factors behind the items. The CFA tested the extent to which a group of items represent the number of factors that have been generated through EFA. In CFA, the extracted factors must be identified by the researcher prior the analyses of data. Confirmatory factor analysis examined how well the measure of construct is reliable with the assessment of researchers concerning the pattern of the latent variable.

Besides, CFA gives a more reasonable approach to a researcher during the evaluation of construct validity (Çokluk, & Koçak, 2016). In Confirmatory Factor Analysis, "goodness of fit" measures are employed to assess the degree to which the predicted latent variable by the researcher apprehended the correlation between all the items in the construct.

## RESEARCH QUESTIONS

- 1) Do the retained factors of students Mathematics Engagement scale show good model fit indices?
- 2) Do the students Mathematics Engagement items show convergent validity?
- 3) Are items of each of the dimensions of Students Mathematics Engagement scale unidimensional?

## OBJECTIVE OF THE STUDY

This study constructed a valid and reliable multidimensional student mathematics Engagement scale to measure the level of secondary school students' engagement in mathematics in Ekiti State, Nigeria for the purpose of improving learning outcome and achievement in Mathematics.

## METHODOLOGY RESEARCH DESIGN

This study adopted a survey design under Instrumentation research type. This type of research verifies large and small population by choosing small samples from the population to ascertain the relative occurrence, sharing, and relationship between the latent variables and its corresponding measured variables. It involves validation of Instrument.

## SAMPLE AND SAMPLING TECHNIQUE

The sample size in this work was 1600 Senior Secondary School 2 students using multi-stage sampling procedure selected from 32 schools in Ekiti State, Nigeria. First, one Senatorial District was randomly selected from the existing three Senatorial Districts in Ekiti State. From the selected Senatorial District, there are six Local government areas out of which four LGAs were randomly selected. From each of the selected Local government areas, simple random sampling was used to select four public senior secondary schools and four private senior secondary schools. Thus, the number of schools in this work was 16 public senior secondary schools and 16 private senior secondary schools respectively. Finally, 50 SS2 students were randomly selected from each of the 32 schools (32x50=1600 students).



**INSTRUMENT: STUDENTS MATHEMATICS ENGAGEMENT SCALE**

The instrument comprised six sub-scales with 45 items of students mathematics engagement scale namely (Personal Agency Engagement, Positive Affective Engagement, Negative Affective

Engagement, Positive Behavioural Engagement, Negative Behavioural Engagement and Cognitive Engagement). The scale was first constructed by Adegbuyi and adegoke in (2017) through Exploratory Factor Analysis and Parallel Analysis.

**Table 1: Method of Data Analysis**

Research Question	Statistical software package
1. Do the retained factors of student’s Mathematics Engagement scale show good model fit indices?	Confirmatory factor analysis, using LISREL package
2. Do the students Mathematics Engagement items show convergent validity?	Confirmatory factor analysis, using AMOS package
3. Are items of each of the dimensions of Students Mathematics engagement scale unidimensional?	Confirmatory factor analysis, using AMOS package

**RESULTS AND DISCUSSION**

**Research question 1: Do the retained six factors of students Mathematics Engagement scale show good model fit indices?**

The following model fits were tested for this research question:

- i. Root Mean Square Error of Approximation (RMSEA) should be  $\leq 0.06$ , which signify suitable model fit (Tabachnick B, Fidell (2007)).
- ii. Root mean square residual (RMR) and standardized root mean square residual

- iii. (SRMR) should be  $\leq 0.08$ , which signify suitable model fit (Tabachnick B, Fidell (2007)).
- iv. Values for either non-normed fit index (NNFI) or normed fit index (NFI) should have a limit of 0.95 or larger, which specify a good fit to the model.
- v. A comparative fit index (CFI) of 0.90 or larger indicates acceptable model fit. (Tabachnick B, Fidell (2007)).
- vi. Incremental fit index (IFI) of 0.95 or larger indicates acceptable model fit. (James B. Schreiber,; Frances K Stage,; Jamie King,; Amaury Nora and Elizabeth A. Barlow (2006)).
- vii. An acceptable value of Chi-square probability should be  $\geq 0.05$  (Suhr, 2006)

**Table 2: Model fit indices of students Mathematics Engagement sub-scale**

Model fit	ACCEPTED MODEL FIT	DIM1	DIM2	DIM3	DIM4	DIM5	DIM6
RMSEA	$\leq 0.06$	0.12	0.076	0.073	0.072	0.046	0.044
RMR	$\leq 0.08$	0.070	0.066	0.055	0.056	0.041	0.046
NFI	$\geq 0.95$	0.89	0.93	0.94	0.93	0.96	0.96
NNFI	$\geq 0.95$	0.89	0.93	0.94	0.94	0.97	0.97
IFI	$\geq 0.95$	0.90	0.94	0.95	0.94	0.97	0.97
CFI	$\geq 0.95$	0.90	0.94	0.95	0.94	0.97	0.97
RMSEA 90% CI	$< 0.06$ ; $< 0.08$	0.12;	0.075;	0.072;	0.071;	0.045;	0.042;
$\chi^2$	$> 0.05$	10089.46	6607.04	5007.38	6038.65	3028.80	3367.89
COMMENT		Not Fit	Not Fit	Not Fit	Not Fit	Fit	Fit

DIM = Dimension

To answer this research question, the Confirmatory factor analysis of the six sub-scales of students Mathematics Engagement scale which comprised 45 items that was constructed by Adegbuyi

and adegoke in (2017) through EFA and PA, was carried out on a sample of 1600 which is different from the initial 1008 samples used for EFA. Table 2 gives the detail information of the fit indices of student



mathematics engagement scale. The table shows that student mathematics engagement scale is not one dimensional nor two or three, up to four-dimensional scale as the fit indices of the engagement scale was not significant under one to four dimensions. Even one cannot say that the scale shows good model fit under five dimensions as the model only fitted after the removal of cognitive engagement. So the results of table 2 clearly show that student mathematics engagement scale have six dimensions as all the fit indices under the 6-dimensional model satisfied the model fit criteria. Not only that, the result of model fit confirmed the result of Parallel analysis from the

previous work of the Adegbuyi & Adegoke (2017) which retained six factors.

**Research Question 2: Do the students Mathematics Engagement items show convergent validity?**

Based on the results obtained from the fit indices, proper examination of standardized regression weight of the six models was done and computation of composite reliability was carried out. The result is shown on the table 3.

**Table 3: Validity Index of students Mathematics Engagement item**

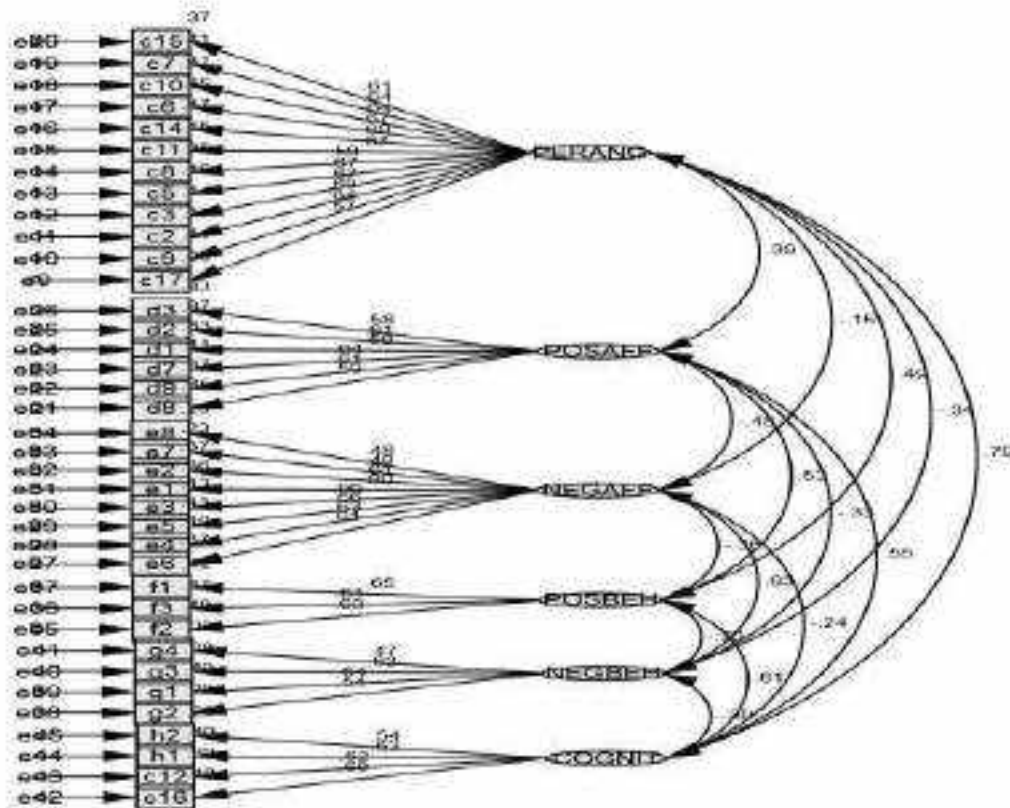
Item	Factor(F)	Factor Loadings			X= $\sum 1-(LD)^2$ $\sum FLD$	Y=( $\sum FLD$ ) <sup>2</sup>	Z= $\sum X&Y$	CR= $\frac{Y}{Z}$						
		LD	LD <sup>2</sup>	1-(LD) <sup>2</sup>										
c17	<-- PERANG	<b>0.571</b>	0.32604	0.673959	6.985419	7.745	59.98503	66.97044	<b>0.895694</b>					
c9	<-- PERANG	<b>0.643</b>	0.41345	0.586551										
c2	<-- PERANG	<b>0.685</b>	0.46923	0.530775										
c3	<-- PERANG	<b>0.665</b>	0.44223	0.557775										
c5	<-- PERANG	<b>0.675</b>	0.45563	0.544375										
c8	<-- PERANG	<b>0.588</b>	0.34574	0.654256										
c11	<-- PERANG	<b>0.668</b>	0.44622	0.553776										
c14	<-- PERANG	<b>0.686</b>	0.4706	0.529404										
c6	<-- PERANG	<b>0.673</b>	0.45293	0.547071										
c10	<-- PERANG	<b>0.639</b>	0.40832	0.591679										
c7	<-- PERANG	<b>0.641</b>	0.41088	0.589119										
c15	<-- PERANG	<b>0.611</b>	0.37332	0.626679										
d8	<-- POSAFF	<b>0.596</b>	0.35522	0.644784						3.832686	3.604	12.98882	16.8215	<b>0.772156</b>
d9	<-- POSAFF	<b>0.601</b>	0.3612	0.638799										
d7	<-- POSAFF	<b>0.636</b>	0.4045	0.595504										
d1	<-- POSAFF	<b>0.576</b>	0.33178	0.668224										
d2	<-- POSAFF	<b>0.615</b>	0.37823	0.621775										
d3	<-- POSAFF	<b>0.58</b>	0.3364	0.6636										
e6	<-- NEGAFF	<b>0.606</b>	0.36724	0.632764	5.185461	4.715	22.23123	27.41669	<b>0.810865</b>					
e4	<-- NEGAFF	<b>0.632</b>	0.39942	0.600576										
e5	<-- NEGAFF	<b>0.656</b>	0.43034	0.569664										
e3	<-- NEGAFF	<b>0.657</b>	0.43165	0.568351										
e1	<-- NEGAFF	<b>0.598</b>	0.3576	0.642396										
e2	<-- NEGAFF	<b>0.607</b>	0.36845	0.631551										
e7	<-- NEGAFF	<b>0.48</b>	0.2304	0.7696										
e8	<-- NEGAFF	<b>0.479</b>	0.22944	0.770559										
f2	<-- POSBEH	<b>0.633</b>	0.40069	0.599311	1.814759	1.885	3.553225	5.367984	<b>0.661929</b>					
f3	<-- POSBEH	<b>0.606</b>	0.36724	0.632764										
f1	<-- POSBEH	<b>0.646</b>	0.41732	0.582684										
g2	<-- NEGBEH	<b>0.537</b>	0.28837	0.711631	2.69714	2.268	5.143824	7.840964	<b>0.656019</b>					
g1	<-- NEGBEH	<b>0.635</b>	0.40323	0.596775										
g3	<-- NEGBEH	<b>0.621</b>	0.38564	0.614359										
g4	<-- NEGBEH	<b>0.475</b>	0.22563	0.774375										
c16	<-- COGNIT	<b>0.69</b>	0.4761	0.5239	2.442775	2.487	6.185169	8.627944	<b>0.716876</b>					
c12	<-- COGNIT	<b>0.624</b>	0.38938	0.610624										
h1	<-- COGNIT	<b>0.63</b>	0.3969	0.6031										
h2	<-- COGNIT	<b>0.543</b>	0.29485	0.705151										

Table 3 displays the standardized regression weight of each item of students mathematics engagement scale to their corresponding latent variable. All the loadings are greater than 0.4 (bolded under the column labeled 'LD'), which showed a good level of convergent validity. Not only that, the composite reliability (CR) of each of the construct of student mathematics engagement scale was computed the values of CR ranged from 0.66 to 0.90. These results supported the work of They said that; for a good

convergent validity, the value of CR for each construct should be between 0.60 to 0.90.

**Research question 3: Are items of each of the dimensions of Students Mathematics engagement scale unidimensional?**

Unidimensionality of each of the dimension of student mathematics engagement scale was carried out to show the pattern of relationship between each construct and their corresponding items.



**Figure 1: The unidimensionality of Student Mathematics Engagement items and their corresponding factors.**

To answer this research question, the 37 items that show convergent validity were verified to ascertain the unidimensionality of the items to their respective factors through confirmatory factor analysis. After this verification, The result of Figure 1 show that all the item under each of the construct of students mathematics engagement scale have strong relationship with their underline latent variable. No cross loading of items onto two or more factors. Each of the item unidimensionally loaded onto its corresponding factor.

The result also shows that student mathematics engagement scale have six dimensions (six sub-scales).

**CONCLUSION**

**The main outcomes of this research are as follows:**

The validated student mathematics engagement items have good fit indices with only six Models. This shows that the construct (Student Mathematics Engagement) have six dimensions.



The validated student mathematics engagement items were unidimensional. This implies that the test measures only one latent trait (Student Mathematics Engagement).

The composite reliabilities of each of the sub-scales of the SMES ranged from 0.66 to 0.90. The value clearly indicated that the six sub-scales of student mathematics engagement scale were highly reliable and valid.

## RECOMMENDATIONS

### Based on the results of this work, the following suggestions were made:

Educators and researchers who may be willing to validate survey instruments should make use of confirmatory factor analysis during the validation of their instruments, as this will produce a solid and robust instrument.

The validated scale can be used to develop a way for schools to comply with learning assessment standards and not to depend on the use of standardised achievement tests alone.

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## TAX SYSTEM UNDER THE PERIOD OF JAGADEKAMALLA JAYASIMHA (1015 AD TO 1044 AD) -AN OVERVIEW

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### ABSTRACT

*“Samasta Bhuvanashraya Shri Prithiviallabha, Maharajadhiraja Parameshwara Paramabhataaraka Satyaashraya Kulatilaka Chalukyaabharanam Shrimat Jagadeka Malladeva” these are the titles that are commonly found in all the inscriptions belonging to Jayasimha. This is clear indication that Jayasimha II was one of the very prominent kings of the Kalyana Chalukya dynasty. The inscription of Roogi in Indi taluk, 24<sup>th</sup> December 1019<sup>1</sup> describes Jayasimha’s accomplishments along with his titles. This writing refers to the following titles along with the above mentioned ones, belonging to Jayasimha II; “Gandarol ganda, Ganda bangaaram, Maarpade Bheemam, Mallikaamodam, Keertividyadharam, Kodanda Chaturbhujam, Rajendra Chola Madabhanjanam, Bhoja kulakalaanam, Gurjara vajrapaata, Maalawa nirmoolanam Jagadekamallam SrimajJayasimhar”. It further explains his victory over several contemporary kings viz., Rajendra Chola, Paramara Bhoja, Gurjaras, Kalachoori Gangeyadeva and Malawas. These awards describe the dainty personality of Jayasimha. He fought various wars and battles victoriously while he was still in ‘Kumara-vritti’. He won many wars after he was enthroned i.e. during his 29 years long rule as Emperor of Kalyana Chalukya Empire. All these stories of valour depict that he was an administrator of top class.*

**KEY WORDS:** Tax system, Kalyana Chalukya, Jayasimha II

### INTRODUCTION

The Progress of a nation depends on its economic development. Economic stability, in fact, is the backbone of a nation. It depends on the national resources and their proper utility. Thus, agriculture, agri-related projects like irrigation, construction of lakes, tanks, dams and trade and commerce of the time are like two faces of a coin. So also, these two sectors played important role in the economic system of the era of Jayasimha II. Local, internal, inter-state and foreign trade transactions contributed significantly to the economic system of this period. The businessmen in general, did trade in their family occupations. They also had their own trade unions or associations. It seems that essential commodities such as, oil, jaggery, sugar, salt and clothing were produced on large scales like in our modern factories.

Another deciding factor of economic stability of a nation is its sources of revenue; Greater the strength of the treasury greater the economic stability.

Jayasimha II and his officers used to collect various taxes for their treasury through a group of tax-collecting officers headed by a ‘Koshadhyaksha’ or ‘Bhandaariga’. Coins made of gold, silver, copper and poten called as Varaha, Gadyana, Pongadyana, Haaga, Veesa, Araveesa, Pana, Aruvana Gadyana and Drama were in usage. Coin minting factories existed throughout the kingdom – Nagavi, Lakkundi, Arasibeedi, etc.

Revenue collected from various sources was utilised on public welfare works which included constructing temples, establishing mathas, agraharas, lakes and tanks, etc. An attempt has been made in this chapter to understand how it all worked in this specific period as supported by the edicts of the period.

We know that economic stability of a state is dependent on its resources. In an agriculture based economy as that of Jayasimha’s, land tax was the principal source of revenue. The amount of tax was



decided on the fertility level of the arable land as it is said in the edicts.

### PROPERTY TAX

'Siddaaya' as a tax levied on own house appears in several inscriptions of the time. It is said in the A.D 1018 Badami edict<sup>1</sup> that ten Gadyana gold from the 'Siddaaya' collected in Badami was given to Lord Yogeshwara built by Paramanandadevaru.

It is said in Mantooru A.D 1040 edict<sup>2</sup> as "Ratta samudravan agalisalendu padeda daanaarta (tham) aavudend odorolonodu puttida dandaayam ellam keregi (ttam) prati Siddaayadolavattu Gadyaana ponnun".

Further, Karabhoomi and Aruvana are the taxes levied, also known as 'Nibandhadaruvana', on the endowed agriculture lands or farmlands. Dr. Bornett opines 'Aruvana' to be tax on gifted land (Maanya Bhoomi.)

The Roogi edict of A.D 1019<sup>3</sup> mentions; Srimaddasavarmadevara kaalada tereyalateya piriya kolol dhaara poorvakam maadi bitta nela mattaru noorayvattakke nibandadaruvana gadyaanamundu". While Asundi edict, A.D 1026<sup>4</sup> writes; "Alliya nayashtika tapodhanargge bitta mattaraaru Antu mattar panneradakkam Aruvana Gadyaana ondu pana". Aruvana was in fact, land revenue as well as tax on 'Negilu', the plough. As Aruvana proportionately increased with the size of the land so also it increased with the number of the ploughs a farmer used on his land. However, Dr. M. M. Kalaburgi opines that "Aruvana was a tax paid for enjoying the land and house donated to the temple".<sup>5</sup>

"(Mo) sangiya Maane Keshavam tanna dashavandada dese (yal) kotta keymattarppattu" in the Maski inscription<sup>6</sup> and "dantihalliya eradu saayira mattar sthaladolage kondu baaviya ...yam paduvallidda Dasavandada mattar 200", in the Vijaypur edict, A.D 1033<sup>7</sup>, having reference to the term 'Dasavanda' suggest that it was also a kind of land revenue only. It is said that it was 1/10<sup>th</sup> of the total produce of the irrigated land paid as tax".<sup>8</sup>

Thus, these inscriptions along many more are self-evident of the structure of the land revenue collected by the kings in Jayasimha II's Empire.

### TAX ON VOCATIONAL PRODUCE

Many vocational industries and classes existed in Jayasimha II's kingdom as the inscriptions of this period indicate. All these sections of producers of items of daily usage were levied different kinds of taxes.

The Bagali A.D 1035 inscriptions<sup>9</sup> mentions about 'akkasaaliyaaya', that is, the tax paid by the Goldsmiths; "Accharavalliyaraganamayyana tamma

Naaychayyana kayyalu 'Akkasaaliyaaya' uppolagaagi dhaanyangolellam".

Patnacheru edict<sup>10</sup> mentions; "Kalchupaadiya mundana Kalchupaadiya keragaldeyelladadara tenkana dishaabhaagada baddi Munjamayya sa kereyumadara peragana pattu mattarggarldiya korunkaratakuru Maderabariyaayan galam Pergadaayam, Karanaaya". The last three terms – Maderabariyaaya, Pergadeyaaya and Karanaaya are actually, tax paid on practice of particular occupations.

"Sujanai ...ludere Kaanikeyum vikkirdda (ya sese) sahita vee(ryya)vara virddukkuvidurave ...baduvevudu bittaru" as it appears in A.D 1024 edict of Havasbhavi<sup>11</sup>. The tax paid by Okkalu community is called as 'Okkaludere' as per the records of this inscription. So also, 'Gaanaaya' was paid by the Gaanigas.

### COMMERCIAL TAX

We understand from the writings of the period belonging to Jayasimha II that the business community too was levied taxes of different kinds. Tax levied on this section of the society is named as 'Sunka' in these inscriptions. They are variously recorded as; Perjunka, Hejjunka, Vaddaraavula, Pannaaya, Beelkode, etc. in the edicts.

Rajooru edict of A.D 1033<sup>12</sup> states as; "Saasirvvarum munoorvvarum kotta eleya heringe veesa aa tontake sunka Pannaaya", indicating that a tax, 'Pannaaya', was levied on lifting of Beetle leaves and on their gardens.

Additionally, A.D 1032, Beguru edict<sup>13</sup> records as; "Adikeya totadalu varshakke maradal ondadadake eleya sunka" maneya nelasanam", to indicate that Beetlenut was also levied tax, one beetlenut each tree, in this case.

'Perjunka' may be understood to mean either big(piri) sunka or for carrying/lifting of the goods as is recorded in Rajooru, A.D 1033 edict<sup>14</sup> "Paanangallaynoorara Pejjunka Manneya sunkam koodi peringe kolva Veesam panneraduvare".

The tax paid on the goods and commodities is known as 'Vaddaraavula' in the inscriptions. However, scholars differ in their opinion about the term. D. C. Sarkar and Saltore are in support of calling it a type of tax, while K. A. Neelkanth Shastri and S. M. Hiremath opine that the term was used to suggest the senior members of the royal family. This revenue belonged to the Central Administration<sup>15</sup>. It can be said that 'Vaddaraavula was paid by 'Vadda Vyavahaaris'.

It is written as; "Eleya peringe pattentu bitta balli eleya peram kaledu Vaddaraavulada sunkadavaru peringe kolva Veesava pattu" in Hotooru A.D 1037 edict<sup>16</sup>.



## OTHER TAXES

There are references to taxes such as, 'Beeya', and others along with 'Dandaaya', 'Kaanike' and 'Sese' in the rock writings of this period.

"Ratta samudravana galisalendupadeda daanaarta(tha) maaavudendorolenondu puttida Dandaayavellam" (A.D 1049 edict of Mantooru<sup>17</sup>). Offenders of tax or the defaulters in the village used to be penalised. Tributes and gifts received by the king by a defeated enemy were called 'Kaanike' or 'Kappa Kaanike' and that also went to the state treasury.

Some instances in which a tax was exempted are also recorded in certain records such as, in the Pura shasana of AD 1018;<sup>18</sup>

"Pampastthaana Viroopaakshadevara sannidaanadolu dhaaraapoorvakam sarvva baadhaa parihaaravaagi yoora mundaee parikaalindakkam bitta gaddeya mattaru 5".

"Sarvva namasya maadi bitta mattaru nooru doniyam (ten)ka de....tota matta 27 puradolage (na)deva gana 2 (pola) mane 1 halladim moodana tribhoga sunka teja saamy Devargge sarva baadhaa parihaaravaagi kottaru" is what is written in the edict of Devooru, AD 1029<sup>19</sup>.

Jayasimha II's officers used to collect various revenues and deposit them with higher officers or the king. These taxes were collected both in cash and kind. Such tax collecting officers' names also are mentioned in these inscriptions; "Srimatu Perggade Akalimayyangeradu noorara sunkaman aaluttire Pannakeni Vaddaraavula Sunkaverggade Sangavayyanum Banavaasi pannirtchaasirada Sunkavrggade Doodiyammanu(m)" (A.D 1037 edict, Hottooru<sup>20</sup>).

## CONCLUSION

In this way, these above inscriptions present a brief picture of the economic system of the empire of Jayasimha II. They illustrate how agriculture, industries, vocational industries, tax system worked complementary to each other in making the Empire stable and strong in accordance to the dictates of the scripts of this great ancient culture.

## END NOTES

1. I.A. VI No. XXXIII, 1018, Badami, Badami Taluk, Bagalkot District.
2. I. A. XIX No.188, 1040 November 9, Mantur, Mudhola Taluk, Bijapur District.
3. S.I.I. XX No 21, 1019 December 24, Roogi, Indi Taluk, Bijapur District.
4. S.I.I. XI (i) No.63, 1026, Asundi, Gadag Taluk, Gadag District.

5. Koppa S K: 1990, Thardavadi Nadu ondu Adhyayana, Prathibha prakashana, Indi, Page No.227.
6. HAS. No.18, A Corpus of Inscriptions in the Kannada Districts of Hyderabad State No.2, 1010 November 10, Maski, Lingasur Taluk, Raichur District.
7. S.I.I. XVIII No.51, 1033 April 7, Bijapura, Bijapura Taluk, Bijapura District.
8. Koppa S K: 1990, Thardavadi Nadu ondu Adhyayana, Prathibha prakashana, Indi, Page No.226.
9. S.I.I. IX (i) 89, 1035 December 25, Bagali, Harapanahalli Taluk, Davanagere District.
10. Inscriptions of A.P: Medak District No- 26, (?), Patmacheru, Patmacheru Taluk, Medak District.
11. K.I Vol 4 No.22- 1024, Havasabhavi, Hirekerooru taluk, Haveri District.
12. S.I.I. XI (i) No.69, 1033 April 16, Rajuru, Rona Taluk, Dharwad District.
13. E.C. (old) VII Shikaripura 20, 1032, Begur agrahara, Shikaripura Taluk, Shimoga District.
14. S.I.I. XI (i) No.69, 1033 April 16, Rajuru, Rona Taluk, Dharwad District.
15. Koppa S K: 1990, Thardavadi Nadu ondu Adhyayana, Prathibha prakashana, Indi, Page No.230.
16. E.I. XVI No.11, B, 1037 November 21, Hotturu, Shiggavi Taluk, Dharwad District.
17. I. A. XIX No.188, 1040 November 9, Mantur, Mudhola Taluk, Bijapur District.
18. Kannada University shasana samputa II, No-18, 1018, Pura, Kushtagi Taluk, Koppal District
19. S.I.I. XX 23. 1029 December 24, Devuru, Sindagi Taluk, Bijapur District.
20. E.I. XVI No.11, B, 1037 November 21, Hotturu, Shiggavi Taluk, Dharwad District.





# THE ROLE OF THE LIBRARIAN IN COMMUNICATION OF RESEARCHES AND POLICIES FOR EFFECTIVE POVERTY ALLEVIATION IN NIGERIA

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## ABSTRACT

*The study dwelt on the role of the Librarian in communicating researches and policies for effective poverty alleviation in Nigeria. The study sought to ascertain the relationship between communication of research to policy makers and poverty alleviation. It also described the relationship between communication of poverty alleviation programmes to end users and poverty alleviation. Descriptive survey research design was adopted in the study and data were obtained through the use of questionnaires from a sample of sixty five (65) respondents which consisted of Librarians from University libraries and the public library in Anambra State. Pearson moment correlation coefficient was used to analysis the data and it was found that communication of research to policy makers and communication of policies to end users have a strong positive relationship with poverty alleviation in Nigeria. The study thus recommended among other things that Librarian should improve on their communication skills and also strive to modernised and intensify their efforts in communicating researches from scholars on poverty alleviation to the government and other policy makers and also communicate government policies and programmes on poverty alleviation to the end users who happened to be the poor masses.*

**KEYWORDS:** Librarian, Communication of Research, Communication of Policies, Poverty Alleviation

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## 1.1 INTRODUCTION

Poverty is a complex phenomenon that has been defined from various perspectives. The World Bank identified four perspectives. The first perspective is whether individuals in society have enough resources to meet their needs, second is inequality in distribution of income across the population, third is consumption patterns between different groups in society, and finally is vulnerability which refers to risk of falling back into poverty (World Bank, 2001). Another definition from FAO defined poverty as the lack of, or the inability to achieve socially acceptable standard of living (FAO 2006). Poverty however can also be a state or condition in which a person or community lacks the financial resources and essentials for a minimum standard of living. This means that the income level from employment is so low that basic human needs can't be met. Poverty-stricken people and families might go without proper housing, clean water, healthy food, and medical attention. Each nation may have its own threshold that determines how many of its people are living in poverty. Statistically, in Nigeria, between 1960 and 1980, the poverty level

was about 28% of the population; by 1996 it rose alarmingly to about 66% of the population (Aliju, 2001). According to the United Nation Development Program Human Development Report (2008-2009) which combined such components as; level of inequality, life expectancy at birth, standard of living and access to knowledge, and education, access poverty rate between 2004 and 2009, discovered that the rate increased from 43% to 49%. This showed that despite its vast resources, Nigeria ranks among the 25 poorest countries of the world (Hussaini, 2014).

The causes of poverty in Africa as identified by (Mills, 2010) primarily states that African leaders choose to make Africa poor. On the broad theme of poor leadership and weak policies, Mills identifies the following specific reasons on why Africa is poor: Over reliance on primary commodities exports because of wide fluctuations in prices; Low productivity among people in all sectors because of poor health, low skills levels and inefficient land use; Rich natural resources which are mostly used to enrich elites leading to corrupt practices and diverting development focus; Leadership problems



including lack of democracy and culture of patronage and big men chieftain style of ruling and hostile attitude of many governments towards the private sector, except where they benefit directly, among others. This assertions can be said to be true for Nigeria.

Nations however have put up various measures to alleviate poverty. Poverty alleviation is meant to increase resource levels of poor individuals in society. In some cases, however, it is a matter of reducing gross inequality in society. In Nigeria, many poverty alleviation programmes have come and gone since independence such as the Agricultural Development project (ADP) in 1973, Operation Feed the Nation (OFN) in 1976, the Green Revolution in 1979, and the Structural Adjustment Programme (SAP) of 1986. The Structural Adjustment Programme was a very large programme that contained other programmes such as, Better Life Program (BLP), Community Banks Program, Family Support programs (FSP) and Family Economic Advancement Program (FEAP), and establishments of various bodies such as Directorate for Food, Roads and Rural Infrastructure (DFRRI), National Directorate of Employment (NDE) and People's Bank of Nigeria (PBN). In the recent times we have heard of National Poverty Eradication Programme (NAPEP), Youth Empowerment Scheme (YES), SURE-P by the Jonathan's administration and N-Power which is the most recent of them all, all geared towards alleviating poverty in Nigeria.

However, despite these various programmes, Nigeria still ranks among the 25 poorest countries of the world (Hussaini, 2014). Many researchers have therefore called for increased in knowledge sharing and effective communication of research as a bail-out to poverty. The World Bank (1998) and Asia Development Bank (2011) have both noted that all human development is based on the acquisition, dissemination and use of knowledge. Poverty eradication, therefore, would also be one area which would benefit tremendously benefit from access to relevant and appropriate information (FAO, 2006). Therefore this study seeks to assess and ascertain the role of librarians in effective communication of research for poverty alleviation.

## 1.2 OBJECTIVE OF THE STUDY

The broad objective of this study is to ascertain the role of librarians in effective communication of research for poverty alleviation in Nigeria. Specifically the study sought to ascertain:

1. The relationship between communication of research to policy-makers and poverty alleviation in Nigeria
2. The relationship between communication of government policies/programmes to end users and poverty alleviation in Nigeria

## 1.3 RESEARCH HYPOTHESES

1. **HO:** There is no relationship between communication of research to policy-makers and poverty alleviation
2. **HO:** There is no relationship between communication of government policies/programmes to end users and poverty alleviation

## 2.1 CONCEPTUAL REVIEW

### 2.1.1 Concept of Poverty Alleviation

Poverty alleviation is a process by which people's economic status is improved through government or non-governmental intervention (Adebayo, 2017). Some policies however have been put in place by government and some non-governmental organisation to help alleviate poverty. These policies are those programmes which aim at enhancing the standard of living of the poor in the society. In Nigeria, most of the poverty alleviation initiatives are entrenched in entrepreneurship but have suffered several challenges leading to their failure. Some of the schemes included Youth Empowerment Scheme (YES), Rural Infrastructural Development Scheme (RIDS), National Economic Empowerment and Development Strategy (NEEDS), Small and medium enterprise (SME), Natural Resources Development and Conservation Scheme (NRDCS), National Poverty Alleviation Programme (NAPEP), Directorate of Food, Roads and Rural Infrastructure (DFRRI), The National Directorate of Employment (NDC), National Poverty Eradication Programme (NAPEP), Better Life Programme for Rural Woman, Family Support Programme (FSP), Family Economic Advancement Programme (FEAP), SUREP. Despite all the programmes introduced by various governments in Nigeria, poverty still persists.

According to Adebayo (2017), many of these aforementioned programmes were well packaged, well intended and thought out strategies to resolve youth unemployment and alleviate poverty in Nigeria. With these beautiful policies and programmes there implementation leave much to be desired. Adebayo (2017) further posited that, as at December 2016, unemployment has soared to 13.9 percent as at the third quarter and quantitatively implying almost 11.2 million Nigeria who want to work could not find one. This was confirmed by the Bureau of Statistics indicates that 60.9 percent of Nigerians were living in absolute poverty. It equally means that most of the people are living on less than \$1 (dollar) a day.

The failure of the government to alleviate poverty in Nigeria seems to indicate that poverty is a very difficult task. Okoye & Eze (2010), averred that efforts by various Nigerian Governments to cushion the effects and reduce rate of poverty in the country have failed as a result of dishonesty, cheating, and excessive pursuit of material things (wealth) by the



few Nigerians who are either in power or within the corridors of power at the expense of human dignity.

### 2.1.2 The Librarian and Poverty Alleviation

Librarians have the necessary weapon and tools to eradicate poverty. With the current built capacity of libraries and their services combined with innovative information delivery and development strategies, Librarians through adoption of more community based approaches, can eradicate poverty systematically and totally. Librarian can empower communities through their maximum participation to identify their information needs, cooperation with other agencies, and incorporation of indigenous knowledge resources of communities, local information delivery and providing reading and practical resources can reduce poverty and deprivation (Mchombu, 2007). However, much more is desired to be done to build the necessary muscle to tackle and curb poverty.

Marx (2016) averred that Librarians can develop and initiate innovative library based programs aimed at addressing, informing and supporting the poverty alleviation programmes of the Government and other Non-Governmental Organisations (NGOs), The roles librarians could play in these poverty alleviation programs cannot be over emphasized, in other words, poverty alleviation programs can only succeed when people are duly informed. They play a crucial role in ensuring that people in communities receive information not only about the anti-poverty programs but also about the way and manner in which such programs affect their lives.

Stilwell (2014), asserted that Librarians could design outreach programs, which can be realized through the organizations of workshops, seminars, use of Mobile buses like the University of South Africa (UNISA) Library buses, or mobile vans, public displays and exhibitions, stating that such arrangements can have a positive impact on rural and urban economic and social transformation and prosperity. Abubakar (2013), reported an example in South Africa where the Kwazulu-Natal Public Library used a 'wheelie Wagon' containing 500 books to provide services to different points. Nigerian Librarians could emulate such a project to curb ignorance and poverty literally. Marx (2016) stated that Librarians could create special collections for the poverty alleviation programs to be displayed in the library, and readers from the community could be directed to the collections. He further stated that they could also formulate Library and Information entrepreneurship program and schemes with the aim of educating and informing people especially rural communities of the relevant and required poverty eradication practices, entrepreneurial skills and productivity like saving practices, collective

bargaining powers through formation of Saving and Credit Cooperatives and unionized markets or Associations. Abubakar (2013) stipulated that this could likely minimize the rate of poverty and too much dependency on government, emphasising that libraries should in addition serve as centres for entrepreneurship training.

Librarian are better positioned to provide space from career training to equip the communities with career development skills. The provision of infrastructural support through Internet and ICTs Librarians act as a back bone for research initiatives which trigger invention and innovations thus creating jobs through ideas acquired from the Internet, research findings, articles, you tube videos or podcasts (Marx, 2016). The basic access to Information can only be realized when there is unlimited and free access to information and Librarians are best positioned to facilitate it. With the relevant ICTs and Internet infrastructure as well as space, Ignorance and illiteracy as a cause of or aspect of poverty can fully be combated (Marx, 2016). The role of librarians therefore is to facilitate Information literacy which is the ability to know when there is a need for information, to be able to identify, locate, evaluate and effectively use that information for the issue or problem at hand (Jain & Saraf, 2013). They further stated that information literacy therefore requires lifelong learning, but for poor people there is need to develop the community system and public library system.

Libraries can partner with government and Non-Governmental Organisations (NGOs) to curb poverty. Mchombu (2007) asserted that partnership arrangements with NGOs and government departments are an important way for libraries to make most of opportunities to promote literacy, fight poverty and develop communities. Libraries could act as grant partners with agencies like World Bank, United Nations, and other development partners to mobilize, solicit and coordinate funding for literacy programs, learning centres, and exhibitions places, among others. Libraries still could act as government agents of development through dissemination of government based information, plans, strategies and policies for poverty eradication. While exploring the role of NGOs in knowledge and Information transfer, Abubakar, (2013) found that NGOs mainly transfer knowledge on credits, awareness building, health and nutrition, agriculture, income generating, environmental issues, etc. If libraries link with development agencies, partners and other range of organization, they could help to acquire and utilize the widest possible range of development information and literacy materials which could be used to fight and end poverty through information literacy (Marx 2016).



## 2.2 THEORETICAL FRAMEWORK

The theoretical framework adopted for this study was the Stage Theory Model of Information Processing Theory. This theory proposed by Atkinson & Shiffrin in 1968 holds that a human mind processes information via application of logical rules and strategies. They stated that for a problem to be solved, critical information about it must be encoded and together with whatever useful prior knowledge already stored, this information will then be used in coming up with a strategy to deal with the problem. The Stage Model Theory holds that storage of information occurs in three stages namely: sensory memory, short term memory and long term memory. For information to transition into short term memory, Huitt (2003) gives two conditions that must be satisfied. One is that the information must have an interesting feature and secondly, it must activate a known pattern. Information that gets into the short term or working memory lasts between 15 to 20 seconds and if repeated severally later, it will last up to a limited time of 20 minutes. The second shortcoming of this memory is that information can only be processed in units of between 3 and 7 at a time in what is called 'chunking' (Miller, 1956).

Information that has been chunked is then pushed to the long term memory where it can be stored for many years. As information is stored in this memory, Huitt, (2003) mentions that it can be organized into several structures like declarative memory which has semantic and episodic memories. Semantic memory includes principles, and different strategies employed in problem solving or learning while episodic memory information is that which forms personal experiences and stories. Further, information can be organized into procedural memory that deals with how things are done and also into images.

Through this theory, how information communicated to policy makers and the poor mass (end-users) in Nigeria are able to retain the poverty alleviation programmes and lessons given to them through the different channels can be explained. The level of complexity of poverty alleviation programmes relayed to the poor masses, whether there is any frame of reference and the familiarity of the language used may affect the way the poor masses may store and ultimately retrieve the information for application.

## 2.3 REVIEW OF EMPIRICAL STUDIES

Obayelu & Ogunlade (2006) descriptively analysed the effect of the use of ICT for gender empowerment and sustainable poverty alleviation in Nigeria. The study described the roles that ICTs have played in the lives of the poor and the ones yet untapped in Nigeria, and how ICTs can assist women

in addressing the chronic issues of widespread poverty. The result of the study using Likert rank order scale showed unemployment, income inequality, polygamy, business failure, sickness and environmental degradation as the main causes of poverty in Nigeria and sustainable poverty alleviation is unlikely to be achieved without the proper use of ICT. Using ICTs to support poverty reduction was found to be possible, practical and affordable if Nigerian government acknowledges its role as a major employer and user of ICT beginning with a development commitment that targets poverty alleviation. In addition, the development and access to social networks through low-cost ICTs, telecentres will enhance timely access to accurate and reliable information by the poor. The study also found that ICTs will not only empower the gender but sustain poverty alleviation programmes which in time past have failed in Nigeria through provision of new and enhanced opportunities for participation in the process of self-determination, economic, social, educational and cultural advancement and employment beyond the scope of traditional institutions and any forms of governance.

Chikaire et al (2015) examined the role ICTs play in poverty reduction among small and medium scale (SMS) farmers in Imo State, Nigeria. Data were collected from 170 (SMS) farmers in Imo State using well-structured questionnaire. Analysis of data collected was done using percentages and mean presented in tabular forms. It was seen from results that 38.2% of the respondents are within the age bracket of 51-60 years. Majority (43.5%) attended secondary school, 48% have put in 11-20 years in farming, while 71.7% have a farm size 0.25-1.5 hectares. ICT devices used include radio, mobile phones, television, among others. On frequency of use of ICT devices, radio is the most frequently used as indicated on a daily basis. They also use telephone, magazines and newspapers. The study found that ICTs play veritable roles such as increasing access to education, health information, and information on diseases/pest outbreak, market information employment generation, and credit opportunities among other. The study also found that social amenities be provided by government so that small and medium scale farmers will have unlimited access to other modern ICT facilities.

Hussaini (2014) examined the various government policies targeted towards poverty alleviation in Nigeria with a view to, come up with policy recommendations for effective and efficient implementation of such policies. Exploration into the literature revealed that governments in power often sought to introduce their own policy and in the process, any other policy inherited from successors are either abandoned absolutely or rendered impotent. The therefore concluded that there is lack of succession planning and some governments even



watch their baby program dying prematurely to give birth to another with different orientation and strategic focus and as such the paper recommended that all programs centred towards poverty alleviation should henceforth be harmonized under the same umbrella, and each unit being accountable and responsible for their actions.

Okpokwasili (2019) assessed the library and information science programme and poverty alleviation in South-South Zone of Nigeria. Two research questions and two null hypotheses guided the study. The study adopted survey research design. The population of the study consisted of 325 library and information science lecturers. The entire population was selected by purposive sampling techniques, because the population was not too large. Structured questionnaire with 19 items was used for data collection. The reliability of the instrument was determined by the use of split-half method using spearman rank order of correlation, while the coefficient was further computed using the Spearman Brown's Prophecy to be 0.84. Means and standard deviations were used to answer the research question, while t-test statistical tool was used to test the null hypotheses. The findings of the study revealed that computer soft-ware development skills and computer maintenance skills are highly possessed by students to alleviate poverty in South-South, Zone of Nigeria. It was recommended amongst others that curriculum planners should incorporate computer soft-ware development skills and computer maintenance skills perceived by lecturers into library and information programme both at the tertiary and secondary level of education.

Ugulu & Oghuvwu (2015) examined the impact of the library and information in promoting national security in Nigeria. The study discussed the concept of library and information, national security as well as the causes of insecurity in Nigeria. The paper also showed how the library and information can contribute effectively in the fight against terrorism, insurgent, youth restiveness, kidnapping and bad government through proper and effective collection and dissemination of information at the right time, mobilizing the citizenry through civic education, information literacy programme. The paper concluded that library and information has a social responsibility in national security and recommended that government should provide more funds to overcome the challenges, comply with the implementation of freedom of information policy so that the citizen would get the right information about their nation at the right time and in right format.

Adekoya (2018) examined the relationship between some elements of human capital development and poverty alleviation in Nigeria, from 1995-2017. It investigated the causal relationship

between the human capital development explicitly measured on health and education and its impact on poverty alleviation measured by per capita income over the period of time stated. The study used Granger causality test through a vector error correction mechanism (VECM), to determine whether the elements of education and health care of any precedence or effect(s) on per capita income. The result indicated that there is no causality either uni-directional or bi-directional between government expenditure on education and health, infant mortality, gross enrolment ratio and per capita income but cases of uni-directional causality existed for literacy rate, life expectancy, and per capita income. The study therefore, suggested that the federal government should ensure that it invests more in education and health as they are essential factors that can help in alleviating poverty.

Ugwoke (2011) examined the role of the public libraries in helping to actualize the United Nations' Development Goals in Nigeria. The exploratory approach was adopted for this study. The role of public libraries in achieving the millennium development goals in Nigeria and need for adequate funding were discussed. The major finding of the paper was that public libraries in Nigeria do not occupy befitting buildings neither do they have requisite resources, services and personnel because of poor funding. From the findings noted that unless public libraries, are properly funded, their services would not be exciting and there would be no innovation. The study therefore recommended that public libraries in Nigeria are expected to follow their counterparts in developing and advanced counties where library services are available on streets and internet services are free in the millennium development goals

### 3.1 METHODOLOGY

Descriptive survey research design was adopted for the study. It was considered appropriate for the study as only a proportion of the population was studied and the findings was then generalized to the entire population. The study was carried out in higher institutions libraries and public libraries and the population of the study was comprised of the librarians in these higher institutions totally Sixty-five (65). The whole population was taken as sample size of the study because it is finite and can be comfortably managed by the researcher. Questionnaire was the instrument adopted for data collection. The data generated were presented, described and interpreted using percentages. The hypotheses for the study were analysed using correlation model and with the aid SPSS.



## 4.1 ANALYSIS OF DATA

### Hypothesis One

#### Correlations

		POLICYUSERS	POVERTY
POLICYUSERS	Pearson Correlation	1	.915**
	Sig. (2-tailed)		.000
	N	260	260
POVERTY	Pearson Correlation	.915**	1
	Sig. (2-tailed)	.000	
	N	260	260

\*\* .Correlation is significant at the 0.01 level (2-tailed).

From the correlation result, communication of research on poverty alleviation to policy makers has a strong positive correlation of .915 with poverty alleviation

**DECISION:** Since the computed correlation coefficient  $r$  .915 is greater than the critical  $r$  value

.765 for two-tailed test at 0.01 level of significance, we therefore reject the null hypothesis, meaning that, there is a significant relationship between communication of research on poverty alleviation to policy makers and poverty alleviation

### Hypothesis Two

#### Correlations

		POVERTY	ENDUSER
POVERTY	Pearson Correlation	1	.821**
	Sig. (2-tailed)		.000
	N	260	260
ENDUSER	Pearson Correlation	.821**	1
	Sig. (2-tailed)	.000	
	N	260	260

\*\* .Correlation is significant at the 0.01 level (2-tailed).

From the correlation result, communication of policies on poverty alleviation to end users has a strong positive correlation of .821 with poverty alleviation

**DECISION:** Since the computed correlation coefficient  $r$  .821 is greater than the critical  $r$  value .765 for two-tailed test at 0.01 level of significance, we therefore reject the null hypothesis, meaning that, there is a significant relationship between communication of policies on poverty alleviation to end users and poverty alleviation

## 4.2 DISCUSSION OF FINDINGS

Poverty is endemic, however lack of communication to the poor massive makes it abject. Lack of communication has been seen as a factor that inhibits poverty alleviation. There are so many scholarly publications on poverty alleviation but because they aren't duly communicated to the policy makers (government), such researches remain moribund and poverty persist. In some situations

where the researches are communicated to the government and poverty alleviation policies and programmes formulated, if such policies and programmes aren't communicated to the end users (poor masses), poverty alleviation won't be complete. Investigating the role of the Librarian in communication of research and policies for effective poverty alleviation in Nigeria, the study established a positive significant relationship between communication of research to policy-makers and poverty alleviation. Strengthening the librarians' communication skills in order to get the target group right, get the format right, get the timing right, will be useful in communicating researches to policy makes for poverty alleviation. Close collaboration between librarians and policy-makers, having an appropriate platform from which to communicate; a platform of broad engagement such as public campaign and support of research networks, especially electronic and/or regional networks will



also be effective in communication of research to policy makers for poverty alleviation.

The study also revealed a positive significant relationship between communication of government policies/programmes to end users and poverty alleviation. Improving the existing ways of communication, and possibilities for new ways of communication through Information and Communication Technology (ICTs), participative communication, community mapping for the purpose of communication and favourable political environment (local laws and beliefs) can make communication of research by Librarians to the poor masses more effective.

## 5. CONCLUSION

The government of Nigeria has in various tenures formulated policies and initiated programmes aimed at alleviating poverty in the country. Failure of these policies and programmes to accomplish its intended result has been blamed on corruption. However this research has shown that if researches and information regarding poverty alleviation are communicated to the government duly, it will play a significant role in assisting them formulate policies and initiate programmes. These policies and programmes went on their own automatically alleviate poverty if the beneficiaries of such programmes are not duly communicated about the policies. This research therefore concluded by asserting that it is the role of the librarians to bridge these gap by enhancing their communication skills in other to appropriately communicate researches to policy makers and policies to end users.

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**APPENDIX**

A	Communication of research to policy makers	SA	A	U	D	SD
1.	Strengthening the librarians' communication skills in order to get the target group right, get the format right, get the timing right, will be useful in communicating researches to policy makes for poverty alleviation?					
2.	Close collaboration between librarians and policy-makers will make communication of research effective					
3.	Having an appropriate platform from which to communicate; a platform of broad engagement Such as public campaign is more likely to be effective for communicating researches for poverty alleviation.					
4.	Support of research networks, especially electronic and/or regional networks will be effective in communication of research for poverty alleviation					
	<b>Mean score:</b>					
B	Communication of research to end users					
1	Improving the existing ways of communicating, and possibilities for new ways of communicating through Information and Communication Technology (ICTs).					
2	Librarians can promote participative communication for empowerment of the poor masses					
3	Favourable political environment (local laws and beliefs) can make communication of research by Librarians to the poor masses more effective					
4	Community mapping can be an effective tool in communication of policies and programmes to the poor masses					
	<b>Mean score:</b>					
C	Poverty Alleviation					
	Poverty is endemic, however it can still be alleviated?					
	The various past and present government programmes on poverty alleviation cannot address the problem of poverty in Nigeria without effective communication of researches to policy makers and communication of policies to end users who are the masses					





# FEASIBILITY STUDIES OF NEW GHAT ROAD PROJECT CHAINAGE 50+050 TO CHAINAGE 55+290 IN THE STATE OF MAHARASHTRA

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## ABSTRACT

*Feasibility studies are carried out to validate expenditure on infrastructure projects. In spite the importance of the studies in supporting decisions related to public expenditure on infrastructure projects, there are no attempts to assess such studies after construction. Ghat Roads are approach routes into the mountainous region like Western and Eastern Ghats. They generally served to connect to sea side regions with the upper region Deccan plateau of the Indian Subcontinent. An analysis of a feasibility study for a state highway ghat road construction project is presented in this paper with an emphasis on the estimates, and forecasts presented in that study to weigh expected benefits from the project against expected costs.*

*The Ghat road will improve connectivity between two tahsils, reducing the travel distance by 40.00 KMS. The Proposed road aims to reduce the Distance and travel time between two districts. This would facilitate trade, and commerce between two districts and reduce the traffic pressure on present roads passing through the existing ghats which are used to travel in kokan presently.*

*Objective of the project is to Study and Annalise the approved alignment, Carry out Detail Project Report using relevant IRC Codes, Carry out Tunnel feasibly report, Cost comparison between Tunnel and Design Ghat Alignment. Methodology for this project will be collecting data, Design of alignment, preparing Design drawings for via duct/Bridge/ Flyover, Carrying out tunnel feasibility report, preparing detail estimate, cost comparison of tunnel and approved alignment. The cost of tunnel construction is double the cost of construction of road including cost of 1100 m long flyover proposed. With due consideration to the budgetary cost estimate, it can be seen that tunnel construction in not economically viable. It would thus be prudent to construct road as per design ghat road alignment.*

**KEYWORDS:** *Construction value, Infrastructure projects, Economic feasibility, Feasibility validation.*

## 1. INTRODUCTION

Examples of infrastructure projects include tunnels, bridges, highways and power generation plant. Infrastructure projects can be arranged in classes or categories as large construction project that utilize extensive amount of assets concerning money, materials, labour, equipment and time. Huge expenditures on infrastructure projects need to be compared against the anticipated benefits resulting from these projects to the public and the national economy. Therefore, feasibility study needs to be conducted in advance, before the construction of infrastructure project. Highway construction and expansion in India has crossed 10,000 KMS. During the year 2018-19, which translated to 30 KMS. Road construction per day during the budgetary year which

is more than doubled of 12 KMS per day during the year 2014-15.

The economic feasibility study of a project is an approximate cost of the probable profitability of that project, or a study that computes the expected outcomes from a project relative to its cost. Owners, decision makers and banking institutions build their resolution to go ahead with and/or finance any project based on the results of the feasibility study of that project. Ensuring the validity of economic feasibility studies of infrastructure projects is a vital step in ascertaining that decisions related to the construction of infrastructure facilities is based on consistent and standard procedures that avoid the use of confusing or insufficient data.

The area is one of the world's ten "hottest biodiversity hotspots" and has over 7,402 species of



flowering plants, 1,814 species of non-flowering plants, 139 mammal species, 508 bird species, 179 amphibian species, 6,000 insect's species and 290 freshwater fish species; it is likely that many undiscovered species live in the Western Ghats. At least 325 globally threatened species occur in the Western Ghats.

The government of Maharashtra, has decided to construct a Ghat road connecting Two State Highways. The proposed two-lane state highway connects various places in Kokan with the places which lie in Western Ghats. The Ghat road will improve connectivity between two tahsils, reducing the travel distance by 40.00 Kms. The Proposed road aims to reduce the Distance and travelling time between two districts. This would facilitate trade, and commerce between two districts and reduce the traffic pressure on present roads passing through the existing ghats which are used to travel in kokan presently.

## 2.0 PROBLEM STATEMENT

The proposal for construction of a two-lane road connecting two state highways in two districts of Maharashtra. The Ghat road will improve connectivity between two tahsils, reducing the travel distance by 40.00 Kms. The project involves total 25.76ha. Of forest land in both the district. The Proposed road aims to reduce the Distance and travelling time between two districts. This would facilitate trade, and commerce between two districts and reduce the traffic pressure on present roads passing through the existing Ghats which are used to travel in kokan presently, which also bisects the wildlife sanctuary. There will be wild life mitigation measures taken into consideration during pre and post tendering stage provision of animal over/under passages, guide walls, noise barriers on bridges, etc. for proper movement of wild animals.

## 3.0 LITERATURE STUDY

To work on Objectives, we did the literature survey and from survey, we found following important references to relate the objectives.

### First literature - Advanced Road Safety for Ghat Roads at Amboli

In this study for provision of solution they categorized this ghat into 3 stages, based on risk factor and vision factor. The risk zones are divided on the basis of various factors such as physical road conditions, intensity of curve i.e. sharp curve or smooth curve, critical points in ghat sections like waterfall, sunset point etc. By modification in the ghat road they can make Amboli ghat safe for traveling. Also, from data collection they came to know that accidents occur in Amboli are mostly because of carelessness of driver having no information about the road, drink and drive cases. For

that awaking the people and also providing check post at suitable location is best solution. As Amboli receives max rainfall so that the wear and tear of road is happened for that it is necessary to periodic maintenance of road, use standard quality material so that road can provide service for longer time. In this study they tried to provide best solutions so that accidents can be reduce with economy and people feel safe while using the road.

### Second literature - Evaluation of Accidents on Curves in Ghats Sections

In this study they have explained that the latest emerging technologies for road safety focuses on finding ways to avoid or minimize road accidents to road users with special concern by reducing the causes of road accidents. Research in this paper includes important issues like road accident and their impacts, causes of this accident, effect of accident, prevention and control that we can improve this situation. Percentage of accident in ghat area is increasing day by day. This paper includes some solutions and ideas to improve safety in ghat areas. Road accident is increasing every day and it is dangerous to all people, in this case all people must realize and give more attention to decrease the rate of road accident So Road safety education is therefore the need of hour. As a conclusion, there is lot of causes of road accidents. So, there is a clearly need of road safety education and it should be directly given to the road users who are frequently involved and injured in road accident.

### Third literature - Study and Application in Renovation of Hill Transport

This study and analyse is about the existing pavements by means of using several methods. Generally, it is an idea to renovate the pavement when there are some possibilities. This study is concerned to predict the existing road in hill station. The work initially starts from survey on existing pavement and their condition i.e., it may include culvert, pavement dimensions, road width etc., and after the process of surveying we use L.S and C.S method to find the road level. It may help to make the horizontal alignment upon the road. Finally, the designing process is carried out. At pavement design, they consider number of conditions over the project. This study mainly notifies whether any possibility to renovate the existing roads and also, we used some software to analyse the data regarding the pavement. The application of this project is 1. Minimum distant 2. Easily accessible 3. Time consideration. Apart from that we have referred several journals to gain some ideas in renovation and also gave possible advantages over renovation of pavement. The key to a successful project is in the planning. Creating a project plan is the first thing we have done before undertaken this project. Initially they consider two



aspects site survey and traffic survey. The former involves analysis of road width, transition curves, soil type, hairpin bends and damaged culvert. Whereas for the latter they had an already existing hill road as of 25% and designed the pavement, hairpin bend, retaining wall. Having followed all the steps mentioned above we have made a study in hill transport renovation.

#### **Fourth literature- Investigation of the mass movement in varandha region, western ghat of Maharashtra using geospatial technique**

In this study they have explained that Mass movements are not an uncommon phenomenon in Western Ghat area. Especially, during the rainy season, along the Bhor-Mahad State highway faces number of unusual mass movement incidents such as rock fall, landslides and creep movements through which big blocks, rubbles, soil mixed boulders slides and spread along the road, affected the road traffic jam problems, causes large scale damages road constructions and human lives. The highway has deep cut along its rout with mostly untreated, unsafe slopes and presence extreme climatic conditions. For the prevention of such mass movements, there is need of ground improvement techniques for the stability of slopes. The controlled measures are to be considered while construction of new ghat. Unless otherwise the evaluation is properly made on stability factors, the vulnerability is going to be high in future due to increase in traffic and developments. Therefore, by keeping all these views in the mind, there is need of implementation of above-suggested measures and further, detail investigations to stabilize the mass movements in this area.

#### **Fifth literature-Advance Road Safety for Ghat Road's at Hairpin Bend**

In this study, we got to know about the accident which occurs on the road at Ghat section. We understand the causes and effect of accidents and then founded out a solution introducing a new technique to avoid such accident. The new technique consists of two CCTV cameras and two LCD screen which displays the live scene captured from the CCTV. This help in reducing the accidents and to enjoy the safer ride. Life is important than any other thing, once gone cannot be regained. So, to save this valuable life, this method has important role. It can help Road users at Ghats from being killed in a serious injury.

#### **Sixth literature- Review on Study the Investigation of mass Movement along Malshej Ghat**

After studying various parameter and investigation the site they measurably found that anthropogenic and natural phenomenon are the reason for landslide

in malshej ghat. Heavy rainfall in July to August 2017 is a main reason of landslide in malshej ghat. There is need to provide various landslide control and prevent measures like netting, bolting and short creating etc.

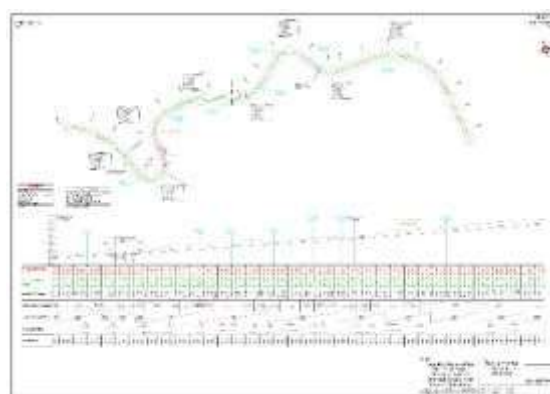
#### **4. METHODOLOGY TO BE OPTED-**

1. Collection of Site Ground Data and documentary data.
2. Study and Annalise, the approved alignment.
3. Horizontal and Vertical Design of Approved Alignment using auto CAD software.
4. Preparing Detail Estimates using estimate software.
5. Tunnel feasibly report for the ghat site for conservation of wild life in the forest area.
6. Results and analysis. (Cost comparison between Tunnel and Design Ghat Alignment).
7. IRC Codes used IRC SP 73-2015, IRC 36-1970, IRC 38-1998, IRC SP 23-1993, IRC 037-2012, IRC 52-2001, IRC SP 48-1998, IRC 67-2012, IRC 35-1997.

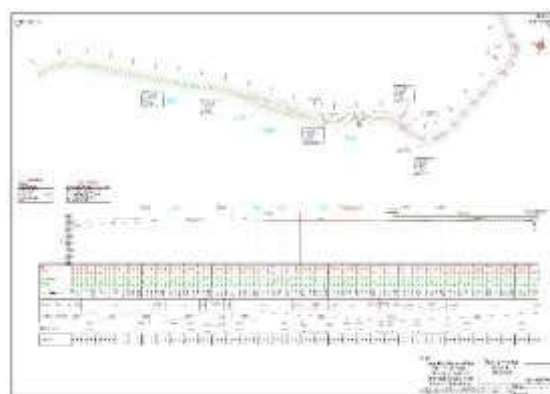
#### **5. RESULTS AND ANALYSIS**

##### a. Design Drawings:

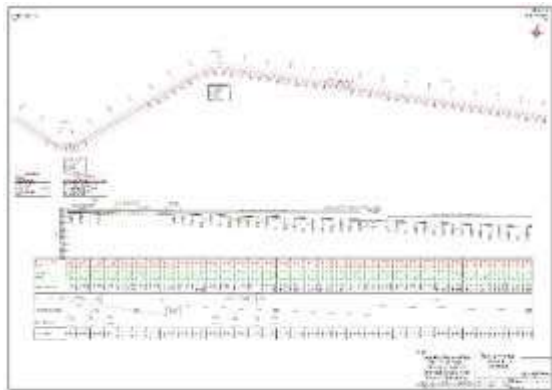
1. Plan and profile for CH 51+050 to CH 52+000



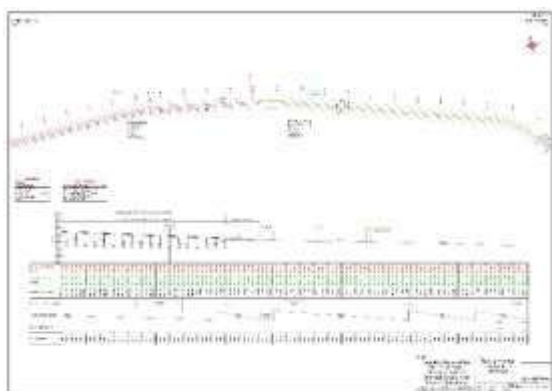
2. Plan and profile for CH 52+000 to CH 53+000



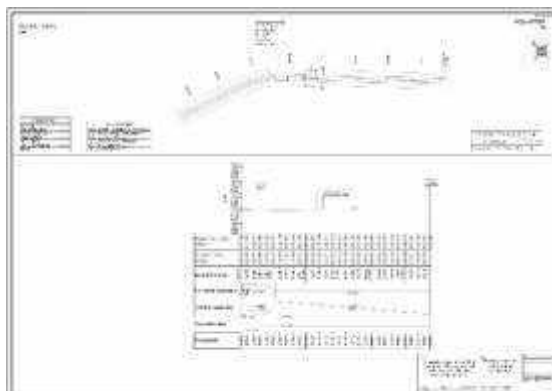
3. Plan and profile for CH 53+000 to CH 54+000



4. Plan and profile for CH 54+000 to CH 55+000



5. Plan and profile for CH 55+000 to CH 55+290



b. Detail estimate Recapitulation sheet.

1. Estimated Cost for 1100m vai duct and 80m flyover: - **Rs.57, 33, 67,765.00/-**

**RECAPITULATION - SHEET**

Sr No	Sub-Estimate Title		Amount (Rs.)
1	Major Bridge (Flyover)		57,33,67,765.00
2	Q.C Charges & Royalty		38,34,683.00
		<b>Sub Total</b>	<b>57,72,02,448.00</b>
	Add work contingency	@ 4.00 %	2,30,38,098.00
	Add Insurance towards Labour	@ 0.50 %	28,86,012.00
	Add G.S.T. on Roads & Bridges	@ 12.00 % of Rs. 573167764.71	6,88,04,123.00
	Add Computer charges	@ 2.00 %	1,15,44,989.00
	Add Maintenance for 5 years	@ 2.50 %	1,44,30,061.00
		<b>Total</b>	<b>69,79,54,800.00</b>
	Deduct For hard Rock Recovery as per attached Statement		-1,74,900.00
		<b>Say Rs.</b>	<b>69,77,79,840.00</b>

2. Estimated Cost for road portion in ghat and 40m flyover: - **Rs. 51, 58, 17,041.00/-**

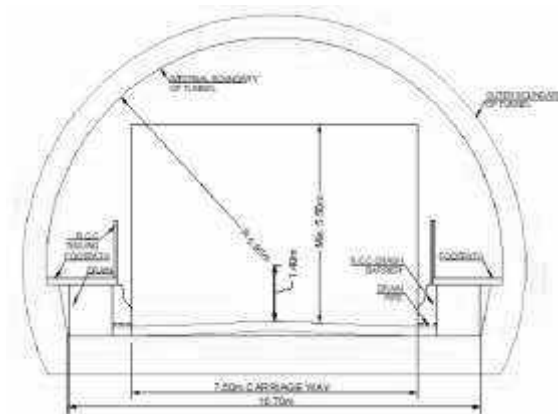
**RECAPITULATION - SHEET**

Sr No	Sub-Estimate Title		Amount (Rs.)
1	Major Bridge (Flyover)		16,59,80,233.00
2	Road		32,74,64,751.00
3	Minor Bridge		1,43,09,761.00
	( @ CH - 51/895, 52/710 & 52/790)		
4	C.D Work		80,62,796.00
5	Q.C Charges & Royalty		14,90,207.00
		<b>Sub Total</b>	<b>51,73,07,248.00</b>
	Add work contingency	@ 4.00 %	2,06,92,290.00
	Add Insurance towards Labour	@ 0.50 %	25,86,536.00
	Add G.S.T. on Roads & Bridges	@ 12.00 % of Rs. 515817040.71	6,18,98,043.00
	Add Computer charges	@ 2.00 %	1,03,46,145.00
	Add Maintenance for 5 years	@ 2.50 %	1,29,12,681.00
		<b>Total</b>	<b>62,37,62,943.00</b>
	Deduct For hard Rock Recovery as per attached Statement		-49,16,921.00
		<b>Say Rs.</b>	<b>61,88,46,024.00</b>

**c. Tunnel feasibility report.**

**Dimensions of Tunnel**

The proposed road alignment is for two lane standard state highway. The internal dimensions of tunnel for two lane state highway along with provisions for footpath, stream, crash barrier etc., are shown in figure below. The inside cross-sectional area of tunnel is 75 Sqm.



Alternative alignments for tunnel

The two alternative alignments have been identified giving due consideration to topographical features at the entry and exit points and that along the proposed alignment, gradient along the alignment, requirement of minimum cover over the crown of the tunnel etc. The two identified alternative alignments are shown in figure

#### Tunnel Alignment-2&3

The tunnel alignment 2 & 3 is identified as an alternative to proposed road alignment majorly passing through plateau with an objective to cross the forest area without disturbing the flora and fauna.

The Tunnel Alignment - 2 & 3 extends between Ch. 51.150 km and 54.200 km of proposed road alignment. The total length of the tunnel for tunnel alignment - 2 and 3 is 2100m and 2200m respectively as against total length of road as 3050m. The tunnel alignment - 2 reduces travel distance by 960m i.e., 32% reduction in travel distance and the reduction in travel distance for tunnel alignment - 3 is 28% (Reduction in distance of 850m). The finished road level at Ch. 51.150 km and Ch. 54.200 km is 606m and 644m respectively. Thus, the average road gradient would be 1.8% and 1.7% for tunnel alignment 2 & 3 which is less than the preferred gradient of 3% for long tunnels. The longitudinal profile along the tunnel alignment - 2 & 3 is shown in figure respectively.

As can be seen from the figure6, the tunnel alignment- 2 connects Ch.51.150 km and Ch.54.200m by a straight line and thus has a shorter length as compared to tunnel alignment - 2. However, tunnel alignment -2 crosses two natural streams. Giving due considerations to the lowest bed level of natural stream at location where tunnel alignment crosses natural stream the over burden above the tunnel would be just about 10m. This would pose lot of difficulties in constructing the tunnel in stretch where the alignment crosses the natural streams and would call for elaborate stabilization measures to construct the tunnel. There would also be a need to provide elaborate drainage measures to take care of thesepage.

Tunnel alignment - 3 ensures adequate overburden over the crown of the tunnel for major part of the alignment and circumnavigates natural stream 2, thus this alignment would have much lesser issues pertaining to stabilization and seepage. However, this alignment is longer than alignment - 2 by110m.The summary of length of road as per approved drawing and length of tunnel as per identified alignment is tabulated in table below.



Figure - Tunnel alignment - 2

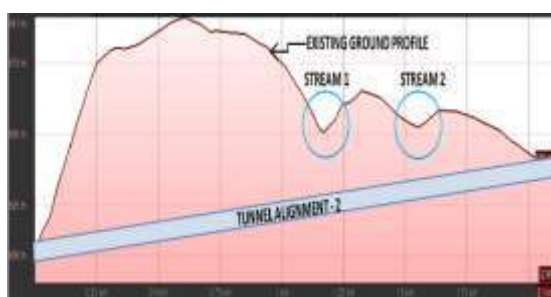


Figure- Longitudinal Profile along tunnel alignment - 2



Figure- Tunnel alignment - 3

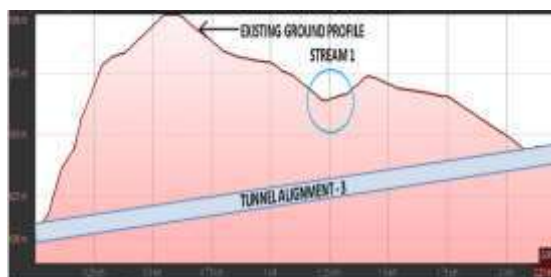


Figure- Longitudinal Profile along tunnel alignment - 3



**Summary of Length of road as per approved drawing and Length of tunnel as per identified alignments**

Sr. No.	Description	Length of road as per alignment proposed in GAD (m)	Length of tunnel as per alternative alignment (m)
1	Alternative Alignment - 2 (Ch.51.150 - 54.200 km)	3050	2100
2	Alternative Alignment - 3 (Ch.51.150 - 54.200 km)	3050	2200

**Techno-Economic Feasibility Analysis**

A techno economic feasibility analysis is carried out to evaluate the feasibility of tunnel along two identified alternative tunnel alignments. The pros and cons of tunnel construction along each alternative tunnel alignment are discussed hereunder:

Tunnel Alignment -2

As can be seen from figure 8a, the tunnel alignment crosses two natural streams. Giving due consideration to the fact that bed of natural stream at location where alignment crosses natural stream is just 12m above the crown of tunnel, high seepage is expected inside the tunnel. To effectively mitigate the seepage, there shall be requirement of completely lining the tunnel and providing water-proofing system including HDPE membrane for section of tunnel extending 25m on either side of natural streams. With low overburden above the tunnel crown in major portion of alignment beyond natural stream towards the end, the tunnel section needs to be provided with steel ribs and concrete lining. With almost 50% length of the tunnel lined with steel ribs and concrete lining the average cost of construction of tunnel would be INR. 13.24 lakh per running meter for alignment – 2. Overall cost of construction for the tunnel for alignment – 2 is thus estimated to be INR. 278 cores including provision for audits, fire safety, tunnel lighting etc.

Tunnel Alignment -3

The length of tunnel in alignment - 3 increases by 110m as compared to length of tunnel in alignment-2. The tunnel alignment -3 crosses natural stream 1, but there is a sufficient cover of almost 35m above the crown of the tunnel. Secondly the alignment by-passes natural stream 2. However, provision of concrete lining has been considered for a distance of 200m wherein the tunnel alignment crosses natural stream 1. As mentioned in figure above, there shall be requirement of cut and cover tunnel at both the ends of tunnel. The remaining stretch of tunnel

shall be lined with shotcrete and bolting. The average cost of construction of tunnel would be INR. 12.0 lakh per running meter for alignment – 3. Estimated cost of construction for the tunnel for with an overall length of 2200m along alignment-3 would be INR.264 cores including provision for audits, fire safety, tunnel lighting etc.

**Block Estimate Tunnel Alignment –II:-Rs. 2,781,000,000.00**

Sr. No.	Tunnel Section	Unit	Quantity	Rate (INR)	Amount (INR)
1	Cut and cover	m	200	1,200,000.00	240,000,000.00
2	Portal/ Ribs + RCC lining	m	850	1,400,000.00	1,190,000,000.00
3	Shotcrete and rock bolting	m	1050	1,000,000.00	1,050,000,000.00
4	Audits and cross passage	m	300	600,000.00	180,000,000.00
5	Ventilation shaft	m	0	300,000.00	-
7	Approach road to audits	m	1000	40,000.00	40,000,000.00
Total (A)					2,700,000,000.00
Add 3% for electrification, ventilation equipments, fire safety (B)					81,000,000.00
Total cost (A+B)					2,781,000,000.00
Total length of tunnel					2,100.00
Cost per running meter of tunnel					1,324,285.71

**Block Estimate Tunnel Alignment – III:-Rs. 2,636,800,000.00/-**

Sr. No.	Tunnel Section	Unit	Quantity	Rate	Amount
1	Cut and cover	m	200	1,200,000.00	240,000,000.00
2	Portal/ Ribs + RCC lining	m	250	1,400,000.00	350,000,000.00
3	Shotcrete and rock bolting	m	1750	1,000,000.00	1,750,000,000.00
4	Audit and cross passage	m	300	600,000.00	180,000,000.00
5	Ventilation shaft	m	0	300,000.00	-
7	Approach road to audits	m	1000	40,000.00	40,000,000.00
Total (A)					2,560,000,000.00
Add 3% for electrification, ventilation equipments, fire safety (B)					76,800,000.00
Total cost (A+B)					2,636,800,000.00
Total length of tunnel					2,200.00
Cost per running meter of tunnel					1,198,545.45

Cost comparison of Ghat Road Alignment and Tunnel Alignments.



Total cost of construction required to construct ghat as per table 2 & 3	Total cost of construction required to construct Tunnel Alignment - II as per table 7	Total cost of construction required to construct Tunnel Alignment - III as per table 8
57,33,67,765+ 51,58,17,041= 1,08,91,84,806	2,78,10,00,000	2,63,68,00,000

## 6. CONCLUSION

The variations in the sanctioned alignment and the design alignment occurred due to the survey data collected during sanctioned alignment was done using local TBM (Temporary Bench Mark) and during design stage it was done using DGPS (Differential Global Positioning System)

Tunnel alternative alignment that alignment 2 and 3 for tunnel have gradient less than 3% and also help to minimize on ground construction activity in reserve forest. Cost of Alternative 3 is less than Alternative 2 due to reduction in length of tunnel section requiring support system of steel ribs and concrete lining. However, even for Alternative alignment 3 for tunnel, the cost of tunnel construction is double the cost of road construction including cost of 1100 m long flyover proposed for allowing unhindered movement of wild life across the alignment.

With due consideration to the budgetary cost estimate, it can be seen that tunnel construction is not economically viable. The project cost is getting doubled with the introduction of tunnel and there are no distinct advantages of tunnel construction in lieu of proposed road alignment including flyover, which can offset the two fold increase in project cost tangibly or intangibly. It would thus be prudent to construct road as per proposed ghat road alignment for Construction of Ghat Road.

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