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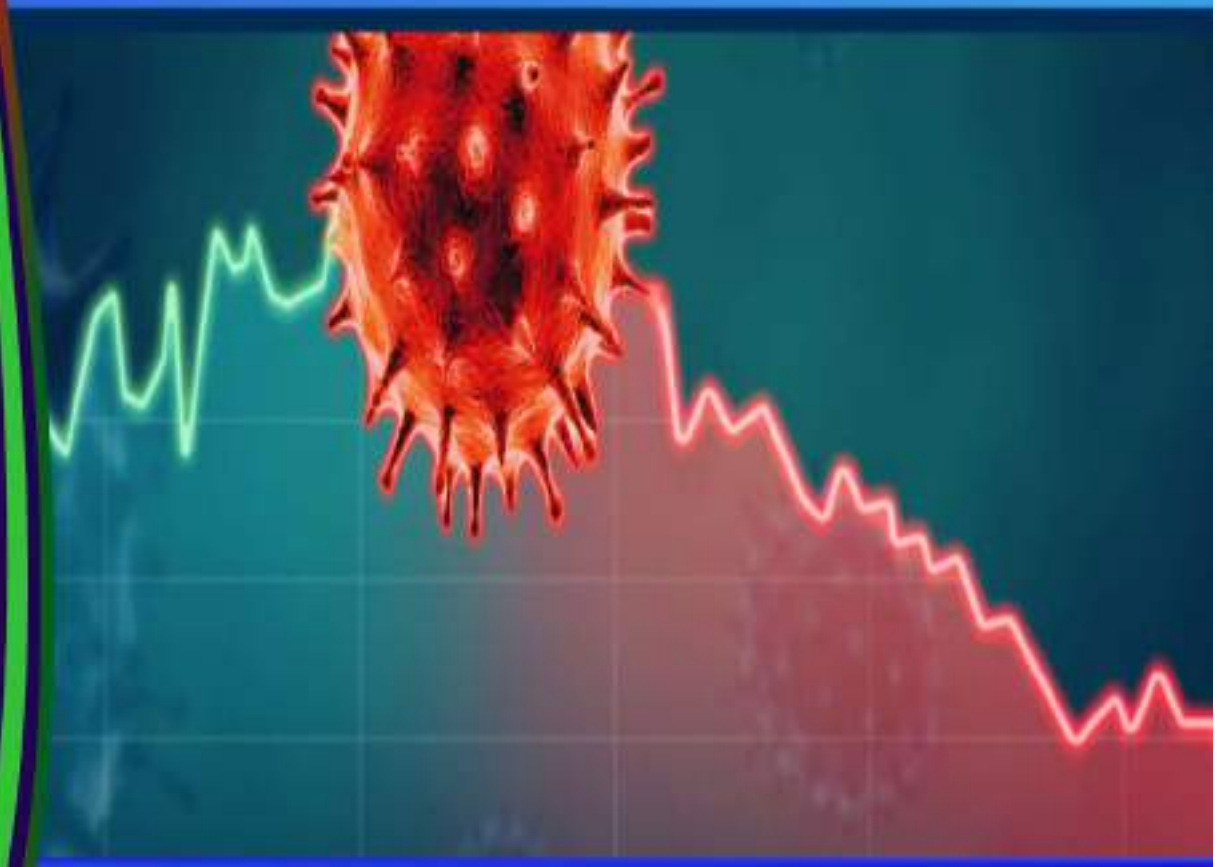

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# IMPACT OF COVID-19 ON REAL ESTATE AND CONSTRUCTION SECTOR

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**ABSTRACT** **DOI No: 10.36713/epra11760** **Article DOI: https://doi.org/10.36713/epra11760**

***COVID-19 outbreak is the greatest global health crisis in many years. It has had a dramatic effect on workforces and workplaces all around the world, as it has spawned a massive change in the working atmosphere and raised the level of employees' concerns about their mental health and physical wellbeing. The construction industry has been significantly affected by the COVID-19 pandemic and has been challenged to improve the safety and wellbeing of its workforce. Overall this sector was impacted negatively but not that much due to government and this sector is again regaining control at a faster pace post covid as compared to other sectors.***

**KEYWORDS:** ***COVID-19, Real Estate, Construction Sector***

## INTRODUCTION

To start with much has been expounded on Coronavirus in the beyond couple of months. Gradually India is detaching its attack attitude and preparing itself for the financial effect of this pandemic. Studies are progressing about the effect of the pandemic on land and development with respect to the effect of Coronavirus on their business activities. The goals of the review were twofold:

- To investigate the impact of COVID 19 across industry sectors
- To investigate perceptions about the future

The study was exploratory in nature. Given the lockdown all over the country, data was collected through a *questionnaire* administered through Google forms. Respondents were given a list of questions

The presence of Coronavirus has not just prompted changes in the medical care framework, but its effect has additionally prompted changes in the worldwide economy. The results of the downturn from a decade prior, which caused high joblessness, are yet to be felt in the economy, and with the ongoing difference in business, the monetary emergency is developing. The world is encountering a decrease in stock costs and a decrease in oil costs. Modern creation has declined, and the administration market is keeping a decrease in benefits (*McKibbin, and Roshen, 2020).* There was a conclusion of associations, employment misfortunes, and, surprisingly, an adjustment to way of life. The population has decreased its developments to a base, by going less to business and public structures, and the significance of the rural family is progressively perceived.

To answer the current and critical danger of Coronavirus, and to lay the basis to manage what might be extremely durable changes for the business after the emergency, land pioneers should make a move now. Many will concentrate cash the board to zero in on proficiency and change how they go with portfolio and capital use choices. A few players will feel a much more noteworthy need to keep moving than before to digitize and give a superior — and more

unmistakable — occupant and client experience. Furthermore, as the emergency influences business occupants' capacity to make rent installments, numerous administrators should settle on a great many choices for explicit circumstances instead of making only a couple, expansive based broad choices.

Most real estate players have been shrewd in any case choices that safeguard the wellbeing and soundness of all workers, occupants, and opposite end clients of room. The savviest will currently likewise contemplate how the land scene might be forever different later on, and will adjust their procedure. Those that prevail with regards to fortifying their situation through this emergency will go past adjusting: they will have made intense moves that develop associations with their representatives, financial backers, end clients, and different partners.

After covid-19 we have seen a gradual growth in the metaverse real estate has been seen From 2021 to 2026, the metaverse real estate market is expected to grow by $5.37 billion, at a compound annual growth rate of 61.74%, driven by the growing popularity of mixed reality and cryptocurrencies, according to a report from global market research firm Technavio.

The COVID-19 experience could also permanently change habits that may affect demand for other real estate assets, such as hospitality properties and short-term leases. Even a short moratorium on business travel could have lasting impact when alternatives such as video conferences prove sufficient or even preferable. Near-shoring of supply chains may further reduce demand for cross-border business travel, and consumers who are afraid of traveling overseas may shift leisure travel to local destinations.

## STATEMENT OF THE PROBLEM

Construction industry members — including owners, developers, contractors, subcontractors and supply chain vendors — have experienced varying degrees of impacts as a result of the COVID-19 pandemic. The nature of the impacts and extent of the ramifications are in large part dependent upon the location of both the respective businesses and underlying projects. Direct impacts have ranged from a slowdown of available goods and labour through to suspensions and, in some instances, terminations of parties or entire projects. Construction activities remain in flux in some states and cities depending upon whether construction is classified as an essential business.

As a result, the COVID-19 crisis has led to the need for industry members to address both short-term and long-term business challenges, as well as formulating project-by-project solutions in the face of a new global and national environment. The full breadth and scope of the changes needed to address issues arising from the pandemic are still unknown, and this analysis is likely to continue to evolve until a vaccine or other curative measures are in place on a global basis.

These new realities touch almost every aspect of the construction process, and specifically such issues as: contract or project notices for default, scheduling and adjustments; project suspension, termination and reinstatement; Occupational Safety and Health Administration (OSHA) and workplace safety compliance; work force management; material, subcontractor and supply chain delays and impacts; risk management and insurance; claims avoidance or, alternatively, claims management; and the disputes process.

## OBJECTIVE

1. To know, what were the challenges faced by the brokers.
2. To know, what were the challenges faced by common people.
3. To analyse the future outcomes if something like Covid hits again.
4. To analyse the consumer behaviour that is how the rich behaved vs the poor.
5. Challenges faced by businesses in both real estate as well as construction sector.

## METHODOLOGY

In this study, the base of data provided is through primary research. Primary research has been done with help of questionnaire through google forms. Our study is focused on how the common people have been affected by covid-19. How the prices of land increased and decreased and supply and demand of it as well. What was the scenario in India as compared to the rest of the world. The other method used is secondary research. This collection of data has been mainly done from news and media, advertisement, comments and other articles.

## RESULTS AND DISCUSSION

The impact of Coronavirus on the Indian real estate sector was stifling to the point that it brought property transactions to a near-halt when the nation went into a complete lockdown during both waves. Since then, the market has taken several strides towards recovery, and just when it seemed the revival was not far.

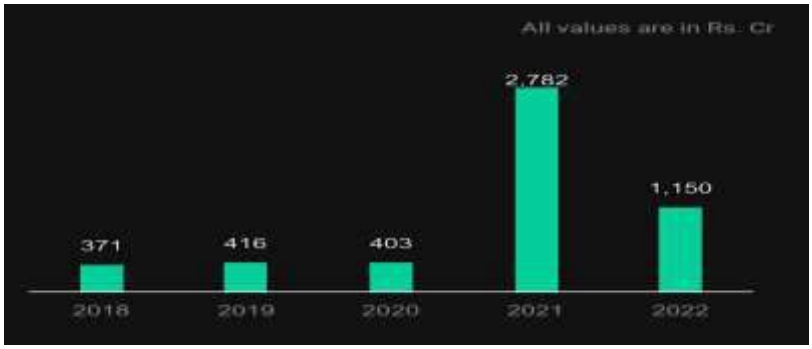
Through the studies we have found that the real estate as well as the construction sector was negatively impacted. This was due to various factors, these factors did not damage it directly but indirectly. The first lockdown had lead many labour workers to migrate to their homes. The skilled as well as unskilled workers had to stop work and go back to their homes. The big construction companies had to bear heavy losses as they had to pay the workers even in lockdown when there was no work. The rate of inflation was also increased during covid due to which the prices of raw materials increased. Nobody was willing to or able to

pay for the raw materials as people had no income and unemployment rate was also increasing. The supply of raw material also decreased due to which there was delay in work.

The unprecedented scale of the impact of COVID-19 on Indian real estate can be gauged from the fact that the sector has incurred a loss of over Rs 1 lakh crore since the pandemic broke out . According to the report, the pandemic resulted in a serious liquidity crunch for real estate developers. The credit shortage brought down the residential sales from four lakh units in 2019-20 to 2.8 lakh units in 2020-21 across the top seven cities of India.

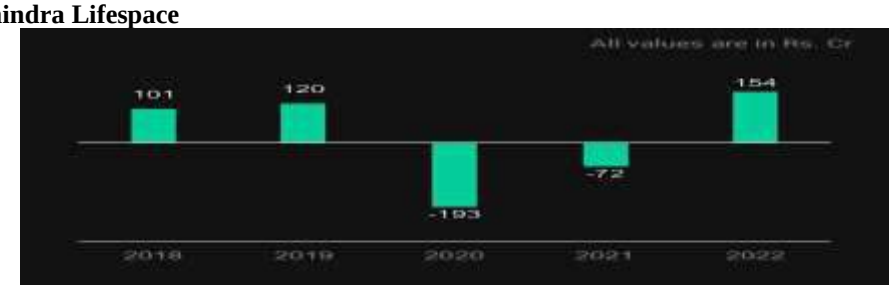
Many construction companies were seen with reducing profits as we can see in the below chart.

**A. PRESTIGE ESTATES**




**B. National Buildings Construction Corporation Ltd.**

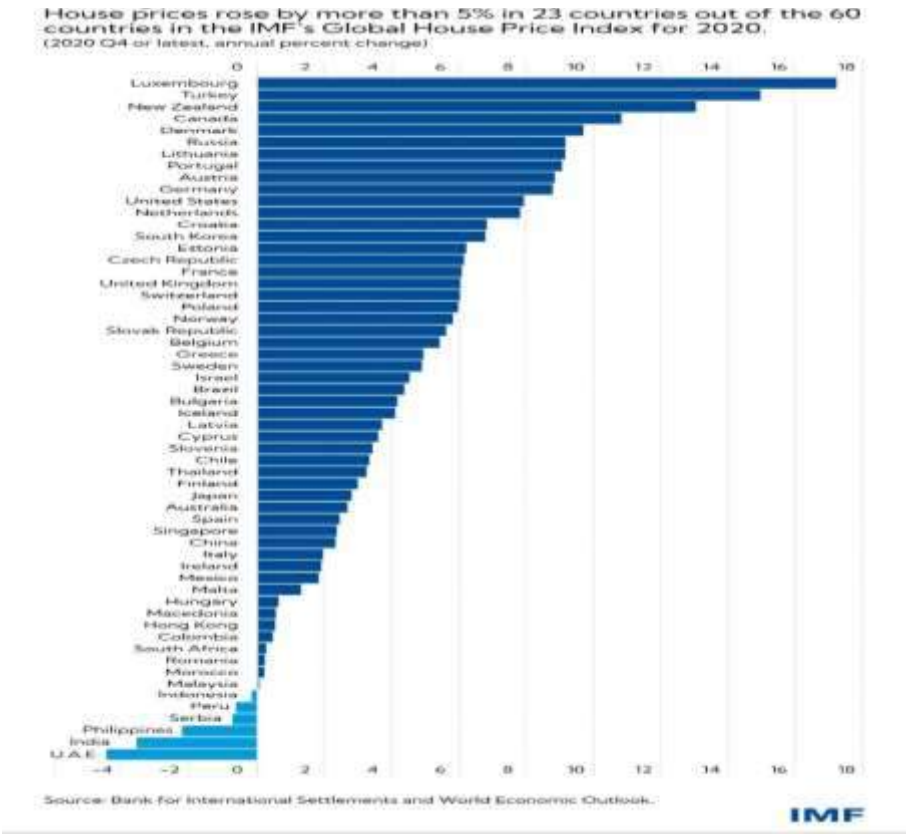

**C. Mahindra Lifespace**




Due to high reducing profits, government increased liquidity of funds. This led to a little stable market. The government also invested in many projects during covid, to save real estate and construction sector. For example, The National Highways Authority of India (NHAI) , has continued with all its 480 projects — worth Rs 5.1 lakh crore and covering a length of 25,000 km. The new project launches across India increased by 71 percent between January and June 2021. This boost in new launches can be attributed to the stamp duty reductions in various States.

As compared to the rest of the world , India was affected less and it also showed a decrease in prices in land in some areas. The overall residential demand declined by over 40 percent. People also believe that if they had invested in land in covid it would have become very profitable. The government pumping money in the market , reducing interest rates , increasing number of loan sanctions had helped business men and companies to be stable.

Below is the given chart showing change in the prices of housing lands in India as well as rest of the world during covid. This is given by IMF that is international monetary fund.




In addition to the effects on residential sales, the work-from-home concept also proved detrimental to the growth of office space leasing companies. According to a report by Cushman and Wakefield, the net leasing of office spaces declined to around 35 lakh sq ft in Jan-Mar 2021 from approximately 70 lakh sq ft in the corresponding period of the year 2020. The potential leasing transactions were further delayed and impacted leasing rates.

Already, the net leasing rates dipped by 33 percent till the year 2021 , and the average commercial property prices have declined by 7-10 percent. Blackstone Group, one of the largest office space owners of India, had stated last year that the COVID-19 outbreak had delayed project completion timelines, reduced demand and softened rentals.

The demand for flexible workspaces, which had resurged in the last few months, has also taken a hit again . Occupiers' Survey by CBRE reveals that the adoption of technology and renewed business practices has rekindled investors' interest in the commercial real estate space.

The retail segment has been hit badly in the second phase as consumers are wary of visiting malls and shops. According to data , the retail mobility has declined by 55-60 percent across India. However, riding on the positivity lent by the mass vaccination programme, the retail segment has witnessed a sharp recovery at 72 percent of the pre-pandemic levels in July 2021.

So far, the effect of the second wave of the pandemic has not translated into a price movement in the residential market. Like the year 2020 , developers continue to withhold prices due to limited profit margins. While liquidity constraints weakend the prices in the long-term.

The second wave of COVID-19 affected the industry a little because after the first lockdown stage in April 2020, people realised the value of home ownership. There was not any drastic drop in real estate prices as a result of the second wave; but, there was some domino effects. Not directly because of COVID-19, but because of the related constraints imposed on the general public's movements and delayed assistance on other support facilities, such as processing papers for home loans, registration of sale deeds, or reaching out to sales and marketing personnel to garner more information about the project.

Not only the real estate sector but the allied industries dependent on the construction sector also inflicted heavy losses during the year 2020. On average, 250 small and medium-sized businesses, such as aluminum panels, steel bars, construction machinery parts, and many others, are directly related to the real estate industry. All of these industries reported losses in 2020 along with an increase in costs, further hampering sales. In the year 2021, developers and manufacturers were more positive since they are better prepared to handle the crisis.

The lockdown has helped India digitalized . This has created awareness among people of the new trends that are going in the market. Real estate in the metaverse addresses parcels, structures, or foundation that consumes a space. To lay it out plainly, the digitized rendition of land properties from the actual world inside the virtual world, with a connection layer is the metaverse land. Metaverse land empowers customers to purchase land in the metaverse. These bundles of land work like pixels yet are considerably more than advanced pictures. Land spaces in the Metaverse are programmable so clients can mess around, associate quiet, sell their NFTs, and go to gatherings and virtual shows alongside endless different exercises progressively. Besides, the rising prevalence of VR is pushing the completion of metaverse projects. Not at all like prior when individuals needed to visit the actual site, the metaverse is open from the solace of a room. The vivid innovation presently permits likely clients to trade their properties regardless of their area in a 3D world. Clients can likewise make their own 3D encounters be it perusing a virtual shop or playing a game progressively. They can likewise purchase land in One of the major upcoming trend is METAVERSE. In this people buy land in a virtual world with help of crypto currencies. Many big MNC'S like Nike , Adidas have bought land in this place and opened up stores which any person can visit and in the coming years can also buy products from the store and get it delivered at their homes in the real world.

## SUGGESTIONS

1. This research can be used as a medium for future predictions for the common people and also for the people who want to invest in land , if something like covid hits again or there is a economic recession.
2. The lockdown has led awareness among people of having their own personal space, so for the investors and construction companies should invest and build more apartments with good facilities which attract customers.
3. The real estate players should begin with decisions that protect the safety and health of all employees, tenants, and other end users of space.
4. With increasing digitalisation , the big companies can digitalise their many operations which will help the customer for example in finding good places , extra services and also it will improve the image of the company.
5. Digitalisation will also help the companies , the need of the people and what will be the change of trends as well as their competitors.
6. The companies getting more digitalisation cab also get FIRST MOVER ADVANTAGE.

## CONCLUSION

We can conclude that the real estate and construction sector have been negatively impacted but not as much as other sectors were impacted. India's real estate has been impacted less as compared to the rest of the world. One of the major reasons can be investment by the central as well as state governments in many small , medium and large projects. The rbi had also stressed upon the monetary policy by liquidating and as well as reducing the interest rates. The decrease in the prices of residential land can be seen, which also shows that people can buy land during that time. The price increase in commercial land and increasing prices for leasing and reducing demand of leasing has put a loss to many companies. As most of the work was from work from home the big companies did not lease. The increase investment in metaverse is also seen post covid.

Overall this sector was impacted negatively but not that much due to government and this sector is again regaining control at a faster pace post covid as compared to other sectors.

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# IMPACT OF COVID-19 ON THE TOURISM SECTOR OF INDIA

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**ABSTRACT** **DOI No: 10.36713/epra11762** **Article DOI: https://doi.org/10.36713/epra11762**

***The covid outbreak of this virus paralyzed the tourism industry by threatening both global and domestic tourist. The main purpose of this research paper is to study the impact of covid-19 virus on tourism industry especially Indian Tourism industry with statistical evidence, surveys and reports/ articles. This study also signifies the tourism sector importance in Indian economy and how it is dependent on the change in behaviour of tourists during and after the pandemic. This research paper aims at investigating the situation of Indian tourism industry during the COVID-19 pandemic and tries to provide useful information to the tourism industry players to deal with the changed preferences of tourists in the new normal by finding out change in behaviour for tourism components, this research paper is descriptive in nature, and is based on primary as well as secondary data. The secondary data has been collected from various online sources such as websites, research papers, etc. The primary data has been used to analyse the change in domestic (Indian) tourists' preferences for tourism components such as duration, accommodation, mode of transport and other components. For this purpose, their preferences before the pandemic as well as after the pandemic have been gathered from the respondents. For collecting the primary data, a structured questionnaire was created. It is evident that people have intentions to use own vehicle or flight for a trip instead of using public transport such as railway train or state-run bus or even a private operator bus and it can be due to concerns with safety measures, i.e., hygiene and proper social distancing as well as adherence to other norms for a safe trip***

**KEYWORDS:** ***Coronavirus, global and domestic tourist, Tourism,***

## 1. INTRODUCTION

The spread of Coronavirus has impacted the tourism sector drastically all over the world. Be it aviation or hospitality, transportation, tour operators or eateries, every activity related to tourism has been adversely affected in an unprecedented manner. India has been no exception. During the first wave itself, the sector was affected the most among all other economic sectors. This grim scenario triggers a thorough understanding of the estimated losses at a granular level and how to recuperate in the coming days. A roadmap on recovery is a must not only because tourism is the largest contributor to the economy and employment, but also because a large chunk of the population of the country is directly or indirectly linked to activities in the tourism sector. However, the implementation of any policy measures to support the tourism sector and the affected households requires a systematic estimation of the losses and requirements of relief. Thus, resilient policies are needed to address these challenges at all levels to put back the tourism sector on the path it was traversing before the pandemic. This study captures the economic losses resulting from the changes experienced during the entire period of the pandemic with the help of data from different sources that reflect changes over the said period. The study also probed the likely recovery phases of the tourism sector post the pandemic in order

to understand how the sector would regain its pre-pandemic position.

Coronavirus disease (COVID-19) threat originated from central China's Hubei province in Wuhan city in the month of December 2019 and continues to adversely affect more than 150 countries and claimed more than 50,000 lives globally. In a matter of weeks, over 100,000 of cases and thousands of deaths were confirmed.

Coronaviruses are a group of viruses belonging to the family of Coronaviridae, which infect both animals and humans. COVID-19 is caused by a virus called SARS-CoV-2. It is part of the coronavirus family, which include common viruses that cause a variety of diseases from head or chest colds to more severe (but rarer) diseases like severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). Like many other respiratory viruses, coronaviruses spread quickly through droplets that you project out of your mouth or nose when you breathe, cough, sneeze, or speak. Covid- 19 symptoms are variable, but often include fever, cough, headache, fatigue, breathing difficulties, loss of smell, and loss of taste. Symptoms may begin one to fourteen days after exposure to the virus.

Coronavirus (COVID-19) has triggered a concern worldwide in early January 2020, and by the end of March 2020, the outbreak has infected several people globally (WHO, 2020). On 24th March 2020, the government of India imposed a nationwide lockdown. India suspended all tourist visas from 13 March 2020 until 15 April 2020. Due to the COVID-19 pandemic, the travel and tourism industry's employment loss is predicted to be 100.08 million worldwide. The pandemic has not only affected economically but as well as politically and socially. As the number of infected cases rising throughout the nation, and with the implementation of certain measures and campaigns like social distancing, community lockdowns, work from home, stay at home, self- or mandatory-quarantine, curbs on crowding, etc., pressure is created for halting the tourism industry/business. This change in the current system has led to the beginning of the recession and depression, seeking a transformational change in society.

India is one of the developing nations known for its uniqueness in its tradition, culture and unparalleled hospitality. It is a major destination for many international tourists, creating several employment opportunities and generating enormous taxes. Tourism is a major source of revenue and employment in many countries. It is a generator for employment, income, tax collections and foreign exchange earnings. The impact of the pandemic on tourism has been captured through the estimation of TDGVA for all the three quarters of 2020-21, and across the following aspects in such a way that the impact of the pandemic due to different types of shocks has been captured separately. Due to COVID-19, tourism is such a highly affected sector and may remain affected in the long term, i.e., approximately more than 1.5 years. Hence, in this scenario, it is necessary to measure the losses due to pandemic so that policies can be redesigned to manage tourism activities. The Indian tourism industry has created about 87.5 million jobs, with 12.75% of total employment, thereby contributing INR 194 billion to India's GDP.

## 2. STATEMENT OF THE PROBLEM

India is a land of rich history, cultural and geographical diversity in the World. India has one of the Seven Wonders of the World and its diversity makes India one of the best international tourist destinations. The worldwide eruption of Covid-19 has brought the world to a standstill, and tourism has been the worst affected of all major economic sectors. Modern tourism is closely linked to development and encompasses a growing number of new destinations these dynamics have turned tourism into a key driver for socio-economics progress. Travel and tourism has been one of the most affected industries by Covid-19 and decreased 44% in 2020. International tourists' arrivals in April down by 97% in this pandemic situation. It translates into a loss of 180 million international arrivals and about US$ 195 billion in receipts. Current position point to declines of 58% to 78% in arrivals for 2020, depending on the speed of the containment and the duration of travel restrictions and shutdown of boarders, thus the outlook remains highly uncertain. Tourism industry is impacted by the inflow of foreign tourists, a drastic fall in foreign exchange earnings which was close to ₹2,10,981 crores in Q1-Q3 2019. Henceforth, this research study focuses on the challenges and issues of tourism industry during this Covid-19 period.

## 3. SIGNIFICANCE OF THE STUDY

The covid outbreak of this virus paralyzed the tourism industry by threatening both global and domestic tourist. The main purpose of this research paper is to study the impact of covid-19 virus on tourism industry especially Indian Tourism industry with statistical evidence, surveys and reports/ articles. This study also signifies the tourism sector importance in Indian economy and how it is dependent on the change in behaviour of tourists during and after the pandemic.

## 4. OBJECTIVES OF THIS STUDY

This research paper aims at investigating the situation of Indian tourism industry during the COVID-19 pandemic and tries to provide useful information to the tourism industry players to deal with the changed preferences of tourists in the new normal by finding out change in behaviour for tourism components. Thus, the objectives of the study are:

a) To understand the importance of tourism sector for economic development

b) To study the impact of COVID-19 on travel and tourism sector and find out the hurdles for development of travel and tourism industry in India
c) To investigate the change in purpose of domestic people for travel and tourism activities due to the pandemic.
d) To analyse the change in preference of domestic people for duration of stay due to the pandemic.
e) To analyse the change in preference of domestic people for mode of transport due to the pandemic.
f) To analyse the change in preference of domestic people for accommodation due to the pandemic.
g) To find out the suitable measures to rescue the tourism industry in the current situation.

## 5. LITERATURE REVIEW

Vineet Kumar (2020) in his research paper titled "Indian Tourism Industry and COVID-19: Present Scenario" has highlighted the issue of COVID-19 in India and its impact on the tourism and hotel industry, and the need of the hour, that is to take early action to overcome the slowdown in the tourism industry by analysing its long-term impacts at the earliest. He suggests that tourism enterprises can take certain measures to maintain their cash flow in the near future by suspending unnecessary or least important operational material purchases, by delaying outsourcing payments and by encouraging employees to take annual leaves and unpaid leaves, moreover tourism industry stakeholders can maintain business by other ways like adjusting their market mix and distribution channels. He also suggests that time can be utilized by making the employees adapt well in the contemporary digital environment.

Sanjita Jaipuria, Ratri Parida and Pritee Ray (2020) in their work titled "The Impact of COVID-19 on tourism sector in India" aim to predict foreign tourists' arrival in India and Foreign Exchange Earnings (FEE) using Artificial Neural Networks (ANN), and analyse the impact of COVID-19 based on four scenarios considering with and without lockdown in terms of loss and gain in FEE. The study disclosed that FEE is reduced because of foreign tourists' fewer arrivals in this pandemic outbreak. Therefore, instead of investing more in adding new resources, policymakers and stakeholders can think about making the existing resource more efficient and effective.

Mohammad Faisal and Devendra Kumar Dhusia (2021) in their research paper "Pandemic's (COVID-19) Impact on the Tourism Sector" examine the impact of the pandemic on domestic tourism sector in India through finding out the changes in preferences of domestic tourists due to the pandemic. The study revealed that the pandemic did not reduce the number of people who want to travel for tourism activities, however, approximately the same number of people want to travel after relaxations or vaccination and want to remain careful at the same time.

## 6. RESEARCH METHODOLOGY

This research paper is descriptive in nature, and is based on primary as well as secondary data. The secondary data has been collected from various online sources such as websites, research papers, etc. The primary data has been used to analyse the change in domestic (Indian) tourists' preferences for tourism components such as duration, accommodation, mode of transport and other components. For this purpose, their preferences before the pandemic as well as after the pandemic have been gathered from the respondents. For collecting the primary data, a structured questionnaire was created.

## 7. STATISTICAL TOOLS USED

For the sampling unit, Indian nationals who are 18 years of age or above have been selected. For gathering the data, convenience sampling and snowball sampling techniques have been used. For the collection of primary data, a structured questionnaire has been developed. Responses from 75 people were collected through the structured questionnaire created with Google Forms. For data analysis purpose, descriptive statistics, i.e., frequency distribution, percentage and cumulative percentage were calculated and the results were presented in tabulated form.

## 8. DATA ANALYSIS AND RESULTS

**Table 1: Demographics of the Respondents –**

| Particulars | Frequency | Percentage |
|---|---|---|
| **Gender** | | |
| Female | 36 | 48.0 |
| Male | 39 | 52.0 |
| **Age (in years)** | | |
| 18-25 | 33 | 44.0 |
| 26-34 | 3 | 4.0 |
| 35-44 | 12 | 16.0 |
| 45-54 | 24 | 32.0 |
| More than 54 | 3 | 4.0 |
| **Occupation** | | |
| Businessman/ Self Employed | 8 | 10.7 |
| Private Employee | 22 | 29.3 |
| Govt. Employee/ Public Sector Employee | 3 | 4.0 |
| Student | 33 | 44.0 |
| Other | 9 | 12.0 |
| **Individual Monthly Income (INR)** | | |
| Less than 20,000 | 37 | 49.3 |
| 20,001-40,000 | 2 | 2.7 |
| 40,001-60,000 | 3 | 4.0 |
| 60,001-80,000 | 1 | 1.3 |
| 80,001-1,00,000 | 3 | 4.0 |
| More than 1,00,000 | 29 | 38.7 |
| **Marital Status** | | |
| Married | 37 | 49.3 |
| Unmarried | 38 | 50.7 |

The majority of the respondents in this study fall in two age categories which are 18-25 years (44%) and 45-54 years (32%) and together they have 76% respondents. Out of the 75 respondents, 39 (52%) are male and in regard to marital status, 38 out of 75 respondents are unmarried in this study. The respondent's individual monthly incomes (INR) as well as their occupation are also taken into consideration in this study for better insights. 37 respondents have less than Rs. 20,000 monthly income, followed by 2 respondents (Rs. 20,001-40,000), 3 respondents (Rs. 40,001-60,000), 1 respondent in the category of Rs. 60,001-80,000, 3 respondents (80,000-1,00,000 INR), and 29 respondents in the category of more than Rs. 1,00,000. 33 respondents are students, followed by 22 private employees, 8 businessman/self-employed, 3 Government Employees/Public Sector Employee, and 17 others. (Refer to Table 1)

**Table 2: Number of people who used to travel before the Pandemic –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| Yes | 70 | 93.3 | 93.3 |
| No | 5 | 6.7 | 100.0 |
| Total | 75 | 100.0 | |

It is clear that 93.3% people (70 out of 75) used to travel for tourism purposes before the pandemic. Only 5 people (6.7%) mentioned that they were never travelled for tourism purposes before the pandemic. (Refer to Table 2)

**Table 3: Classification of Intention to travel according to relaxations or vaccination –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| No | 2 | 2.6 | 2.6 |
| Yes, after full relaxations in restrictions on travel and tourism activities | 8 | 10.7 | 13.3 |
| Yes, after some relaxations in restrictions | 14 | 18.7 | 32.0 |
| Yes, only after taking vaccination or other protection from the virus | 51 | 68 | 100.0 |
| Total | 75 | 100.0 | |

It is evident that overall, 97.33% people (73 out of 75) still intend to travel for tourism purposes but their intention varies according to the relaxations or vaccination (Refer to Appendix- Table 3). The largest proportion which comprises 51 people (68%) showed their intention to travel only after taking vaccination or other protection from the virus. 8 people (10.7%) mentioned that they will travel but only after complete relaxations in restrictions on travel and tourism activities and 14 people (18.7%) expressed their intention to travel after some relaxations in restrictions on travel and tourism activities. Only 2 people which is 2.6% of total respondents expressed their interest against travelling for tourism purpose at all (Refer to Appendix- Table 3) and there is not much difference between numbers of people who used to travel before the pandemic and who want to travel after relaxations or vaccination according to their criteria. (Refer to Table 2 and 3)

**Table 4: Frequency of Travelling before the Pandemic –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| Once in 3 months | 27 | 36.0 | 36.0 |
| Once in 6 months | 27 | 36.0 | 72.0 |
| Once in a year | 15 | 20.0 | 92.0 |
| Once in more than a year | 6 | 8.0 | 100.0 |
| Not applicable | 0 | 0.0 | |
| Total | 75 | 100.0 | |

It is clear that 36% people each (27 out of 75) used to take a trip every 3 and 6 months, which is the largest proportion, followed by (20%) 15 people used to have a trip once a year, and (8%) 6 people used to have a trip once in more than 12 months. (Refer to Table 4)

**Table 5 : Frequency of Travelling after relaxations or vaccination –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| Once in 3 months | 19 | 25.3 | 25.3 |
| Once in 6 months | 21 | 28.0 | 53.3 |
| Once in a year | 24 | 32.0 | 85.3 |
| Once in more than a year | 8 | 10.7 | 96.0 |
| Not applicable | 3 | 4.0 | 100.0 |
| Total | 75 | 100.0 | |

It is evident that after relaxations or vaccination, 32% people (24 out of 75) want to take a trip every year which constitutes the largest proportion, followed by (28%) 21 people who want to have a trip every six months, (25.3%) 19 people want to have a trip every 3 months, and (10.7%) 8 people want to have a trip once in more than 12 months. (Refer to Table 5)
From Table 4 and Table 5, it is quite clear that there is increase in number of people who want to have a trip every year. These numbers in category “a trip every year” increased from 15 to 24. Number of people in category “a trip in every three months” came down from 27 to This shows that more people want to have a trip in a year after relaxations or vaccination instead of a trip at every three months which can be due to pandemic or increase/decrease in personal disposable income.

**Table 6 : History of Coronavirus Cases and Choice of a Tourism Destination –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| Yes | 46 | 61.3 | 61.3 |
| No | 27 | 36.0 | 97.3 |
| Not applicable | 2 | 2.7 | 100.0 |
| Total | 75 | 100.0 | |

It seems that the majority of the respondents (61.3%) mentioned that they will consider the history of a state related to coronavirus cases while choosing their tourism destination. 27 respondents (36%) said that the history of coronavirus cases of a state will not matter while choosing the tourism destination (Refer to Table 6). This shows that people want to travel for tourism purpose but they also do not want to have any risk related to health and perceive that it would be better if they avoid to visiting tourism destinations which have history of coronavirus cases.

**Table 7 : Waiting period before taking the first trip –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| Within 3 months | 17 | 22.6 | 22.6 |
| 3-6 months | 18 | 24.0 | 46.6 |
| 6-12 months | 14 | 18.7 | 65.3 |
| More than 12 months | 20 | 26.7 | 92.0 |
| Not applicable | 6 | 8.0 | 100.0 |
| Total | 75 | 100.0 | |

The results in Table 7 makes it clear that 65.3% respondents have intentions to travel for tourism purposes within one year after relaxations (some or complete) or vaccination. Out of this total of 65.3%, 24% respondents (18 out of 75) in "3-6 months" and 18.7% respondents (14 out of 75) in category "6-12 months" have intentions to take their first trip. 17 respondents out of 75 respondents (22.6%) expressed their intention to take their first trip in within 3 months and 20 respondents out of 75 respondents (26.7%) have intention to take their first trip in more than 12 months. 42.7% combined respondents which is close to half of overall respondents want to have their first trip between 3-12 months (Refer to Table 7). This shows that people want to have tourism activities as soon as possible but without taking any risk and it may be a reason for majority of people not travelling in first three months.

**Table 8 : Impact of the pandemic on Budget –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| Decrease in Budget | 21 | 28.0 | 28.0 |
| Increase in Budget | 15 | 20.0 | 48.0 |
| No Change | 30 | 40.0 | 88.0 |
| Not applicable | 9 | 12.0 | 100.0 |
| Total | 75 | 100.0 | |

It is clear that 36 out of 75 respondents mentioned that the pandemic impacted their budget. 21 respondents (28% of total respondents) said that their travel budget got decreased due to the pandemic and 15 respondents (20% of total respondents) mentioned increase in their travel budget. 30 respondents out of 75 (40% of total respondents) said that there is no change in their travel budget due to the pandemic (Refer to Table 8).

**Table 9 : Purpose of Travelling before pandemic –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| For Leisure | 21 | 28.0 | 28.0 |
| For exploring new places and cultures | 14 | 18.7 | 46.7 |
| For improving and maintaining health | 0 | 0.0 | 46.7 |
| For spending time with family | 17 | 22.7 | 69.4 |
| For getting a break from routine | 16 | 21.3 | 90.7 |
| For business trip | 4 | 5.3 | 96.0 |
| Other | 2 | 2.7 | 98.7 |
| Not applicable | 1 | 1.3 | 100.0 |
| Total | 75 | 100.0 | |

**Table 10 : Purpose of Travelling after relaxation or vaccination –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| For Leisure | 21 | 28.0 | 28.0 |
| For exploring new places and cultures | 15 | 20.0 | 48.0 |
| For improving and maintaining health | 1 | 1.3 | 49.3 |
| For spending time with family | 17 | 22.7 | 72.0 |
| For reducing the stress of coronavirus and lockdown | 10 | 13.3 | 85.3 |
| For business trip | 6 | 8.0 | 93.3 |
| Other | 3 | 4.0 | 97.3 |
| Not applicable | 2 | 2.7 | 100.0 |
| Total | 75 | 100.0 | |

From Table 9, it is clear that leisure (21 respondents), spending time with family (17 respondents) and getting a break from routine (16 respondents) are the top three choices for the tourism purpose before the pandemic, followed by exploring new places and cultures (14 respondents). It is clear that leisure (21 respondents), spending time with family (17 respondents), exploring new places and cultures (15 respondents) and reducing the stress of coronavirus and lockdown (10 respondents) are the top choices for travelling purposes after relaxations or vaccination, followed by business trips (6 respondents) and improving and maintaining health (1 respondent) and other purposes (3 respondents) (Refer to Table 10). Reducing the stress of coronavirus and lockdown and improving and maintaining health together form a niche market of tourism known as Health Tourism. This shows that industry players should focus on offering this tourism product with some additional value proposition such as enjoyment, to attract tourists.

**Table 11 : Impact of the pandemic of choice of duration of stay –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| Yes | 26 | 34.6 | 34.6 |
| No | 41 | 54.7 | 89.3 |
| Not applicable | 8 | 10.7 | 100.0 |
| Total | 75 | 100.0 | |

The figures in Table 11 make it clear that 26 respondents (34.6%) of total respondents said that the pandemic will cause a change in their duration of stay and 41 respondents (54.7%) said that the pandemic has no effect on their choice of duration. This means that the pandemic has no effect on choice of duration of stay for majority of the people.

**Table 12 : Preference of duration of stay before the pandemic –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| Less than 5 days | 27 | 36.0 | 36.0 |
| 6-14 days | 44 | 58.6 | 94.6 |
| 15-30 days | 2 | 2.7 | 97.3 |
| More than 30 days | 0 | 0.0 | 97.3 |
| Not applicable | 2 | 2.7 | 100.0 |
| Total | 75 | 100.0 | |

From Table 12, it is clear that before the pandemic, a little more than half of the respondents (44 or 58.6%) used to prefer to stay at the destination for 6-14 days, followed by 27 respondents (36%) for less than 5 days and together they have 94.6% share of the total. The other two categories (15-30 days and more than 30 days) do not hold a large part in overall share and together, they just share 2.7% share.

**Table 13 : Preference of duration of stay after relaxations or vaccination –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| Less than 5 days | 42 | 56.0 | 56.0 |
| 6-14 days | 27 | 36.0 | 92.0 |
| 15-30 days | 2 | 2.7 | 94.7 |
| More than 30 days | 1 | 1.3 | 96.0 |
| Not applicable | 3 | 4.0 | 100.0 |
| Total | 75 | 100.0 | |

It is evident that after relaxations and vaccination, more than half of the respondents (42 respondents or 56%) mentioned that they will prefer to stay at the destination for less than 5 days followed by (36%) 27 respondents who will prefer to stay for 6-14 days, and together they have 92% share of the total. The other two categories, i.e., 15-30 days and more than 30 days, are preferred by just 2 respondents (2.7%) and 1 (1.3%) respondent, respectively, and does not represent a large part in the overall share (Refer to Appendix- Table 13). It is clear that more people want to stay at the destination for less than 5 days and it is the only category which registered more preference (from 27 to 42) than before. The categories 6-14 days, 15-30 days and more than 30 days registered the decrease in preference. (Refer to Tables 12 and 13).
This means that respondents still may have concerns regarding their safety for longer periods of time or may have constraints of personal disposable income. Market players should raise their safety standards as well as offer coupons, discounts, combo offers etc. to eliminate the safety concerns and disposable income constraint respectively so that tourists can have a budgeted trip for longer periods of time, which would, in the long run, benefit the tourism industry and the economy.

**Table 14 : Impact of the pandemic on choice of accommodation –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| Yes | 36 | 48.0 | 48.0 |
| No | 35 | 46.7 | 94.7 |
| Not applicable | 4 | 5.3 | 100.0 |
| Total | 75 | 100.0 | |

The figures in Table 14 clearly show that 36 respondents (48%) of total respondents said that there will be change in their preference for accommodation type due to the pandemic and 35 respondents (46.7%) mentioned that the pandemic would have no effect on their choice of accommodation type.

**Table 15 : Preference of type of accommodation before the pandemic –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| 2-3 star hotel | 9 | 12.0 | 12.0 |
| 4-5 star hotel | 58 | 77.4 | 89.4 |
| At friend's or relative's place | 3 | 4.0 | 93.4 |
| Government tourist' rest house | 1 | 1.3 | 94.7 |
| Local guest house | 0 | 0.0 | 94.7 |
| Other | 1 | 1.3 | 96.0 |
| Not applicable | 3 | 4.0 | 100.0 |
| Total | 75 | 100.0 | |

From Table 15, it is evident that before the pandemic, 4-5 star hotels were top preference with highest number of response (58 out of 75 or 77.4%) for staying at the destination, followed by 2-3 star hotels (9 out 75 or 12%). Friend's or relative's place (3 out of 75), government tourists' rest house (1 out of 75) and other (1 out of 75) occupied last positions as an option for staying.

**Table 16 : Preference of type of accommodation after relaxations or vaccination –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| 2-3 star hotel | 6 | 8.0 | 8.0 |
| 4-5 star hotel | 49 | 65.4 | 73.4 |
| At friend's or relative's place | 13 | 17.3 | 90.7 |
| Government tourist' rest house | 1 | 1.3 | 92.0 |
| Local guest house | 1 | 1.3 | 93.3 |
| Other | 3 | 4.0 | 97.3 |
| Not applicable | 2 | 2.7 | 100.0 |
| Total | 75 | 100.0 | |

It is clear from Table 16, that after relaxations and vaccination, 4-5 star hotels (49 out of 75 or 65.4%) and friend's or relative's place (13 out of 75 or 17.3%) got top preference with highest number of responses, along with 2-3 star hotel (6 out of 75 or 8%). Government tourists' rest house (1 out of 75 or 1.3%), local guests house (1 out of 75 or 1.3%) and other (3 out of 75 or 4%) are preferred less for stay purposes. From Tables 15 and 16, it is evident that people started preferring friend's or relative's place more after relaxations and vaccination as a stay option due to safety concerns. Friend's or relative's place might be considered as a safest choice as people can stay there according to their will without having extra burden of following the norms as well as reducing the contact with other people, which they cannot do with other stay options. Ultimately, it will lead to reduction in fear of catching the virus and will increase their satisfaction.

Thus, market players should come up with policies such as minimal contact, self-service of picking mattresses and changing them on its own, encouraging digital payment, doing necessary cleaning or other work in the absence of people in the room to avoid contact by receiving permission in advance so they can assure the safety of their important belongings, etc. to attract tourists.

**Table 17 : Impact of the pandemic on choice of mode of transport –**

| Response | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| Yes | 36 | 48.0 | 48.0 |
| No | 37 | 49.3 | 97.3 |
| Not applicable | 2 | 2.7 | 100.0 |
| Total | 75 | 100.0 | |

It is apparent from Table 17 that 36 respondents (48%) said that the pandemic will affect their preference for mode of transport, and 37 respondents (49.3%) mentioned that the pandemic has no effect on their choice of transport type.

**Table 18 : Preference of type of mode of transport before the pandemic –**

| Response | Frequency | Percentage | Percent of Cases |
|---|---|---|---|
| Own Vehicle | 37 | 29.8 | 49.3 |
| Railway Train | 23 | 18.6 | 30.7 |
| Private Operator Bus | 8 | 6.5 | 10.7 |
| State Operated Bus | 1 | 0.8 | 1.3 |
| Flight | 50 | 40.3 | 66.7 |
| Other | 0 | 0.0 | 0.0 |
| Not applicable | 5 | 4.0 | 6.7 |
| Total | 124 | 100.0 | 165.4 |

(Note: Total numbers are more than total respondents as multiple responses were allowed for this question)

From Table 18, it is quite clear that flight and own vehicle used to be the more preferred modes of transport among all the available options. 66.7% (50) respondents and 49.3% (37) respondents mentioned flight and own vehicle, respectively, as the modes which they preferred before the pandemic for travelling. Railway train as a transport mode comes third in the list as 23 (30.7%) respondents mentioned it followed by Private operator bus (8 or 10.7% respondents) and State run/operated bus (1 or 1.3% respondents).

**Table 19 : Preference of type of mode of transport after relaxations or vaccination –**

| Response | Frequency | Percentage | Percent of Cases |
|---|---|---|---|
| Own Vehicle | 49 | 45.8 | 65.3 |
| Railway Train | 7 | 6.6 | 9.3 |
| Private Operator Bus | 4 | 3.8 | 5.3 |
| State Operated Bus | 1 | 0.9 | 1.3 |
| Flight | 42 | 39.2 | 56.0 |
| Other | 1 | 0.9 | 1.3 |
| Not applicable | 3 | 2.8 | 4.0 |
| Total | 107 | 100.0 | 142.5 |

It can be seen from Table 19 that 49 (65.3%) respondents which is more than half of the respondents mentioned that their own vehicle as one of the more preferred modes of transport among all the available options after relaxations or vaccination. (56%) 42 respondents and (9.3%) 7 respondents mentioned Flight and railway train, respectively, as the next preferred modes for travelling. Private operator bus as a mode comes fourth in the list as 4 (5.3%) respondents mentioned it followed by State run/operated bus with 1 (1.3%) respondent. It becomes apparent that only own vehicle as a mode of transport showed increase in numbers as a preference from 37 to 49 after relaxations or vaccination. Flight as a mode gets similar numbers of response and there is not a major decrease in numbers (50 and 42) and emerges as second best. Railway train saw decrease in numbers from 23 to 7 as a preferred mode of transport among all the options (Refer to Appendix- Table 18 and 19).

It is evident that people have intentions to use own vehicle or flight for a trip instead of using public transport such as railway train or state-run bus or even a private operator bus and it can be due to concerns with safety measures, i.e., hygiene and proper social distancing as well as adherence to other norms for a safe trip. Market players should formulate and implement new policies as well as adhere to the norms of government in its full coverage to gain the trust of people regarding mode of transport provided to them.

## 9. CONCLUSION

This research study explored the pandemic impact on domestic tourism sector and revealed that the pandemic does not necessarily reduce the number of people who want to travel for tourism activities. However, approximately same number of people want to take tourism activities after relaxations or vaccination, but want to be remain careful at the same time. So, more than half of the people want to wait for some months after relaxations or vaccination or longer than that but not more than a year which shows that tourism sector will start recovering, but full recovery might take 2-3 years as people also prefer to wait till vaccination to travel for tourism purposes. On the other hand, the pandemic has influenced the tourism sector by altering the preferences of people regarding the various components of tourism industry, i.e., accommodation, mode of transport, duration of stay as well as influencing their budget. In addition of it, they also want to have short stays with safe and reliable

options of 4-5 star hotel or friend's and relative's place for stay instead of 2-3 star hotel and local guests house, and own vehicle and flight for transport instead of railway train, private bus and state bus for safety and hygiene reasons. The study also discloses that many people expressed health improvement including stress reduction as a purpose for engaging into tourism activities which can be seen as a first step in emergence of domestic health tourism market as people are becoming more aware about their physical as well as mental health. This niche health tourism market could be a key for starting Indian tourism sector as this sector does not require mass gathering of people at a place at the same time and pays attention to the cleanliness and hygiene conditions. Offering coupons, discounts, giving them full and accurate information about destination rules, organizing a virtual tour for people to become sure about standards and protocols as well as hygiene at destination will help attract more tourists and gain their trust as well. The results of this study may help tourism market players including the government to modify or develop tourism products which are in accordance with the changed preferences of tourists due to the pandemic and serve a more enriching experience.

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# IMPACTS OF COVID-19 ON THE STOCK MARKET

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***This study investigates COVID-19's impact on the Indian stock market's daily average return and trading volume. The investigation aims to determine the general market's and nine key sectors' pandemic vulnerability and the pandemic's impact on market volatility. All industries were affected by the epidemic, according to the research. The benchmark index maintained average returns. Reduced volatility reduced market returns and boosted liquidity.***

**KEYWORDS:** ***average returns, COVID-19, Indian stock market, trading volume.***

## INTRODUCTION

COVID-19 is a game-changing factor for all countries, be it the world's superpower, the United States of America or the next in line for the title, China. COVID-19 was declared a pandemic by the World Health Organization (WHO) on March 11, 2020.

Since the inception of the COVID-19 pandemic, all economies have been fully or partially shut down, and citizens have been forced into lockdown for months, deteriorating national income, employment rate and overall industrial production of developing and developed countries. Even the most secure country in health and sanitisation, Italy, has not been left out of the declining economic trends due to the ongoing pandemic (Reuters, 2020). Amidst all the economic, social, and political chaos, global financial markets have not been unaffected (He et al., 2000; Liu et al., 2020b). The stock markets witnessed an immediate price fall and sky-rocketing volatility when the pandemic hit the countries (Baker et al., 2020). While COVID-19 hit the developed economies most initially, emerging economies such as India, Brazil, Peru, and Mexico were hit severely in the second wave of the pandemic. The developing countries witnessed a severe impact on their economic activities due to partial lockdowns and, thus, on the financial markets. In many countries, some sectors performed better than other hard-hit sectors, such as Pharmaceuticals and Postal Services.

### Pre COVID

India emerged as one of the best-performing equity markets in 2018, with a negative dollar return of 5.6% in a year when global stock markets were rattled by trade tensions and a slowing earnings recovery. The Brazilian Bovespa performed slightly better than India, returning a negative 1.8%

All major equity indices in developed and emerging markets ended the year in the red, with the Chinese Shanghai Composite losing up to 28.7% in dollar terms, the most in Asia, followed by South Korea, which lost 20.5%.

However, the Nifty's 3.2% gain in rupee terms was primarily driven by domestic institutional buying throughout the year. Domestic institutional investors-insurance companies, banks, and mutual funds have purchased a record Rs 1.1 lakh crore (about $17 billion) of shares this year, cancelling out foreign sales of $4.4 billion.

The benchmark Nifty trades at a price-earnings(PE) multiple of 16.7 times estimated one-year forward earnings, compared to the long-term average PE of 16.2 times. This compares to 5.8 times for the Kospi and 14.5 times for the Jakarta Composite Russian equities were the least. Expensive in the emerging market, with a forward price-to-earnings ratio of 5.3, followed by South Korean equities at 8.6, according to Bloomberg data Back home. Vodafone Idea and Tata Motors fell 60% each in the BSE 100 index. In contrast, Bharti Airtel, Yes Bank, Aditya Birla Capital, and Bharat Electronics fell between 41% and 52% when it came to the top performers. Bajaj Finance comes out on top with a 50.3% gain. Software exporters such as Tech Mahindra and TCS gained 43.1% and 40.2%, respectively, as investors bet on the rupee depreciating against the US dollar. The local currency fell 8.5% against the US dollar last year. BSE's 19 sectorial indices lost money in 2018, except BSE IT. BSE Tech, BSE FMCG, Bankex, BSE Finance, and BSE Energy, which fell by as much as 41%. This was followed by a 31% drop in BSE Realty and a 22% drop in BSE Auto.


A look at the monthly return of this index shows that 2018 had the second-highest number of months with negative returns after a seven-year gap in 2011 when nine months suffered the same fate.

Every year, the volatility and growth levels in Indian equity markets vary depending on the global and domestic scenario and investor participation. The year 2018 is also coming to an end at its own pace. The Nifty 50, a 50-stock index, saw seven months end in the red in 2018, compared to just four and five months in the previous two calendar years.

A look at the monthly return of this index shows that 2018 had the second-highest number of months with negative returns after a seven-year gap in 2011, when nine months ⅔ suffered the same fate. 2011 was the only year in more than two decades to have the most significant number of months with a loss.

Exploring the year's monthly events could help to explain the performance. The S&P BSE Sensex finished 2017 at an all-time high closing level of 34.057, and the Indian equity benchmark recorded a full-year total return of 29.56 per cent. Small-cap stocks outperformed mid-cap and large-cap stocks.

The S & P BSE Sensex had a difficult month on equity investments testing the Indian e US-led global equity market sell-off and dragging the index even further.

March was a difficult month for global equity. Expected rate cuts by the Reserve Bank of India acted as a tailwind.

In June, equities faced a challenging environment as trade tensions weighed on global equity markets, contributing to a rise in risk-off sentiment. On the other hand, Equities gained steadily in July as the country's solid economic outlook provided tailwinds for growth. The S&P BSE Sensex closed the month at a record high of 37,607. The benchmark index overcame an early-month sell-off in emerging markets to set eight new all-time highs in August. After ending August at an all-time high, it began to fall sharply in September. The benchmark fell to its lowest monthly performance since February 2016 as concerns about exports in a deteriorating global trade environment weighed on the index.

The markets fell for the second consecutive month in October, owing to foreign fund outflows and a worsening global outlook. Rumours exacerbated currency pressures that RBI Governor Urjit Patel would resign. Equities rose across the board in November, possibly due to trade tensions between the United States and China. December was marred by weak global cues and cautious sentiment ahead of next year's general elections.

**During COVID**

They are categorised into four sections. Section I discusses the literature review of the impact of COVID-19 on the financial market. Section II enlists data and methodology used in the analysis. In section III, we describe the trends of the data set studied and portray the results and their research. In section IV, we conclude the findings of the paper.

## 1. LITERATURE REVIEW

Since COVID-19 has spread so quickly, several studies have been done on its influence on established and emerging economies. Baker et al. (2020) say the epidemic caused a global economic crisis. It caused stock market slumps and volatility. Daube (2020) and Dev and Sengupta (2020) explain that the financial markets were already toxic when COVID-19 was introduced, causing stock market disasters across nations. A crisis-like event might cause unanticipated stock market fluctuations, challenging established variable correlations. This motivates us to research the pandemic's influence on market return and volume. Some researchers have examined COVID-19, stock markets (Phan & Narayan, 2020), and industrial response to the pandemic (Xiong et al., 2020). COVID-19 also affects stock market volatility (Chen et al., 2020). He et al. (2020c) studied COVID-19's effect on stock returns in China, Italy, South Korea, France, Spain, Germany, Japan, and the USA. Their data suggest that COVID-19 caused negative returns on financial markets and bidirectional spillover effects across nations. All assessed stock markets declined when the pandemic hit (Ali et al., 2020; Liu et al., 2020b). Negative investor sentiment produced by the virus led to deteriorating stock returns in Asian countries (Liu et al., 2020b; Topcu & Gulal, 2020). (Liu et al., 2020b). Ozil and Arun (2020) tested COVID-19's effects on the US, UK, Japan, and South Africa. Lockdown days, monetary policy decisions, and international travel restrictions affected stock prices in all nations surveyed. Gormsen and Koijen (2020) studied COVID-19's impact on economic development and stock prices and concluded that it reduces stock dividends. Government stimulus increased dividend performance. The stock market responded fast to the COVID-19 epidemic, and returns decreased with the announcement and the increasing number of infections (Ashraf, 2020; Mishra et al., 2020; Yilmazkudey, 2020). Barro et al. (2020) observed that flu-related mortality in 48 nations reduced stock market returns. Some publications demonstrate a positive association between COVID-19 and stock returns (Liu et al., 2020c; Prabheesh et al., 2020). Topcu and Gulal (2020) say the pandemic hurt stock markets until April 10. COVID-19's influence decreases with time. Alber (2020) explored how the stock markets of the six worst-affected nations reacted to the COVID-19 pandemic. The results showed that stock market return was more sensitive to coronavirus cases than deaths, and accumulated points had a more significant impact than fresh instances. Ortmann et al. (2020) studied retail investor reaction to COVID-19. When COVID-19 cases doubled, investor trading intensity jumped 13.9%. As the pandemic spread, investor deposits and new accounts rose. The Dow Jones Industrial Average and FTSE indices fell, causing investors to reduce leverage to avoid risk.

In March 2020, NSE and BSE each lost 23% of listed businesses' market capitalisation. Overall, stock prices fell continuously in March 2020. Singh and Neog (2020) found that the decrease in Sensex and NIFTY is more rapid after the first week of March 2020. The Financial, Real Estate, and Banking sectors lost an estimated 2.81 lakh crore. Alam et al. (2020) studied COVID-19's impact on India's stock market. Their findings suggest that the public panicked and aberrant returns reduced during the epidemic pre-lockdown. The public acquired the trust during the shutdown, which boosted anomalous returns.

In times of disease-related news, Donatelli et al. (2016) discovered (DRNs). Positive investor mood boosts pharmaceutical stock performance. Fu and Shen (2020) found a detrimental influence on energy businesses' performance during COVID-19. Mazur et al. (2021) analysed numerous industries and concluded that natural gas, food, healthcare, and software have higher returns than petroleum, real estate, entertainment, and hospitality. He et al. (2020b) analysed the pandemic's impact on the industry in China and found that four of eight industries were robust while the other four were negatively affected.

Studies show COVID-19 hurts energy company performance (Fun & Shen, 2020, Polemis & Soursou, 2020). Similar research indicated a detrimental impact of COVID-19 on the oil market (Qin et al., 2020). Contradictory results on the crude oil market and the US stock market imply that COVID-19 had a favourable impact on the returns of both markets (like, 2020a; Liu et al., 2020c; Narayan, 2020c). During COVID-19, oil price volatility soared (Devpura & Narayan, 2020, Salisu & Adediran, 2020). Huang and Zheng (2020) observed that crude oil futures price elasticity declined post-COVID-19. During a pandemic, the stock market and oil prices move together, according to Prabheesh et al. (2020). Narayan (2020b) observed that COVID-19 affected exchange rate shock resistance. Some analyses considered the exchange rate market inefficient during COVID-19 (Narayan, 2020a). Devour (2020) observed that oil prices don't predict the yen during COVID-19.

Salisu and Sikiru (2020) found that Asia-Pacific Islamic stocks were a good hedge against COVID-19 uncertainty. Like (2020b) observed that three out of five Asian economies remained resilient, while China and Korea had a beneficial impact. Gil-Alana and Claudia-Quiroga (2020) examined Asian stock markets and COVID-19. Korean and Chinese stock market shocks are lasting, whereas Korean market shocks are transient. Sharma (2020) found that during COVID-19, Asian area volatility was related to five Asian developed countries.

Yan and Qian (2020) found that consumer industry stock values dropped in the epidemic's early

days and recovered in response to government actions. The COVID-19 outbreak increased the financial industry's systematic risk. The systematic risk rose above Banking and Insurance risks (Lan et al., 2020). In their paper, He et al. (2020a) measured the impact of the COVID-19 pandemic on stock market sectors. They researched Chinese stock prices. Their data show inconsistent stock price behaviour on the two exchanges. Zaremba et al. (2020) studied how government policy responses to new coronaviruses affected stock market volatility in 67 nations. They did panel regression on five volatility metrics and indicated that COVID-19 actions increase stock market volatility. Phan and Narayan (2020) studied the response of 25 stock markets to COVID-19 events like the WHO proclamation, lockdown, stimulus package, and travel restrictions. In a descriptive analysis, they observed that stock markets overreact owing to uncertainty. More information leads to market corrections.

Salisu and Akanni (2020) used the Global Fear Index for the COVID-19 pandemic to predict stock market returns. The fear index indicates that pandemic stock returns well. Chen et al. (2020) created a proxy for coronavirus fear sentiment using Google search patterns to measure COVID-19's influence on VIX and Bitcoin returns and volume. Vector autoregressive model results show that fear feeling boosts VIX and Bitcoin trading volume. Coronavirus hurts Bitcoin returns. Haroon and Rizvi (2020) found that growing coronavirus incidence reduces market liquidity in 23 emerging economies. As COVID-19-related mortality flattens, equity markets see greater liquidity. Government policy intervention to contain the epidemic also improves market liquidity by reducing investor anxiety. Han and Qian (2020) studied COVID-19's impact on Chinese enterprises' innovation across sectors. During the pandemic, all Chinese enterprises displayed increasing creativity. After the COVID-19 outbreak, Chinese banks boosted private sector credit, according to Appiah-Otoo (2020).

Liu et al. (2020a) used wavelet-based approaches to assess China's COVID-19 pandemic resistance. The study found that China's decoupled economy is better able to handle the pandemic than other economies. Liu et al. (2020d) examined the influence of the pandemic on household consumption using OLS regression on survey data. The data show that the pandemic reduced household consumption, especially in rural areas. The study found that mobile payments enhance urban household purchasing even during the pandemic. Shen et al. (2020) found that COVID-19 affects company performance. Using listed Chinese company financial data, they found that the negative effect is more significant in pandemic-affected areas. The pandemic also affected tourism, catering, and transportation. Xiong et al. (2020) found that COVID-19 affected transportation, food and beverage retail, hotel and tourist enterprises, postal warehousing, real estate, video entertainment, and construction. Firm-specific factors and financial state determine a firm's COVID-19 reaction.

Narayan et al. (2020) used a GARCH model to examine the impact of the exchange rate on Japanese stock market performance during the COVID-19 pandemic. They discovered that one standard deviation of Yen depreciation leads to 71% higher stock returns. Pre-COVID-19 stock market returns increased by 24-49%. Thus, the currency rate influences market return more during COVID-19. Gu et al. (2020) used Difference-in-Difference to examine the impact of COVID-19 on different industries. The pandemic slashed industrial firms' economic activity by 57%. Construction, information transfer, computer services and software, health care and social work organisations responded well.

Prabheesh (2020) studied FPI and stock market returns in India during COVID-19. The Granger causality test indicated that FPI predicts Indian stock returns. When FPIs left the market during the pandemic, stock returns fell. Aravind and Manojkrishnan (2020) studied COVID-19's impact on India's pharmaceutical industry. Only two of the ten Pharma companies they evaluated trended against the benchmark index. Overall, the Indian Pharma sector did not follow the projected contrarian effect.

## 2. DATA AND METHODOLOGY

The research's daily data shows the Indian stock market's sector-by-sector performance over a year. The timeframe covers market activity before and during the COVID-19 epidemic (08/07/2019 to 10/03/2020). The timeline is divided on 11/03/2020 when WHO proclaimed COVID-19 a widespread outbreak. NIFTY sectorial indices represent sectorial activity, whereas NIFTY 50 measures broad market activity. Automobile, pharmaceuticals, IT, FMCG, energy, financial services, real estate, banking, and metal are studied. The Volatility Index (VIX) measures Indian stock market volatility. Average return measures overall and sectorial stock market performance, whereas trading volume measures market liquidity (Lei, 2005). Change in VIX symbolises volatility, and a dummy variable was inserted to account for COVID-19, Le, March 11, 2020, forward. In addition to return, volume, volatility, and COVID-19 dummy, daily data allowed for the inclusion of essential control variables. These include oil prices, exchange rates, FPI, S&P 500, and government bond-yield movements. Data gaps were filled with the series' mean (Peng & Lei, 2005). The table lists all variables. The study uses the mean comparison test to examine COVID-19's impact on stock market activity. This test compares the variables' means before and during the COVID-19 epidemic. It shows whether COVID-19

mean return and volume are higher or lower than pre-COVID-19. For this test, the data is classified into two 79-observation time series for each variable: pre-COVID-19 (19/11/2019 to 10/03/2020) and COVID-19 (11/03/2020 to 07/07/2020).

TABLE 1. **Description of Variables**

| Variable Code | Variable Name | Definition | Source |
|---|---|---|---|
| NR | NIFTY Return | The daily return* of NIFTY 50 index | NSE |
| NV | Logged NIFTY Volume | The daily trading volume** of NIFTY 50 index | NSE |
| Cov | COVID-19 dummy | The value is 1 for all days post 11/03/2020 and 0 otherwise | - |
| VIX | Change in Volatility Index | Daily Percentage change in the Volatility Index | NSE |
| AR | Auto Return | The daily return of NIFTY Auto index | NSE |
| AV | Logged Auto Volume | The daily trading volume of NIFTY Auto index | NSE |
| PR | Pharmaceutical Return | The daily return of NIFTY Pharma index | NSE |
| PV | Logged Pharmaceutical Volume | The daily trading volume of NIFTY Pharma index | NSE |
| IR | IT Return | The daily return of NIFTY IT index | NSE |
| IV | Logged IT Volume | The daily trading volume of NIFTY IT index | NSE |
| FR | FMCG Return | The daily return of NIFTY FMCG index | NSE |
| FV | Logged FMCG Volume | The daily trading volume of NIFTY FMCG index | NSE |
| ER | Energy Return | The daily return of NIFTY Energy index | NSE |
| EV | Logged Energy Volume | The daily trading volume of NIFTY Energy index | NSE |
| MR | Metal Return | The daily return of NIFTY Metal index | NSE |
| MV | Logged Metal Volume | The daily trading volume of NIFTY Metal index | NSE |

| Variable Code | Variable Name | Definition | Source |
|---|---|---|---|
| FSR | Financial Services Return | The daily return of NIFTY Financial services index | NSE |
| FSV | Logged Financial Service Volume | The daily trading volume of NIFTY Financial services index | NSE |
| RR | Realty Return | The daily return of NIFTY Realty index | NSE |
| RV | Logged Realty Volume | The daily trading volume of NIFTY Realty index | NSE |
| BR | Banking Return | The daily return of NIFTY bank index | NSE |
| BV | Logged Banking Volume | The daily trading volume of NIFTY bank index | NSE |
| Oil | Change in Oil Price | Daily percentage change in Europe Brent Spot Price FOB ($/barrel) | Eia.gov |
| EX | Growth in Exchange Rate | Daily percentage change in INR-USD Exchange Rate (INR/USD) | Yahoo Finance |
| FPI | Growth in Foreign Portfolio Investment | Daily percentage change in Net FPI investment in equity (Rs. Crore) | NSDL |
| SP | S&P Index Return | The daily return of S&P 500 index | Yahoo Finance |
| BY | Growth in Bond Yield | Daily percentage change in 1-year Indian Government Bond Yield | Investing.com |

**Daily Return %= $[(P_t - P_{t-1})/ P_{t-1}]$*100 where $P_t$ is the current closing price, and $P_{t-1}$ is the previous day's closing price. **Volume in INR*

The paper uses Ordinary Least Squares (OLS) to investigate the association between Indian stock market performance and COVID-19. The analysis seeks to determine the impact of the Coronavirus epidemic on NIFTY 50, NIFTY sectorial, and VIX return and volume. Use time-series regression analysis instead of panel data analysis to account for sector-specific effects. This method creates a linear relationship between the dependent variable (index return or volume) and the independent variable (COVID-19 dummy), revealing whether the pandemic affects the stock market. Industry-specific factors can be addressed by studying each sector separately. This paper employs OLS regression in line with Ortmann et al. (2020) to assess COVID-19's impact on the stock market over months.

This study's regressions follow a trend. First, COVID-19's impact on the broad market was studied by regressing the NIFTY 50 return on the COVID-19 dummy, recorded NIFTY 50 volume, VIX, and other control variables.

| | | |
|---|---|---|
| $ER_t = \alpha + \beta_1 EV_t + \beta_2 ER_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * EV_t + \gamma_2 Cov * VIX_t + \gamma_3 Cov * Oil_t + \gamma_4 Cov * ER_t + \gamma_5 Cov * SP_t$ | 1.6 | 9 |
| $EV_t = \alpha + \beta_1 ER_t + \beta_2 EV_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t$ | 2.6 | 9 |
| $MR_t = \alpha + \beta_1 MV_t + \beta_2 MR_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * MV_t + \gamma_2 Cov * VIX_t + \gamma_3 Cov * Oil_t + \gamma_4 Cov * ER_t + \gamma_5 Cov * SP_t$ | 1.7 | 10 |
| $MV_t = \alpha + \beta_1 MR_t + \beta_2 MV_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * Vix_t + \gamma_2 Cov * Oil_t + \gamma_3 Cov * SP_t$ | 2.7 | 10 |
| $FSR_t = \alpha + \beta_1 FSV_t + \beta_2 FSR_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t$ | 1.8 | 11 |
| $FSV_t = \alpha + \beta_1 FSR_t + \beta_2 FSV_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t$ | 2.8 | 11 |
| $RR_t = \alpha + \beta_1 RV_t + \beta_2 RR_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * RV_t + \gamma_2 Cov * VIX_t$ | 1.9 | 12 |
| $RV_t = \alpha + \beta_1 RR_t + \beta_2 RV_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * RR_t$ | 2.9 | 12 |
| $BR_t = \alpha + \beta_1 BV_t + \beta_2 BR_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * BV_t + \gamma_2 Cov * VIX_t$ | 1.10 | 13 |
| $BV_t = \alpha + \beta_1 BR_t + \beta_2 BV_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * BY_t$ | 2.10 | 13 |
| $VIX_t = \alpha + \beta_1 NR_t + \beta_2 NV_t + \beta_3 NV_{t-1} + \beta_4 VIX_t + \beta_5 Cov_t + \beta_6 Oil_t + \beta_7 ER_t + \beta_8 FPI_t + \beta_9 SP_t + \beta_{10} BY_t + \gamma_1 Cov * NV_t + \gamma_2 Cov * SP_t$ | 3.1 | 14 |


| | | |
|---|---|---|
| $ER_t = \alpha + \beta_1 EV_t + \beta_2 ER_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * EV_t + \gamma_2 Cov * VIX_t + \gamma_3 Cov * Oil_t + \gamma_4 Cov * ER_t + \gamma_5 Cov * SP_t$ | 1.6 | 9 |
| $EV_t = \alpha + \beta_1 ER_t + \beta_2 EV_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t$ | 2.6 | 9 |
| $MR_t = \alpha + \beta_1 MV_t + \beta_2 MR_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * MV_t + \gamma_2 Cov * VIX_t + \gamma_3 Cov * Oil_t + \gamma_4 Cov * ER_t + \gamma_5 Cov * SP_t$ | 1.7 | 10 |
| $MV_t = \alpha + \beta_1 MR_t + \beta_2 MV_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * Vix_t + \gamma_2 Cov * Oil_t + \gamma_3 Cov * SP_t$ | 2.7 | 10 |
| $FSR_t = \alpha + \beta_1 FSV_t + \beta_2 FSR_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t$ | 1.8 | 11 |
| $FSV_t = \alpha + \beta_1 FSR_t + \beta_2 FSV_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t$ | 2.8 | 11 |
| $RR_t = \alpha + \beta_1 RV_t + \beta_2 RR_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * RV_t + \gamma_2 Cov * VIX_t$ | 1.9 | 12 |
| $RV_t = \alpha + \beta_1 RR_t + \beta_2 RV_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * RR_t$ | 2.9 | 12 |
| $BR_t = \alpha + \beta_1 BV_t + \beta_2 BR_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * BV_t + \gamma_2 Cov * VIX_t$ | 1.10 | 13 |
| $BV_t = \alpha + \beta_1 BR_t + \beta_2 BV_{t-1} + \beta_3 Cov_t + \beta_4 VIX_t + \beta_5 Oil_t + \beta_6 EX_t + \beta_7 FPI_t + \beta_8 SP_t + \beta_9 BY_t + \gamma_1 Cov * BY_t$ | 2.10 | 13 |
| $VIX_t = \alpha + \beta_1 NR_t + \beta_2 NV_t + \beta_3 NV_{t-1} + \beta_4 VIX_t + \beta_5 Cov_t + \beta_6 Oil_t + \beta_7 ER_t + \beta_8 FPI_t + \beta_9 SP_t + \beta_{10} BY_t + \gamma_1 Cov * NV_t + \gamma_2 Cov * SP_t$ | 3.1 | 14 |


## 3. EMPIRICAL RESULTS AND ANALYSIS

After the news of COV ID-19 being a pandemic hit the market, equities' overall trading volume jumped in eight sectors. The direction of the change in trading volume in one industry, real estate, after the pandemic is unknown. NIFTY-50 trade volume surged after the pandemic announcement. The returns in all nine sectors changed significantly following the COVID-19 pandemic, although the direction of change is unknown. Similar findings are apparent in the NIFTY-50 index, where the difference in returns before and during COVID-19 is significant. In eight industries, including Metal, Financial Services, Bank, Energy, FMCG, IT, Pharmaceuticals, and Auto, returns during COVID-19

are higher than before the epidemic. In contrast, real estate returns decreased following COVID-19. COVID-19 NIFTY-50 returns were higher than pre-COVID-19 results.

We analyse the general market and sector-wise impact of the COVID-19 epidemic and VIX fluctuation on interest variables.

To begin the analysis, we tested the stationarity of all time series and discovered that they are stationary at a level (Appendix 1, Table 3). Table 4 shows that Equation 1.1's COVID-19 coefficient is negative and significantly affects NIFTY 50 return at the 10% level. COVID-19 influences market return with other variables. The interaction between VIX and COVID-19 is significant, showing a higher impact of VIX fluctuation in the presence of COVID-19. S&P return alone is not substantial, but it increases NIF. COVID-19 rejoins TY 50. COVID-19 has a more significant impact on market return with changes in VIX and S&P.

For Equation 2.1 (Table 4), the constant term and NIFTY 50 return regression coefficients were significant, as was the volume lag, which had a positive and substantial impact on volume. COVID-19 positively and significantly influences NIFTY 50 volume, showing more market liquidity during the epidemic. Among the control variables, oil price change decreases market volume but enhances market liquidity when it interacts with COVID-19.

Table 5 shows COVID-19's influence on returns and volume in the auto sector. Both constant term and Auto volume affect Auto return positively. Auto return boosts Auto volume. While return latency hurts recovery, volume lag boosts volume. COV ID-19 hurts Auto returns, but not VIX or S&P returns. An increase in VIX change reduces Auto return, and the interaction enhances this effect. Oil price changes influence Auto return positively, and the S&P return coefficient interacts with COVID-19. Increases in VIX and COVID-19 increase auto volume. Thus, auto industry performance dipped during COVID-19 despite increased liquidity.

COVID-19 hurts the NIFTY Pharma index return (Table 6). COVID-19 boosts pharma volume. Changes in VIX also negatively affect Pharma returns. With COVID-19, the book has a beneficial impact on recovery. Oil prices and COVID-19 combine to affect Pharma's performance negatively. Pharma volume is positively affected by its lag, and COVID-19 enhances the sector's liquidity in solo, with sector return, and when VIX appreciates.

The return for the NIFTY IT index (Table 7) is much lower during the COV ID-19 epidemic than without. The VIX coefficient is negative, signifying a drop in return when volatility rises. In the presence of COVID-19, a VIX increase reduces the return. COVID-19 and IT volume positively affect return, but exchange rate negatively. IT volume and lag are correlated. COVID-19 is noteworthy and encouraging, demonstrating improved IT sector liquidity during the Coronavirus epidemic.

COVID-19 has a strong negative influence on FMCG return (Table 8) but a positive impact on volume. Both the constant term and the variable lags are significant. The VIX change coefficient affects FMCG return negatively. In the presence of COVID-19, VIX worsens return. Changes in VIX and FMCG return affect FMCG volume positively and significantly.

Table 9 shows the COVID-19 impact on NIFTY Energy's return for the energy industry. Despite being negative, COV ID-19 no longer affects Energy return. Lag and VIX affect energy return badly. With COVID-19, a rise in VIX reduces the return. In the presence of COVID-19, oil price changes have a negative interaction term. COVID-19 positively affects energy industry liquidity. Energy return and VIX fluctuation increase Energy volume. The constant time and volume lag both positively affect Energy volume.

COVID-19 affects NIFTY Metal's return and volume (Table 10). The interaction terms are significant, demonstrating that regressors affect metal sector returns more during COVID-19. VIX change negatively affects Metal return but positively affects Metal volume. Oil price change affects Metal return positively but negatively impacts volume. In the presence of COVID-19, oil price fluctuation negatively affects Metal Return and Volume positively. The interaction between COVID-19 and exchange rate change is considerable, demonstrating a negative return. COVID-19 interacts with S&P to boost Metal return.

Table 11 shows that COVID-19 strongly affects the Financial Services sector return and volume. Financial Services index returns are lower during COVID-19. COVID-19 benefits the book. The constant term coefficient is relevant in both circumstances, but the lag is only in volume. Financial Services volume boosts return. Significant Change in the VIX coefficient implies that an increase in VIX causes sector return to fall. This sector's volume is positively affected by sector return but not by VIX. The Real Estate sector's recovery (Table 12) is unaffected by volume or latency. Changes in VIX affect returns but not liquidity in the Realty sector. COVID-19 strongly negatively affects Realty return when interacting with VIX fluctuation and volume. COVID-19 has no impact on Realty volume. Control factors don't alter sector volume.

Table 13 shows that COVID-19 has a negative influence on banking returns. Though the sector volume impact isn't significant, its interaction with COVID-19 is. VIX change negatively affects sector return but not volume, and in the presence of COVID-19, it further reduces the return. Bank volume doesn't affect VIX. Constant term affects Bank volume but not return.

COVID-19 increases bank volume as bond yields rise. Aside from the interaction term, Bank returns and lag positively affect the Banking sector's trade volume. No other regressor affects bank liquidity.

Table 14's Change in Volatility Index is negatively impacted by NIFTY return and COVID-19. VIX change plummets with COV ID-19. Positive NIFTY volume and COVID-19 interaction. S&P return negatively affects VIX change, whereas COVID-19 negates this effect by making the coefficient positive.

Figures 1 and 2 show the total study with forest plots. Horizontal lines show each dependent variable's coefficients and 95% confidence intervals. Horizontal lines to the left of 0 indicate negative COVID-19 influence, while those to the right indicate positive. The COVID-19 epidemic has affected the liquidity of NIFTY 50 index stocks and most industries, including Auto, Pharmaceuticals, IT, FMCG, Energy, Metal, and Financial Services. Only Banking and Real Estate were unaffected. All industries saw positive trading volume changes due to COVID-19's implications on liquidity. Despite positive liquidity throughout the epidemic, Realty and Banking were unaffected by COVID-19.

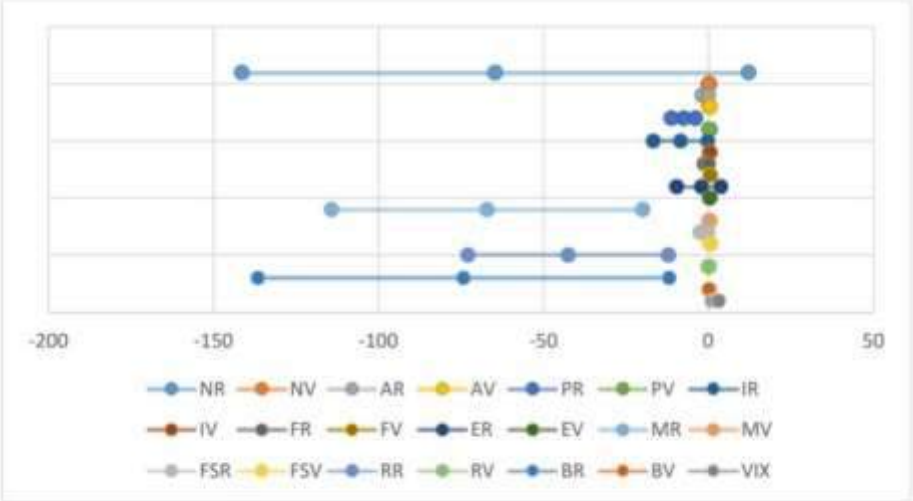


FIGURE 1. **Forest Plot summarizing the impact of COVID-19 on sector return and volume**

The financial performance of NIFTY 50 in terms of average returns witnessed no significant change during COVID-19 at a 5% significance level. At 10% significance, COVID-19's influence is noteworthy. Banking, Real Estate, Financial Services, Metal, FMCG, IT, Pharmaceuticals, and Auto saw negative returns due to COVID-19. Contrary to Fun and Shen (2020) and Polemis and Source (2001), the COVID-19 coefficient for Energy sector returns was negative and insignificant (2020). Only the Energy sector kept pace with NIFTY 50 because the epidemic didn't affect its returns.

The insignificant impact of COVID-19 on NIFTY 50 return implies that while most other markets have already suffered a significant decrease in performance, the total stock market return has shown resistance to the projected pandemic problem. Most sectoral indices reveal an adverse effect of COVID-19 on return, according to He et al. (20206) for the Shanghai stock exchange, and a positive influence on volume, contradicting the findings of Haroon and Rizvi (2020). They demonstrated a negative impact on market liquidity. Auto, Pharma, IT, FMCG, Metal, and Financial Services have decreased returns and increased volume. COVID-19 highlighted unfavourable investor sentiment, hurting these sectors' returns. This could result from lower sales revenue in these industries, especially Automobiles and Metal, whose demand can be delayed in uncertain times. Manufacturing closure adds to worries. Pharma's inability to solve COVID-19 could send a wrong signal to investors. It looks to be firms' best bet for continuing operations throughout the pandemic, but initial COVID-19 returns don't reflect this. Essential items cannot be delayed, which is good news for the FMCG sector. Still, consumers can select lower-priced substitutes and forego buying extra stuff, which affects sales revenue. This sector may see lower returns. Financial Services and Banking likewise see negative returns as consumers migrate to essentials due to decreasing incomes. Demand for dwellings and land has slowed, lowering real estate returns. Energy is the only area where COVID-19 hasn't hurt returns. Reduced energy demand due to economic shutdowns has led to a massive drop in oil prices, which investors may perceive as a chance to buy Energy stocks. Collective buying and bullish mood boost price and return.

COVID-19 has increased market activity due to rising investor interest in equities. The Securities and Exchange Board of India (SEBI) has eased restrictions

on rights issues, follow-on public offerings, simplified pricing systems, etc., to help corporations raise funds and attract new investors (The Asian Age, 2020). SEBI chairman says retail investor activity rose during the COVID-19 closure, and numerous new Demat accounts were formed (The Asian Age, 2020). The RBI's 115-basis-point Repo rate drop has also moved investor preference from fixed-income to equity (NDTV Profit, 2020). Le only sees two sectors affected by COVID-19. Banking and property. Despite market liquidity, no industry is pandemic-proof. Contrary to expectations, COVID-19 hurts VIX change.

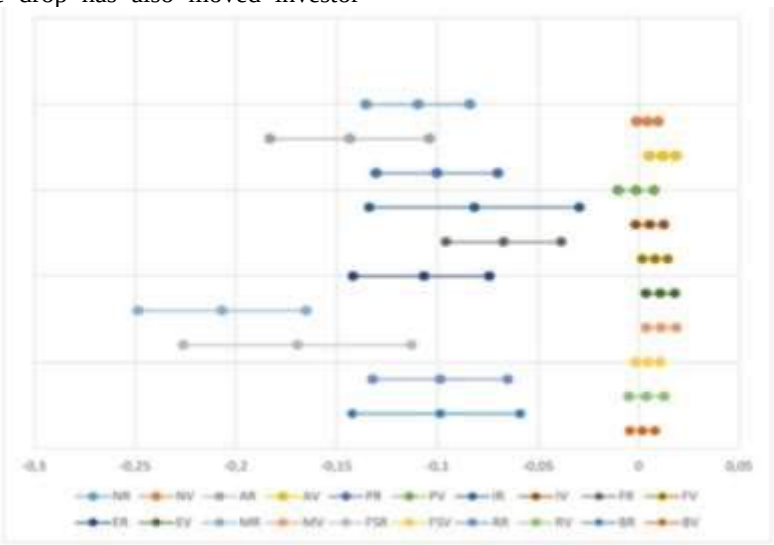

FIGURE 2. **Forest Plot summarizing the impact of VIX on sector return and volume**

The NIFTY 50 index remained impervious to the COVID-19 epidemic, although sectoral returns were affected. The NIFTY 50 index is constructed of the top-performing enterprises across all industries. This index's industrial diversification can lessen pandemic effects. Sectoral indices include sector-specific enterprises that may have a more robust (positive or negative) pandemic reaction. Top stock market performers can perform well in a pandemic, while medium or slow-growth enterprises in sectoral indices cannot. Sectoral indices show pandemic impact, while the benchmark index does not.

The COVID-19 epidemic can increase market uncertainty, causing investors to leave long holdings. Selling pressure lowers prices and market returns. NIFTY SO's average returns fell, but the decline was slight. Individual sectors suffered greatly from the outbreak. These sectors increased liquidity and gave investors hope of a rebound. During the epidemic, the general market index also gained liquidity. All sectors remained consistent with the benchmark index in liquidity and market momentum.

## Appendix 1. Empirical Results

TABLE 3. **Breakpoint ADF Unit Root Test Results**

| Variables | Test statistic | p-value at I(0) | Variables | Test statistic | p-value at I(0) |
|---|---|---|---|---|---|
| *NR* | −18.5524 | <0.01* | *MR* | −18.6035 | <0.01* |
| *NV* | −7.7319 | <0.01* | *MV* | −10.8148 | <0.01* |
| *VIX* | −13.5546 | <0.01* | *FSR* | −17.1033 | <0.01* |
| *AR* | −17.5438 | <0.01* | *FSV* | −5.5375 | <0.01* |
| *AV* | −8.8558 | <0.01* | *RR* | −15.7274 | <0.01* |
| *PR* | −16.6215 | <0.01* | *RV* | −10.6375 | <0.01* |
| *PV* | −7.3491 | <0.01* | *BR* | −16.9967 | <0.01* |
| *IR* | −20.5356 | <0.01* | *BV* | −7.2000 | <0.01* |
| *IV* | −7.0746 | <0.01* | *Oil* | −21.9112 | <0.01* |
| *FR* | −18.7481 | <0.01* | *EX* | −21.5819 | <0.01* |
| *FV* | −9.4985 | <0.01* | *FPI* | −21.2489 | <0.01* |
| *ER* | −20.1098 | <0.01* | *SP* | −10.5749 | <0.01* |
| *EV* | −8.5922 | <0.01* | *BY* | −16.9822 | <0.01* |

TABLE 8. **Regression results for Equation 1.5 and Equation 2.5**

| Dependent Variable: FMCG Sector Returns | | | Dependent Variable: FMCG Sector Volume | | |
|---|---|---|---|---|---|
| Independent V ariable | Coefficient | p- value | Independent Variable | Coefficient | p- value |
| FV | 1.11653 | 0.0026** | SP | –0.00403 | 0.7002 |
| SP | 0.056529 | 0.5032 | VIX | 0.00798 | 0.0135** |
| VIX | –0.06718 | 0** | OIL | –0.00174 | 0.5721 |
| OIL | 0.005204 | 0.8142 | FPI | –8.81E–06 | 0.5859 |
| FPI | 5.57E–05 | 0.1223 | EX | 0.038838 | 0.2485 |
| EX | –0.30744 | 0.0959* | COV | 0.404269 | 0** |
| COV | –0.76268 | 0.0216** | BY | 0.006776 | 0.5412 |
| BY | –0.04152 | 0.3625 | FR | 0.040474 | 0.0017** |
| FR(–1) | –0.27489 | 0.0542* | FV(–1) | 0.493526 | 0** |
| COV*VIX | –0.12048 | 0.005** | C | 1.676401 | 0** |
| COV*SP | 0.152478 | 0.2225 | | | |
| C | –3.68427 | 0.0023** | | | |
| Durbin Watson Stat | 1.8077 | | Durbin Watson Stat | 2.2036 | |
| R-squared | 0.392142 | | R-squared | 0.697311 | |

** and ** indicate statistical significance at the 10% and 5 % levels respectively.*

TABLE 9. **Regression results for Equation 1.6 and Equation 2.6**

| Dependent Variable: Energy Sector Returns | | | Dependent Variable: Energy Sector Volume | | |
|---|---|---|---|---|---|
| Independent Variable | Coefficient | p- value | Independent Variable | Coeffi- cient | p- value |
| EV | 0.096651 | 0.7612 | VIX | 0.010574 | 0.0039** |
| VIX | –0.10666 | 0** | SP | –0.03519 | 0.0025** |
| SP | 0.092235 | 0.4266 | OIL | 0.00061 | 0.8539 |
| OIL | 0.111217 | 0.0169** | FPI | –4.74E–06 | 0.7866 |
| FPI | –0.00015 | 0.0062** | EX | 0.039527 | 0.2754 |
| EX | –0.08446 | 0.6666 | COV | 0.270508 | 0** |
| COV | –9.71723 | 0.1637 | BY | 0.001841 | 0.877 |
| BY | –0.07339 | 0.2664 | ER | 0.034016 | 0.0061** |
| ER(–1) | –0.20969 | 0.0136** | EV(–1) | 0.506841 | 0** |
| COV*EV | 1.931872 | 0.1668 | C | 2.240956 | 0** |
| COV*VIX | –0.0989 | 0.0495** | | | |
| COV*OIL | –0.10941 | 0.0328** | | | |
| COV*EX | –0.77611 | 0.0908* | | | |
| COV*SP | 0.322434 | 0.034** | | | |
| C | –0.46778 | 0.7392 | | | |
| Durbin Watson Stat | 1.8783 | | Durbin Watson Stat | 2.1025 | |
| R-squared | 0.482496 | | R-squared | 0.578847 | |

** and ** indicate statistical significance at the 10% and 5 % levels respectively.*

TABLE 6. **Regression results for Equation 1.3 and Equation 2.3**

| Dependent Variable: Pharma Sector Returns | | | Dependent Variable: Pharma Sector Volume | | |
|---|---|---|---|---|---|
| Independent Variable | Coefficient | p- value | Independent Variable | Coefficient | p- value |
| PV | 0.409693 | 0.1854 | SP | –0.0305 | 0.0083** |
| VIX | –0.10026 | 0** | VIX | –0.00147 | 0.7451 |
| SP | –0.00318 | 0.9766 | PR | 0.026542 | 0.1823 |
| OIL | 0.063366 | 0.1525 | OIL | 0.000589 | 0.8532 |
| FPI | –5.61E-06 | 0.9451 | FPI | –2.23E-05 | 0.1739 |
| EX | 0.061108 | 0.7227 | EX | 2.01E-02 | 0.554 |
| COV | –7.68333 | 0.0001** | COV | 0.242935 | 0** |
| BY | –0.03754 | 0.5071 | BY | –0.02194 | 0.0515* |
| PR(–1) | –0.02352 | 0.6889 | PV(–1) | 0.627147 | 0** |
| COV*OIL | –0.10765 | 0.026** | COV*PR | 0.047603 | 0.0867* |
| COV*SP | 0.423696 | 0.0009** | COV*VIX | 0.012601 | 0.053* |
| COV*PV | 1.92E+00 | 0.0002** | C | 1.187532 | 0** |
| C | –1.22E+00 | 0.2187 | | | |
| Durbin Watson Stat | 1.8724 | | Durbin Watson Stat | 2.2210 | |
| R-squared | 0.413223 | | R-squared | 0.731519 | |

** and ** indicate statistical significance at the 10% and 5 % levels respectively.*

TABLE 7. **Regression results for Equation 1.4 and Equation 2.4**

| Dependent Variable: IT Sector Returns | | | Dependent Variable: IT Sector Volume | | |
|---|---|---|---|---|---|
| Independent Variable | Coefficient | p- value | Independent Variable | Coefficient | p- value |
| IV | –0.04473 | 0.9084 | VIX | 0.00831 | 0.137 |
| VIX | –0.08169 | 0.0023** | SP | –0.01583 | 0.1775 |
| SP | 0.294699 | 0.0026** | OIL | –0.0045 | 0.1862 |
| OIL | 0.02321 | 0.3121 | FPI | –1.38E–06 | 0.9388 |
| FPI | 0.000131 | 0.1215 | EX | 0.059864 | 0.1117 |
| EX | 0.033186 | 0.8653 | COV | 0.296812 | 0** |
| COV | –8.55876 | 0.0417** | BV | 0.015188 | 0.2145 |
| BV | –0.01438 | 0.8176 | IR | 0.022847 | 0.0618* |
| IR(–1) | –0.30747 | 0.0013** | IV(–1) | 0.363907 | 0** |
| COV*IV | 3.372529 | 0.0482** | C | 2.038507 | 0** |
| COV*VIX | –0.11918 | 0.0067** | | | |
| COV*EX | –1.117.38 | 0.01199** | | | |
| C | 0.202245 | 0.8674 | | | |
| Durbin Watson Stat | 1.89986 | | Durbin Watson Stat | 2.1621 | |
| R-squared | 0.461646 | | R-squared | 0.408386 | |

** and ** indicate statistical significance at the 10% and 5 % levels respectively.*

TABLE 4. **Regression results for Equation 1.1 and Equation 2.1**

| Dependent Variable: Nifty Return | | | Dependent Variable: Nifty Volume | | |
|---|---|---|---|---|---|
| Independent Variable | Coefficient | p-value | Independent Variable | Coefficient | p-value |
| NV | 0.298761 | 0.4438 | VIX | 0.034179 | 0.131 |
| COV | –64.7355 | 0.0983* | SP | –0.00944 | 0.2537 |
| VIX | –0.10867 | 0** | OIL | –0.01547 | 0.0168** |
| OIL | 0.023136 | 0.3339 | NR | 0.038973 | 0.0503* |
| EX | –0.27984 | 0.0705* | FPI | –1.38E-05 | 0.2587 |
| FPI | –1.57E–06 | 0.9681 | EX | 0.022269 | 0.3864 |
| SP | 0.087638 | 0.2652 | COV | 0.974023 | 0.0248** |
| BV | –0.0603 | 0.2786 | BV | 0.000395 | 0.9622 |
| NR(–1) | –0.17620 | 0.0499** | NV(–1) | 0.621152 | 0** |
| COV*NV | 3.164472 | 0.0989* | COV*NR | –0.014609 | 0.4156 |
| COV*VIX | –0.13341 | 0.0034** | COV*OIL | 0.015284 | 0.023** |
| COV*EX | –0.65124 | 0.1666 | C | 7.653711 | 0** |
| COV*SP | 0.336569 | 0.0848** | | | |
| C | –0.01278 | 0.4436 | | | |
| Durbin Watson Stat | 1.80931 | | Durbin Watson Stat | 2.1927 | |
| R-squared | 0.529498 | | R-squared | 0.530261 | |

** and ** indicate statistical significance at the 10% and 5 % levels respectively.*

TABLE 5. **Regression results for Equation 1.2 and Equation 2.2**

| Dependent Variable: Auto Sector Returns | | | Dependent Variable: Auto Sector Volume | | |
|---|---|---|---|---|---|
| Independent Variable | Coefficient | p- value | Independent Variable | Coefficient | p- value |
| OIL | 0.003609 | 0.0627* | OIL | 0.000438 | 0.6871 |
| AV | 2.42E+00 | 0** | FPI | –3.20E-05 | 0.0467** |
| FPI | 5.45E-05 | 0.4935 | EX | –0.00283 | 0.9334 |
| EX | –0.23618 | 0.3746 | COV | 0.253074 | 0** |
| COV | –1.07536 | 0.0161** | BV | –0.01373 | 0.3168 |
| BV | –0.07046 | 0.279 | SP | –0.01056 | 0.3084 |
| SP | –0.11192 | 0.3426 | VIX | 0.011773 | 0.0886** |
| VIX | –0.1435 | 0** | AR | 0.056935 | 0** |
| AR(–1) | –0.11997 | 0.0678* | AV(–1) | 0.516988 | 0** |
| COV*VIX | –0.10407 | 0.0218** | C | 2.20637 | 0** |
| COV*OIL | –0.00544 | 0.2301 | | | |
| COV*EX | –0.83485 | 0.1704 | | | |
| COV*SP | 0.543891 | 0.0033** | | | |
| C | –0.95219 | 0** | | | |
| Durbin Watson Stat | 1.7343 | | Durbin Watson Stat | 2.1047 | |
| R-squared | 0.404815 | | R-squared | 0.623841 | |

** and ** indicate statistical significance at the 10% and 5 % levels respectively.*

TABLE 10. **Regression results for Equation 1.7 and Equation 2.7**

| Dependent Variable: Metal Sector Returns | | | Dependent Variable: Metal Sector Volume | | |
|---|---|---|---|---|---|
| Independent Variable | Coefficient | p- value | Independent Variable | Coefficient | p- value |
| MV | 1.897678 | 0.0004*** | VIX | 0.011029 | 0.0036*** |
| VIX | -0.20688 | 0** | SP | 0.01147 | 0.5246 |
| SP | -0.10727 | 0.4321 | OIL | -0.01361 | 0.0765* |
| OIL | 0.18766 | 0.0801** | FPI | -2.18E-05 | 0.1084 |
| FPI | 0.000157 | 0.0278** | EX | 0.010032 | 0.5282 |
| EX | -0.01804 | 0.9461 | COV | 0.196665 | 0** |
| COV | -67.2056 | 0.0054** | BV | -0.00684 | 0.463 |
| BV | -0.09475 | 0.0858* | MR | 0.04695 | 0** |
| MR(-1) | -0.12781 | 0.0443** | MV(-1) | 0.512559 | 0** |
| COV*MV | 3.531358 | 0.006** | COV*VIX | 0.006063 | 0.2267 |
| COV*VIX | -0.07301 | 0.1163 | COV*OIL | 0.012922 | 0.1089 |
| COV*OIL | -0.17412 | 0.0012** | COV*SP | -0.03029 | 0.1473 |
| COV*EX | -1.06474 | 0.0388** | C | 12.78862 | 0** |
| COV*SP | 0.569778 | 0.0029** | | | |
| C | -55.3301 | 0.0004** | | | |
| Durbin Watson Stat | 2.0100 | | Durbin Watson Stat | 1.9841 | |
| R-squared | 0.560834 | | R-squared | 0.442935 | |

** and ** indicate statistical significance at the 10% and 5 % levels respectively.*

TABLE 11. **Regression results for Equation 1.8 and Equation 2.8**

| Dependent Variable: Financial Services Returns | | | Dependent Variable: Financial Services Volume | | |
|---|---|---|---|---|---|
| Independent ariable | Coefficient | p- value | Independent Variable | Coefficient | p- value |
| FSV | 1.656354 | 0.0008** | VIX | 0.004497 | 0.1462 |
| OIL | 0.026032 | 0.4582 | SP | -0.01106 | 0.2655 |
| SP | 0.331042 | 0.0042** | OIL | -0.00086 | 0.7664 |
| VIX | -0.16948 | 0** | FSR | 0.027074 | 0.0012** |
| FPI | 2.24E-05 | 0.6936 | FPI | -2.28E-05 | 0.1321 |
| EX | -0.70827 | 0.048** | EX | 0.078037 | 0.0142** |
| COV | -1.50696 | 0.0107** | COV | 0.399453 | 0** |
| BV | -0.05573 | 0.5908 | BV | 0.016048 | 0.1225 |
| FSR(-1) | -0.10449 | 0.2231 | FSV(-1) | 0.466922 | 0** |
| C | -31.0005 | 0.0007** | C | 10.01625 | 0** |
| Durbin Watson Stat | 1.8880 | | Durbin Watson Stat | 2.2170 | |
| R-squared | 0.336153 | | R-squared | 0.688333 | |

** and ** indicate statistical significance at the 10% and 5 % levels respectively.*

TABLE 12. **Regression results for Equation 1.9 and Equation 2.9**

| Dependent Variable: Realty Sector Returns | | | Dependent Variable: Realty Sector Volume | | |
|---|---|---|---|---|---|
| Independent Variable | Coefficient | p- value | Independent Variable | Coefficient | p- value |
| RV | 0.22430 | 0.645 | BY | 0.013041 | 0.4554 |
| VIX | -0.09862 | 0** | COV | 0.019336 | 0.7158 |
| SP | 0.322376 | 0.0004** | EX | 0.02893 | 0.5217 |
| OIL | -0.01036 | 0.7113 | FPI | -2.58E-05 | 0.2369 |
| FPI | -0.00016 | 0.0812* | OIL | 9.70E-04 | 0.8135 |
| EX | -0.49257 | 0.0627* | RR | 0.007826 | 0.6976 |
| COV | -42.6135 | 0.0062** | SP | -0.01365 | 0.3309 |
| BY | -0.03024 | 0.7289 | VIX | 0.003696 | 0.4052 |
| RR(-1) | -0.04493 | 0.4729 | RV(-1) | 0.407279 | 0** |
| COV*RV | 2.556651 | 0.0006** | COV*RR | 0.03451 | 0.1338 |
| COV*VIX | -0.13178 | 0.0009** | C | 9.775192 | 0** |
| C | -3.59107 | 0.6526 | | | |
| Durbin Watson Stat | 1.7841 | | Durbin Watson Stat | 2.2004 | |
| R-squared | 0.407804 | | R-squared | 0.199623 | |

** and ** indicate statistical significance at the 10% and 5 % levels respectively.*

TABLE 13. **Regression results for Equation 1.10 and Equation 2.10**

| Dependent Variable: Banking Sector Returns | | | Dependent Variable: Banking Sector Volume | | |
|---|---|---|---|---|---|
| Independent Variable | Coefficient | p- value | Independent Variable | Coefficient | p- value |
| BV | 0.485275 | 0.224 | VIX | 0.001726 | 0.3857 |
| VIX | -0.10063 | 0** | SP | -0.01205 | 0.2325 |
| SP | 0.498752 | 0.0004** | OIL | -0.00226 | 0.4434 |
| OIL | 0.028023 | 0.3128 | FPI | -8.23E-06 | 0.5479 |
| FPI | -2.9eE-05 | 0.5392 | EX | 0.015854 | 0.6227 |
| EX | -0.58783 | 0.0735* | COV | 0.051555 | 0.1874 |
| COV | -74.5318 | 0.0196** | BY | -0.01453 | 0.4057 |
| BY | -0.07749 | 0.3951 | BR | 0.021756 | 0.0073** |
| BR(-1) | -0.09244 | 0.2635 | BV(-1) | 0.468359 | 0** |
| COV*BV | 3.722041 | 0.0201** | COV*BY | 0.042913 | 0.0481** |
| COV*VIX | -0.20162 | 0.0003** | C | 6.55264 | 0** |
| C | -9.5661 | 0.2207 | | | |
| Durbin Watson Stat | 1.8404 | | Durbin Watson Stat | 2.0352 | |
| R-squared | 0.417006 | | R-squared | 0.509032 | |

** and ** indicate statistical significance at the 10% and 5 % levels respectively.*

TABLE 14. **Regression results for Equation 3.1**

| Dependent Variable: VIX Returns | | |
|---|---|---|
| Independent Variable | Coefficient | p- value |
| SP | -0.80219 | 0.0703* |
| OIL | 0.007163 | 0.8914 |
| NV | -0.8802 | 0.608 |
| NR | -1.84187 | 0** |
| EX | -0.14722 | 0.83 |
| COV | -310.897 | 0.0029** |
| BY | -0.14356 | 0.3842 |
| FPI | 0.000321 | 0.0747* |
| NV(-1) | 2.825038 | 0.0907* |
| COV*NV | 15.18069 | 0.0033** |
| COV*SP | 1.741589 | 0.0027** |
| C | -38.6541 | 0.2078 |
| Durbin Watson Stat | 1.9449 | |
| R-squared | 0.427058 | |

** and ** indicate statistical significance at the 10% and 5 % levels respectively.*

## HOW MARKETS OF DIFFERENT SECTORS GOT AFFECTED BY COVID-19

### Hospitality

- Many states have reinforced local lockdown regulations, which could repeat in 2020.
- This sector comprises restaurants, B&Bs, hostels, service apartments, taverns, bars, and nightclubs.
- The sector contributes much to India's GDP and has been hammered hard by state regulations and curfews.
- Many of these enterprises have shut down since they can only provide basic food. In areas with fewer limitations, footfall has dropped substantially.
- When covid-19 instances rose during the second wave, the hospitality industry in Maharashtra, the first state to implement tight limits, said it would kill many enterprises.
- Almost all hospitality-related firms face a similar difficulty.
- Many small enterprises may be forced to close permanently due to the second wave's economic impact.

### Tourism

- The tourism and travel sector, which employs millions of Indians, bounced back after the first covid wave until the second.
- The tourist sector contributes about 7% of India's GDP and includes hotels, homestays, holiday homes, and motels. The second round of restrictions has damaged the industry, battling to recover from initial losses in 2020.

- Many smaller enterprises may not be able to reopen until the second wave subsides, increasing unemployment and household earnings.

**Transportation and Tourism**

- Aviation and other travel sector firms struggled during the initial wave of the pandemic.
- Recent reports say plane travel has dropped 50%. People are scared to leave their homes, which hurts the travel industry. While airlines were incrementally increasing revenue margins, the second wave shook things up.

**Cars**

- The second wave slowed auto sales in the third and fourth quarters of 2021.
- Due to consumer attitude, dealership closures, and supply-side difficulties, many OEMs have advanced maintenance shutdowns to April and May.
- In April 2021, domestic auto sales (excluding commercial vehicles) fell 30% MoM.
- In April 2021, sales of personal vehicles and two-wheelers fell 10% and 34% MoM. Three-wheeler sales fell 57% as shared mobility dropped.
- In April 2021, exports grew 19% MoM, led by a 21% MoM increase in two-wheeler exports.
- The demand for personal vehicles (PV) was the least affected by rising demand in April 2021.
- The domestic personal vehicle market continues to trend towards utility vehicles, which account for 42% of domestic PV sales. Utility vehicle volumes decreased by 11% MoM, and passenger car volumes declined by 10% MoM and 12% from April 2019, driven by a 14% reduction in small car sales.
- In April 2021, motorcycle and scooter sales declined 34% and 33% MoM.
- Schools and colleges being closed in the first quarter have also hurt demand.
- Since cars are discretionary, sales depend on customer emotion.

**Construction and Real Estate**

- The downturn has devastated demand for Indian homes, according to a report. This has offset developer tax refunds.
- Many migrant workers have left urban areas, disrupting real estate and construction industry activities during the second wave. States where the virus is spreading quickly, where the virus is spreading swiftly, may suffer delays in completing pending projects.
- As migrant laborerslabourers return home, building sites are half-staffed.
- Due to the restrictions, builders are also short on materials.
- Real estate and construction could face significant disruption if covid-19 restrictions remain.

**Insurers**

- The second wave of Covid-19 claims might cost India's health insurance system billions.
- According to the General Insurance Council (GIC), the insurance industry registered 1 million coronavirus claims worth Rs 147.4 bn by 7 April 2021.
- GIC data shows insurers settled 8.6 lakh claims totalling Rs 79.1 bn.

## FUTURE

The Indian economy is anticipated to reach 5 trillion dollars by 2025, making it the third largest in the world.

Covid-19's spread caused a quick and historic reduction in economic production, which destroyed the stock market.

The pandemic made 2020 a year of unusual events, including a rapid stock market crash and recovery.

We were in a moment where everyone recognised India's fundamentals, and we still benefited despite having few foreign inflows due to the China problem, which damaged our education sector.

The pandemic made 2020 a year of unusual events, including a stock market meltdown and record-fast recovery. India's growth rates have increased every decade since independence, thanks to its young, ambitious population and expanding income. Developed nations, like Japan or the US, have an elderly population and a slow-growing market. The USA priorities prioritise debt. Savers and investors. The Indian stock market is outpacing the US in post-covid. India's GDP was about USD 2.72 trillion at the time, and the present government's strategy is to grow by 0 to 10% each year from 2020 to 2024. Demonetization, tax cuts, the Insolvency and Bankruptcy Code, privatisation, and other clean-up initiatives were significant long-term steps made by the Indian government.

A stock market illustrates the growth and success of listed enterprises and a country's financial advancement. The up-and-down movement of a financial tool A financial tool's up-and-down movement is influenced by little and large aspects, including tax legislation, climate, and legal framework.

India's market lacks investors. With 1.3 billion people, 4 crores invest in the stock market, which is less than 3% of the population. After post-covid, investors quadrupled after realising the market's potential and returns. This gives us a view of our future market, and

things seem well for long-term investors. With all the market's potential, an investor must assess it from a global perspective and grasp risk and investment objectives to design a safe investment strategy.

## CONCLUSION

Our results are consistent with Ashraf (2020), Yilmazkudey (2020), and Barro et al. (2020), who found that stock market performance has dropped due to COVID-19. According to the analysis, several Indian sectors are gaining trading volume but losing average returns because of the perception of a buoyant market after the outbreak. COVID-19 had no substantial impact on the Volatility Index, implying that investors' risk perception dropped, encouraging them to enter the market at low prices and increasing market volumes. Contrary to deteriorating economic factors. Investors love the stock market. People investing more in equities during a recession can potentially indicate a bubble. Due to the Financial sector's poor performance relative to the rest of the economy, average returns may fall shortly.

Pandemic shutdowns have caused a financial crisis in many governments. Companies and the government suffered a financial crunch due to limited or negligible economic activity. As evidenced in our data, companies in lockdown experienced a double-edged sword due to reduced revenue and stock price. Our data also demonstrates a favourable effect of the pandemic on trading volume, which may be due to increased investor confidence. COVID-19 reduced volatility in the Indian stock market, which affects investor confidence. The lower VIX indicates that investors' market confidence increased during the pandemic. Investors may want to enter the market when stock prices are low to profit when India's health and economic crisis ends. Diverting funds from debt-based securities to equities markets in response to RBI's demand-boosting initiatives could also increase investor confidence.

Reduced VIX and higher investor sentiment increased trading activity and volume. This study supports the risk aversion theory. Future research could focus on this effect's behavioural side.

Despite a good showing, the Indian stock market doesn't reflect the economy. It may be excellent news for investors, who can use the NIFTY 50's resiliency to offset losses in other COVID-19-vulnerable asset classes. Positives for policymakers include NIFTY-50 results not reacting much to the outbreak and most sectors gaining trade volume. The work could be expanded by understanding COVID-19's direct causal link to stock market performance.

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# A STUDY ON FINANCIAL INCLUSION THROUGH "PRADHAN MANTRI JAN DHAN YOJANA" IN INDIA

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**ABSTRACT** DOI No: 10.36713/epra11752 Article DOI: Article DOI: https://doi.org/10.36713/epra11752

***This paper aims to study the necessity of financial inclusion in India with reference to Pradhan Mantri jan Dhan Yojana.The sustainable growth of a developing coutry like India is only possible through the financial inclusion as providing financial services to all the people.Pradhan Mantri Jan Dhan Yojana is an ambitious scheme for the biggest financial inclusion in the world.This scheme was announced by the Hon'ble Prime Minister Narendra Modi on 15th August 2014 and it was launced on 28th August 2014.On the inaugural day, 1.5 crore new accounts were opened.This effort will lead a sustainable economic growth and also help in eradicate poverty. Financial inclusion is a creative idea which encourages the banking tradition and plays an important role to reduce poverty. PMJDY is based on the principle of "Sab Ka Sath , Sab Ka Vikas" ie provide financial services to those people who excluded from financial access.This initiative provides services like banking facility, credit, remittiances , affordable of this scheme is to provide zero balance account to the people ie there is no prerequisite to maintain any minimum balance in PMJDY accounts.***

**KEYWORDS:** ***Financial inclusion, Sustainable growth, Developing countries, Pradhan Mantri Jan Dhan Yojana, Financial access.***

## INTRODUCTION

Even after 70 years of independence, a large amount of India population remain unbanked and a huge sector of Indian people are out of formal banking system .In the recent years ,the government of India gives emphasise on financial inclusion .Financial inclusion provide affordable services to all the deprived people in the society.

Through this initiative, people can access appropriate and cost effective financial services. These include banking services ,insurance ,equity, loan etc. The target of financial inclusion is to provide products and services to the unbanked and underbanked people. Due to lack of financial institutions , poor people and women in rural areas face discrimination and they are belong to marginalized groups of population.

PMJDY, a national financial inclusion scheme is introduced in order to provide universal access to bank facilities with basic bank account and with Rs. 10,000 as overdraft facility to every eligible adult .PMJDY is a great initiative by Indian govt to expand financial inclusion .This scheme has also an advantage as it provides subsidies and other benefits to the beneficiary's account directly .In this way PMJDY is able to eliminate corruption and provides fundamental financial facility to vulnerable people .As this scheme provides zero balance account facility so many people living below poverty line can create a relationship with financial institution and able to gain financial support from banks.

## REVIEW OF LITERATURE

Harpreet Kaur and Kawal Nain Singh (2015) highlighted the concept of financial inclusion in India with reference to PMJDY and studied about how to achieve max financial inclusion for vulnerable people.

Dr.Vinit Kumar(2014) in his research paper discussed about the role and important of financial

inclusion .It highlighted the position of India in case of financial inclusion in related to other countries.
Dr.Pankaj Gupta and Vaibhav Shrivastava (2022) examined the role of PMJDY in enhancing public wealth .Banks provide affordable financial services to the beneficiaries at low cost under this scheme .And also defined Financial inclusion by the committee on Financial Inclusion on the action of avails facilities to the marginalized people of the country.

## OBJECTIVES

- To study the overall progress under Pradhan Mantri Jan Dhan Yojana.
- To highlight the benefits of PMJDY.
- To analysis the current status of PMJDY.
- To study the issues and challenges of PMJDY.

## METHODOLOGY

The data presented on this paper are collected from reputable journals ,books ,magazines and research papers etc The study is descriptive in nature and it is based on secondary sources.

**An Overview On Financial Inclusion In India :**

For a long time, India has recognized the economic essentiality for inclusive growth and has created a huge addition towards economic development by empowering the poor people .Reserve Bank of India has adopted various measures to the improvement of disadvantaged segments through services like priority sector lending ,micro credit and establishment of regional rural banks .In 2005, RBI has made its strategies towards financial inclusion in India .RBI permitted commercial banks as the intermediaries for assisting support to the people under financial inclusion .The committee related financial inclusion chaired by Dr. C Rangarajan provides guaranteeing to the vulnerable groups and low income people .In order to enhace financial inclusion,simplified KYC norms and making frill accounts, various initiatives were adopted such as aadhar enabled payment system ,financial literacy programmes ,Direct Benefits Transfer Swabhiman scheme etc.

In this regards , Pradhan Mantri Jan Dhan Yojana is a road map to financial inclusion in India.The slogan of the PMJDY is " Mera Khata-Bhagya Vidhaata".This scheme is the biggest initiative in the world for financial inclusion .The objective is to cover all households with the banking facilities in the country .It also provides inbuilt insurance coverage and financial literacy programme .PMJDY includes three phases in India

**First phase starts from 15th Aug 2014 to 14th Aug 2015** :

Here the main aim is to provide universal banking facilities to all areas except the poor infrastructure prevailing areas .Another objective is opening of Basic Savings Bank Accounts and providing inbuilt insurance of Rs 1 lakh through Rupay debit card.

**Second phase starts from 15th Aug 2015 to 14th Aug 2018 :**

Under this provision try to link between bank account and Aadhar card and subsidies are provided directly to the beneficiary .Here provides overdraft of Rs 5000 to the account holders and also implemented the "Swavalamban" for unorganized sector .In order to achieve inclusion ,NABARD established the Financial Inclusion Technology Fund and Financial Inclusion Fund.

**Third phase starts after 14th Aug 2018 :**

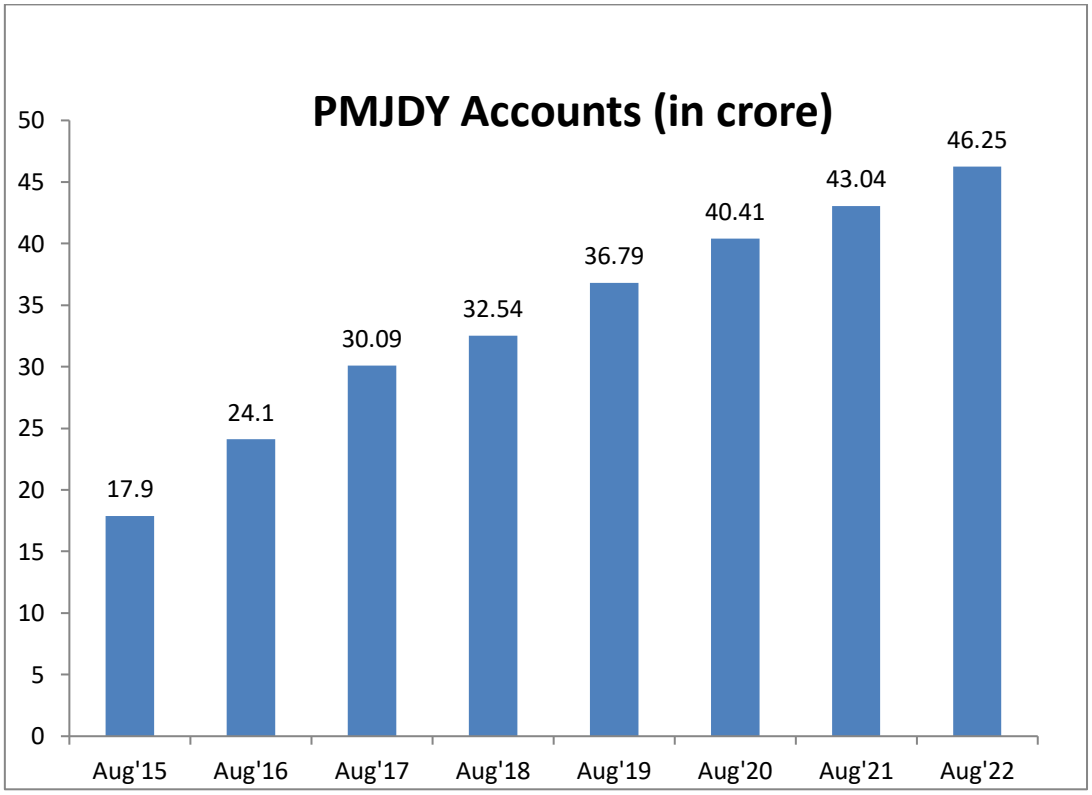
Under the phase, the overdraft limit extended to Rs 10,000 from Rs 5000.The age limit for beneficiaries of overdraft facility extended from 18-60 years to 18-65 years and the another important provision about accidental insurance cover is revised from Rs 1 lakh to Rs 2 lakh for those accounts which were opened after 28.08.2018.

**Pradhan MantriJanDhanYojana has complete eight years of victorious achievements from 2014 to 2022**

Under this scheme, more than 46.25 crore people achieving the banking facility .Finance Minister Nirmala Sitharaman says that "Financial Inclusion is a major step towards inclusive growth which ensures overall economic development of marginalized sections of society". PMJDY is triumphant policy for people centred economic incentives .Most important point is that this schemes provides 67% Jan Dhan accounts in rural areas and 56% Jan Dhan accounts for women .The Direct Benefit Transfer was received by 5.4 crore PMJDY account beneficiaries.

**Achievements under PMJDY- Dated on 10th August 2022**

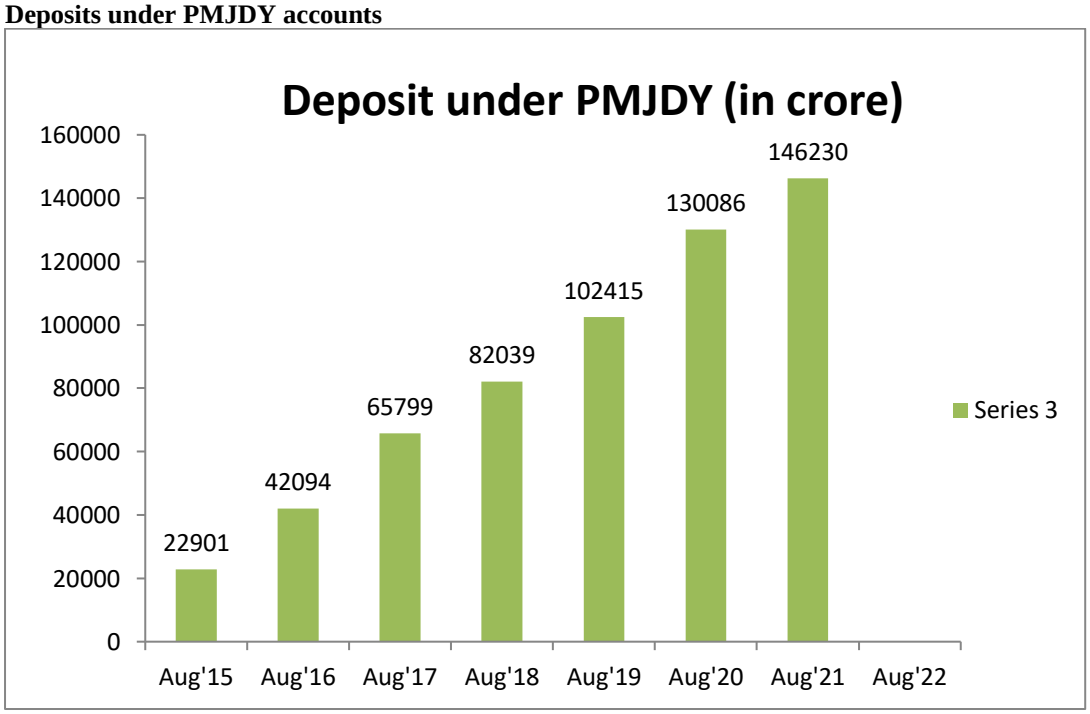
**PMJDY ACCOUNTS**




The number of PMJDY accounts are 46.25 crore on 10th August 2022.

The number of accounts are continuously increasing under this scheme .In 2015,the accounts counted as 17.9 crore but in 2022, it increased more than two times .The increased accounts implies that people can gain various advantages from this scheme therefore they wanted to open accounts under PMJDY.

**Deposits under PMJDY accounts**




Under PMJDY, total deposits are increased and on August 2022 it deposits balances are Rs 1,73,954 cr

**Benefits of PMJDY :**

- The most important benefits is opened one basic savings bank account for unbanked person.
- People can earn interest on the deposit in PMJDY accounts.
- This scheme provides Debit card (Rupay Card) to all account holders in urban and rural areas.
- There is no requirement of minimum balance for opening an account ie zero balance account.
- Accidental insurance covers Rs 1 lakh and enhanced to Rs 2 lakh to those accounts which are opened after 28.08.2018.
- Rs 10,000 available are also useful for Direct Benefit Transfer (DBT), Atal Pension Yojana (APY) and Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY).

**Financial Inclusion and Economic Growth :**

Financial inclusion is an essential part of economic growth .It provides financial services at a reasonable cost and also improves the standard of living of the people .Financial inclusion has become a prime concern for banking system to provide and ensure sustainable economic growth .The financial institutions such as Banks can help to channelize the funds from savers to borrower and provide facilities for sound financial system .A developed financial structure broadens access to funds and affords various benefits to the customers and regulators .Without inclusive growth ,the sustainable economic growth is impossible.

Government of India has approved various policies and initiatives such as Bharat Nirman Programme, Rural Employment Guarantee Scheme etc .Pradhan Mantri Jan Dhan Yojana is a national financial inclusion program by the Government of india ,provides Universal banking facilities .The core of this scheme are Banking the unbanked ,Funding the Unfunded and securing the unsecured .It expands banking facilities to those who were earlier deprived of banking services and also provided interest rates on bank deposits, micro credit facilities etc.

## PROGRESS REPORT

Pradhan Mantri Jan Dhan Yojana ( All figures in crore )

| Beneficiaries as on 02/11/2022 | | | | | | |
|---|---|---|---|---|---|---|
| Bank Name/ type | Number of beneficiaries at rural / semiurban centre bank branches | Number of beneficiaries at urban metro centre bank branches | No of rural urban female beneficiaries | Number of total beneficiaries | Deposits in accounts (in crore) | Number of Rupay Debit cards issued to beneficiaries |
| Public sector bank | 23.36 | 13.95 | 20.54 | 37.31 | 136663.5 | 27.78 |
| Regional rural bank | 7.52 | 1.19 | 5.02 | 8.72 | 34773.01 | \3.41 |
| Private sector banks | 0.70 | 0.61 | 0.72 | 1.31 | 5178.34 | 1.11 |
| Grand total | 31.58 | 15.75 | 26.28 | 47.33 | 176614.8 | 32.30 |

**Challenges in implementing PMJDY :**

Although PMJDY has various beneficial impacts on the economy but a set of difficulties may influence the feasibility and potentiality of this scheme.

- **The matter of multiple accounts**

This scheme is necessary for the unbanked people but it is not clearly identify who are poor .Since ,there is needed only a single identity proof for opening an account so it is also easier for people to open multiple accounts in the expectation of higher overdraft facility and insurance covering.

- **The connectivity issue**

In India, it is seen that around 68% of people live in rural areas .But in these areas, lack of digital connectivity prevails and it becomes a major challenging topic for rural people in India.

- **Infrastructure of banks in rural areas**

The connections related to banking system in rural areas are not sound as there is lack of internet facility.
Internet link with lower bandwidth
Frequently suffers from slow browsing, slow upload and video delays.
The infrastructural barriers like weak broadband hindrance for the rural people.

## FINDINGS

By analyzing the various perspective of financial inclusion ,PMJDY is a national mission to ensure financial services to the unbanked people in the

country .Various services are provided by PMJDY such as opening of no-frills accounts, relaxation on KYC norms and opening branches to the unbanked people .Account holders will able to gain zero balance account with the help of this scheme and accidental insurance is upto Rs 2 lakh .Accounts holders will get debit card which can be used for E-commerce transactions .The current beneficiaries for this scheme is 47.33 crore and Rs 176614.85 crore balance in their accounts, 6.55 lakh bank mitras provided banking services in the country .Financial inclusion is necessary for the economic growth of the country .Govt of India and Reserve Bank of India work for the purpose of financial inclusion by providing financial facilities to the poor section of the society .Financial inclusion in the rural areas is a win-win opportunities for the people who involved in the banking system.

## CONCLUSION

Financial inclusion through Pradhan Mantri Jan Dhan Joyana is the most remarkable initiative in order to eradicate poverty .If it is implemented properly, then not only reduce poverty but also it will end to corruption .There are six pillars of PMJDY providing bank accounts ,credit guarantee fund ,bank accounts with overdraft facility ,insurance and accidental coverage to poor ,pension for unorganized sector and financial literacy .The aim of PMJDY is to deliver financial services to the poorest of the poor person of the society .The eligibility criteria for Jan Dhan Yojana account holders are people must have Indian nationality for this purpose .Applicants must be at least 10 years of age .An individual who has a savings account can link its account to PMJDY accounts.

Financial inclusion alleviates the exploitation of disadvantaged section by the exorbitant many lenders by making easy access to credit .The success of the PMJDY depends on the constructive regulators system and the active role of the stakeholders .Raising awareness and transmitting financial literacy also essential step towards healthy financial system.

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Research Paper

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# A STUDY ON IMPACT OF COVID-19 PANDEMIC ON UNEMPLOYMENT IN INDIA

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**ABSTRACT** **DOI No: 10.36713/epra11778** **Article DOI: Article DOI: https://doi.org/10.36713/epra11778**

***Unemployment is a serious problem which is being experienced by most of the countries throughout the globe. Unemployment is like a giraffe which is easier to make out than to describe. The crisis of unemployment has been in existence for a long time. Nevertheless, in the developed nations it was experienced in its severe form at the time of the great depression (1930's) while in the developing nations it was after the Second World War (1945). The past few years, there has been a slowdown in the growth of employment in India despite the boost in the economic sector. At the same time due to this COVID-19 pandemic lockdown, there had been a devastating effect on the unemployment rate in India as most of the private companies have fired their employees. The main sufferers of this lockdown are the informal sector employees as the majority of them started losing jobs since construction works were closed. With no capital, thousands of people deserted cities, marching to their homelands for several hundreds of miles away in the absence of government transportation, which showed their intensity of anguish. This paper aims to delineate the impact of COVID-19 on unemployment in our study area. For analyzing this research we mostly relied on secondary data collected through books, journals, newspapers, authentic internet sources, etc The outcome of this research will be helpful for academicians, researchers, and policymakers in related studies.***

**KEYWORDS:** ***Unemployment, COVID-19, lockdown, employees, informal sector***

## INTRODUCTION

RNA viruses with an envelope that measures between 60 nm and with a diameter of 140 nm and the crown-like shape seen in mammals, particularly in humans and birds, it's known that they carry coronaviruses.

respiratory, intestinal, hepatic, and other disease-causing mutations and recombination including neurological conditions. The first COVID-19 epidemic happened in Wuhan, in the province of Hubei.

where multiple people with viral pneumonia were discovered at the beginning of December 2019 at the seafood market in Huanan, according to epidemiological evidence in Wuhan. In this market, wild animals are famously sold, along with others. Prior to that, non-aquatic animals like birds and rabbits were also for sale before infection. Organization for World Health on January 30, 2020 (WHO) designated a public health emergency of international scope and an outbreak

Concern (PHEIC), and the WHO formally identified this outbreak in February 2020. a condition caused by a coronavirus, such as COVID-19, where CO stands for corona, VI for the virus, D for disease, and 2019 represents the year. occurred the primary causative agent of COVID-19 is the severe acute respiratory syndrome coronavirus 2 (SARS-CoV 2). SARS-CoV-2 possesses 79.6%

Severe acute respiratory syndrome (SARS)-like coronavirus (SARS-CoV) and the sequence is

96% identical. Due to its outbreak, the global economy collapses and causes a significant amount of unemployment as a result of mass layoffs. The majority of nations on the globe struggle with a genuine problem called unemployment.

globe. The concept of unemployment is not new. However, industrialized nations experienced this and developing nations during the Great Depression (the 1930s), when it was particularly severe

After World War II (1945). The pace of growth has decreased recently.

## METHODOLOGY

The research is a literature-based study investigating the current issue. Parallelly we also relied on secondary data from various books, journals, and authentic websites. For analyzing our data we used Microsoft Excel 2010 and Statistical Package for the Social Sciences (SPSS).

## DISCUSSION

The most serious problem the country is facing today is the problem of unemployment, as the planners have been much concerned about this and in each plan the emphasis has been put forward to remove unemployment by increasing the growth rate. Most of the planners argue that a higher growth rate can clear the backlog of unemployment and provide employment to the people, but unfortunately till now this argument had not proved so far (Dobriyal, K. 1970, January 01). Although India is ranked among, the first eight industrially advanced countries of the world, it remains by and large, underdeveloped (Giri, V. (1973, January 01).

Table 1. Unemployment rate of India July, 2019- June 2020 Month Jul-20 Jun-20 May-20 Apr-20 Mar-20 Feb-20 Jan-20 Dec-19 Nov-19 Oct-19 Sep-19 Aug-19

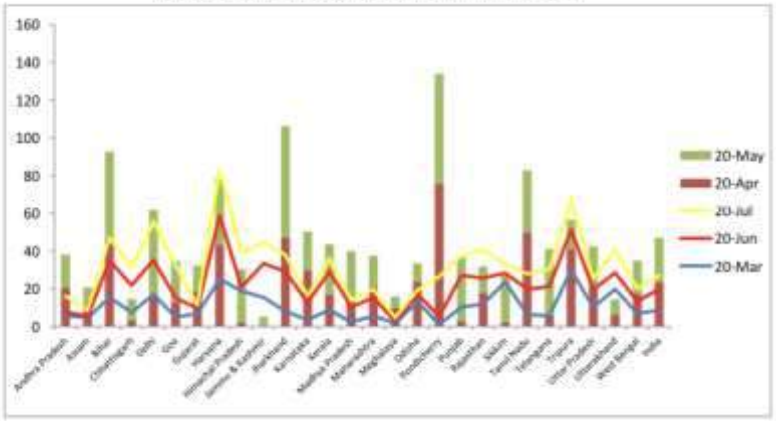
Unemployment Rate % India

**2. Unemployment Rate - 30 day moving average**

| Date | India | Urban | Rural |
|---|---|---|---|
| 9-Aug-20 | 7.86 | 9.72 | 6.99 |
| 8-Aug-20 | 7.65 | 9.67 | 6.72 |
| 7-Aug-20 | 7.64 | 9.74 | 6.67 |
| 6-Aug-20 | 7.67 | 9.69 | 6.73 |
| 5-Aug-20 | 7.63 | 9.64 | 6.71 |
| 4-Aug-20 | 7.73 | 9.74 | 6.82 |
| 3-Aug-20 | 7.75 | 9.7 | 6.86 |
| 2-Aug-20 | 7.72 | 9.74 | 6.8 |
| 1-Aug-20 | 7.64 | 9.7 | 6.71 |
| 31-Jul-20 | 7.59 | 9.76 | 6.6 |
| 30-Jul-20 | 7.54 | 9.7 | 6.55 |
| 29-Jul-20 | 7.57 | 9.79 | 6.56 |
| 28-Jul-20 | 7.69 | 9.85 | 6.72 |
| 27-Jul-20 | 7.78 | 10 | 6.77 |
| 26-Jul-20 | 7.97 | 10.39 | 6.87 |
| 25-Jul-20 | 8.02 | 10.38 | 6.96 |
| 24-Jul-20 | 7.79 | 10.4 | 6.6 |
| 23-Jul-20 | 7.88 | 10.47 | 6.7 |
| 22-Jul-20 | 7.84 | 10.53 | 6.62 |
| 21-Jul-20 | 7.9 | 10.62 | 6.66 |
| 20-Jul-20 | 7.94 | 10.69 | 6.68 |
| 19-Jul-20 | 7.95 | 10.81 | 6.64 |
| 18-Jul-20 | 8.09 | 10.79 | 6.83 |
| 17-Jul-20 | 8.29 | 10.76 | 7.14 |

*Source: Centre for Monitoring Indian Economy Pvt. Ltd.*

**Figure 3. Unemployment Rate of Indian states & UT**




India's unemployment rate rose to 23.5 per cent in the month of April amid coronavirus lockdown (table 3). The rate of unemployment in urban India stands higher at 24.95 per cent as against rural 22.89 per cent (Table 1). During the last week of April and in the first two weeks of May, the unemployment rate hovered around 23.48 -23.52 per cent (table 1).

The fluctuations were small and jointly indicated that the unemployment rate has actually increased to about 24 per cent since the lockdown (table 3).

The rate of unemployment in urban India is also shocking. The unemployment rate in urban India increased to 30 and 31 percent, respectively, in the first and second weeks of the lockout. "However, over the next two weeks, it dropped quite dramatically to 23 and 25 per cent. It is a quite drastic decline in the unemployment rate in urban India, while it is still rather high (table 1, 2, 3). Meanwhile, the unemployment rate was 8.74% in March, the highest since the demonetization occurred in August 2016, according to a recent survey by CMIE. The unemployment rate was 9.59% in August 2016 (Bussinesstoday.2020, April 03).

This degree of unemployment, at a period when the Indian economy was rising at a decent rate, indicates that there was something intrinsically wrong with the policies as well as the whole structure. That went incorrect was this: inequalities grew because fast inflation implied just that the wealthy got richer and the poor get poorer.

## PROBLEM STATEMENT

Most nations around the world are currently dealing with the major issue of unemployment. Similar to a giraffe, unemployment is more difficult to convey than to see. For a very long period, there has been a severe unemployment crisis. However, it was experienced in wealthy countries in its most severe form during the Great Depression (1930s), whereas it occurred in underdeveloped countries following the Second World War (1945). Despite the expansion of the economy, there has been a slowdown in employment growth in India over the previous few years. The COVID-19 pandemic lockdown has also had a severe impact on India's unemployment rate, as the majority of private enterprises have laid off workers. Since the majority of them began losing jobs once construction activity was halted, the informal sectors of employees are the ones that suffer the most from this lockout. Without a capital, tens of thousands of people fled cities, marching hundreds of miles to their homes in order to escape the intense suffering they were experiencing. The purpose of this essay is to outline how COVID-19 has affected unemployment in the area under consideration. We mostly used secondary material from books, journals, newspapers, reputable websites, and other sources to analyze our research. Academics, researchers, and politicians working on relevant subjects will find the findings of this study useful.

## OBJECTIVE

In this essay, the impacts of COVID-19, a global pandemic that began in China in December 2019, will be studied. The new coronavirus pandemic is seen as a natural disaster that has a profound impact on people's psychological well-being. Therefore, it may be said that the pandemic is significantly affecting unemployment. Therefore, the study aims to shed light on how the COVID-19 epidemic has affected unemployment. Additionally, this study will serve as a foundation for future research.

## RESULTS AND DISCUSSION

Despite the economic sector's recovery, there is a decline in employment in India. Additionally, because of COVID-19.

The pandemic lockdown has significantly lowered jobless rates in India, like most other countries. Employees were laid off by private companies. The informal sector is the primary victim of this lock-in.

employees, like the majority of them, began to lose their jobs when construction projects were completed. With no hundreds of people fled the

capital, trekking many hundred miles to their home country

They could not get anywhere without using government transportation, which showed how anxious they were. In India, unemployment is the most critical socioeconomic component, which cannot be a strain on the unemployed and could only be minimally reduced unless it is quickly eliminated. by proper planning In India, especially among the educated unemployed, unemployment is seen as a scourge on economic growth. In India, each worker puts in roughly 8 hours each day over 273 days every year.

according to a conventional person-year basis, is regarded as employed. A person who is not employed during this time is referred to as an unemployed person. The number of work prospects in a country mostly depends on its educational level of progress, i.e., when a nation advances and its output increases, The number of available jobs will rise. 22 and 2022–2023 will be considerably less than 2019–2020. There will be severe economic misery in the future, therefore politics and policymaking must collaborate to overcome it.

According to a research by the International Labor Organization (ILO), over 2.5 million jobs have been lost since 2000.

The novel coronavirus has expanded globally, posing a hazard to humans. It was observed that approximately 81% of the world's 3,3 billion individuals, or four out of five, were male.

affected by the partial or total closure of their places of employment. The United Kingdom,The United States, Canada, and numerous European and Asian nations suffered catastrophic losses.

Their lack of jobs deepens their unemployment. The problem of unemployment is the most severe issue facing the country today. Economic planners were highly concerned about it, and it was emphasized in every plan to eradicate unemployment by raising the pace of growth. The majority of planners assert that a faster growth rate may eliminate accumulated unemployment and give work opportunities, although this thesis has not yet been demonstrated.

Although India is one of the world's top eight industrialized nations, it remains undeveloped overall.

## SUGGESTIONS

It has been determined that the small-scale industry, which comprises the cottage and village sectors, is the most effective way to address the rising unemployment issue. The best way to end unemployment is through self-employment, so higher education institutions should accept it as they would other forms of employment. There should be a radical overhaul of the educational model. Higher education should be made available to students who have expressed an interest in it in colleges and universities. The importance of vocational education must be emphasized. Engineers who are qualified should launch their own small businesses (Mehta, P. (n.d.). The vast majority of individuals in India work for themselves. They work in small-scale manufacturing, agriculture, cottage industries, and trade. Such folks need to be helped financially and with raw resources. county's employment policies' main objective The county's employment policy should priorities increasing laborproductivity and job opportunities. Government should adopt a strategy that produces work for everyone. To increase employment, the agricultural and manufacturing sectors must produce more. As a result, it encourages the development of cottage and small industries. Five-year plans ought to place more emphasis on education. People would have better work thanks to initiatives like irrigation, roads, flood control, power, agriculture, and rural electrification. Decentralizing industrial output is crucial for lowering unemployment. There will be fewer job prospects in underdeveloped areas if industrial operations are concentrated in one location. Therefore, the government should adopt measures that promote the decentralization of economic activity. Population growth needs to be examined to find a solution to the unemployment issue. Family planning laws should be applied consistently and effectively.

## CONCLUSION

India is a developing country, moving on the path of Progression. It is necessary, in this process that available resources should be used to the full extent possible. Unemployment is a grave problem for any economy. This has adverse consequences for the unemployed because they become unemployed and suffer from poor prospects for seeking new employment and those who are working feel less confident in future to keep their employment. Covid-19 pandemic has affected many people's lives and livelihoods in our country, and around the world. While all

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# EFFECTIVENESS OF HUMAN RESOURCE MANAGEMENT TOWARDS EMPLOYEES' PERFORMANCE IN PRIVATE BANKS OF BANGLADESH

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**ABSTRACT** **DOI No: 10.36713/epra11677** **Article DOI: Article DOI: https://doi.org/10.36713/epra11677**

***HRM is a management function involving procurement of suitable human resources train & develops their competencies. The study of human resource management practices has been an important and critical area in management and organizational performance from last several years especially in the banking industry. The study highlights the fact that private banks i.e Dutch Bangla Bank Ltd., United Commercial Bank Ltd., Dhaka Bank Ltd., & One Bank Limited leading private commercial banks of Bogura & Sirajganj District in Bangladesh is better can be the facilities and benefits provided to the employees. The study helps to the policy maker's researches and bankers etc. Further it would be also using theformulation of bank policies related to the HRM practices in a banking sector. Therefore, the present study focus on HRM practices and Employees performance in Private sector banks in in Bangladesh. This study concluded that HRpractices and policies pave the way for improving and raising employee productivity in bank sector and leading to the achievement of organizationalobjectives, employee satisfaction and long termsustainability in Private Banks of Bangladesh.***

## INTRODUCTION

Human resource management is a management function involving procurement of suitable human resources train and develops their competencies. Motivate them. Reward them effectively and create in them an urge to be part of the management team whose aim should be render, dedicated committed services for the success and growth of the organization. The study of human resource management practices has been an important and critical area in management and organizational performance from last several years especially in the banking industry. HRM practices refer to organizational activities directed at managing the pool of human resource and ensuring that theresources are employed towards the fulfillment of organizational goals. Human Resource Management is all about practices, policies and different structures firms adopt to take care of the most important resource of the organization i.e. employees or human resource. HRM is about planned HR deployments and activities intended to achieve its goals as per Wright and McMahan. More concisely, HRM is about how a firm uses the complete package of practices and policies in order to achieve effectiveness and better organizational performance. The present study is an insight into details of HRM practices and Performance linkages, as mentioned in Figure 1.1 which encircles the strategic linkage between HR practices and firm performance. Figure 1.1 shows

the linkage between HRM Practices and Firm Performance as developed by Guest et al

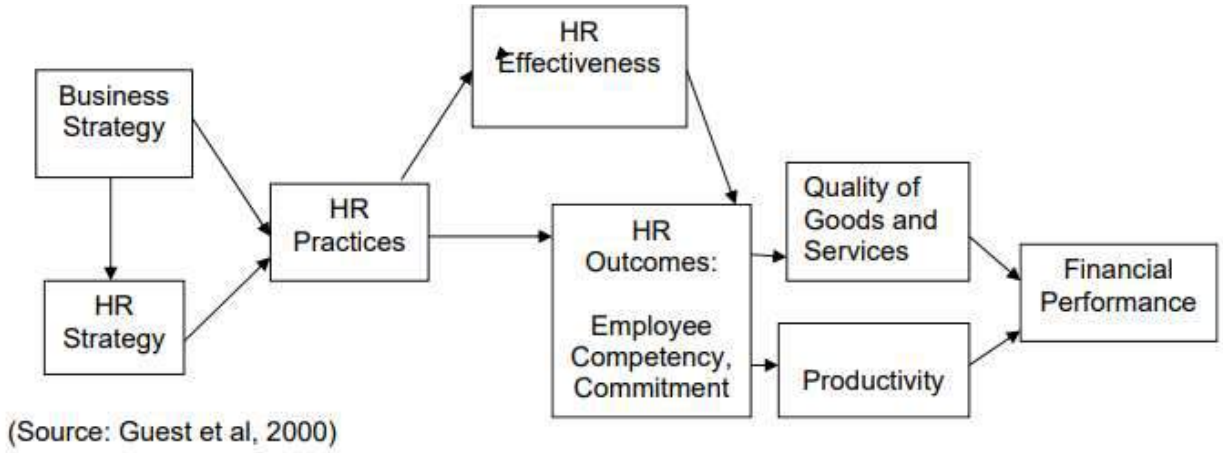


**Figure 1.1 Model of Linkages between HRM Practices and Performance**

Few models in the past have also been studied and developed as Harward Model developed by Beer et al (1984), Michigan Model developed by Fombrun, Tichy, and Devanna and Warwick developed by John Bratton and Jeffrey Gold (2008) . The present study is all about impact or linkages between HRM practices and Employee Performance as well as Organizational Productivity, here is very famous and widely studied model of the same.

HR practices are based on the business needs of the firm within the context of culture, structure, technology and processes Armstrong. Decent HRM practices are a mixture of Human Resource Planning, Recruitment and Selection, Training and Development. Compensation and Benefits, Performance Management, Career Planning and Development Coaching and Mentoring etc. Talking about small size firms, the major decisions regarding Human Resources are directly taken by the owners and managers as compared to a formal department of big organizations Koch de Kok. As reasoned by HR professionals there can't be any "best fit" combination of HR practices. What happens is good HR practices are taken from benchmarked companies and "best practice" HRM practices are framed.

## REVIEW OF LITERATURE

Tseng & Lee (2009) in their research applied HRM practices to examine organizational performance of multiple industries using Analytical Hierarchical Process/Data Envelopment Analysis (AHP/DEA) modeled on data collected from 129 companies in the Taiwanese electronic industry, and found a positive effect of five Human Resource Management practices on performance.

Extension of the same work done by Becker and Huselid, for exploring the synthesis and managerial implication for high performance work systems and firm performance, with the aim that strategic role of human resource management (HRM), and its influence on a firm's HRM system and its financial performance, is actually limited to changing market demands and organizational structures, and thus the strategic importance of a skilled and motivated workforce as firms move away from centralized command and control management structures, HPWS should be able to provide a significant, source of value creation within this context, a firm's workforce, and its systems for managing people, are seen as an investment rather than a cost to be minimized. By including different branches of the banking sector as cases Sue Hutchinson et al studied whether HR Practices and Business Performance makes a difference and does it influence business performance. The focus of the study was to explore the importance of discretionary behavior by employees and managers and the effect of variations in this behavior on business performance. At the end, they concluded that for sure there is clearly a strong association between employee attitudes on a wide variety of job design and HR practices, employee views on the quality of HR management applied to them, especially in the opportunity to participate, and branch performance.

It is theoretically similar to the job characteristics approach to job design proposed by Hackman and Oldham. The difference in the two approaches is the level at which the concepts of diversity, individuality, significance, sovereignty, and feedback are applied. The most frequently studied type of outcome variable in a link to teamwork was some form of performance measure like individual/team performance, quality or

productivity etc, various other outcome variables also includes such as motivation, job satisfaction, organizational commitment, employee turnover, absenteeism, etc. Out of these, Job satisfaction is the most studied employee-centric outcome, and Job turnover is the next most commonly studied outcome in link with teamwork Wall TD, Armstrong support for the improved team and individual performance under self-directed or semi-autonomous teamwork. One another study failed to find any such significant relationship. Both quality and labor productivity were also found to have improved as a result of introducing high-performance work teams, characterized by decision-making authority, mandated team membership, and an expanded, information-rich, problem-solving domain Pearson, Banker. There was very strong support for the positive impact of work teams on job satisfaction, according to.Wall TD, Cordery more studies investigated the impact of work teams on job turnover and the results were equivocal, with three studies finding support for the positive impact of team working on job turnover, Wall TD, Pearson, Kirchmeyer whereas two other studies found team working to have a negative impact on employee turnover Wall TD, Cordery, Kirchmeyer found that a healthier work group fit had an optimistic impact on organizational promise and led to reduced turnover, whereas variation in terms of age, education, and lifestyle led to poor addition with the work group, which, in turn, led to poor organizational commitment and high job turnover. A parallel finding was reported for the link between organizational commitment and work teams; with employees viewing high commitment if they worked in teams with similar demographics Kirchmeyer. Mixed results were found for the relationship between team working and absenteeism. One study found work teams to exert a positive impact on absenteeism Pearson but the study by Cordery et al found a negative impact of teamwork on absenteeism.

Ramakrishna and Srinivasa Rao, (2017) made an attempt to compare the human resource management (HRM) practices of public and private sector banks in Telangana state. In this study, employees from the leading public sector bank - State bank of India and ICICI Bank from the private sector were included as sample respondents. A sample of 360 employees working in these banks at different levels was contacted for the purpose of soliciting the opinions onthe subject. The convenience and judgement samplingmethod was adopted for select sample respondents. Itwas found that the HRM practices in the Indian banking industry had evolved over a period of time and the HRM practices of Indian private sector bankswere better than the Indian public sector banks. Ramakrishna and Srinivasa Rao, (2017) made an attempt to review the existing literature on the HRM practices of various Indian banks. Earlier researchstudies at the national level and various state-level research studies had been examined to understand the HRM practices of the Indian banking industry. It can be concluded from this research that the HRM practices followed in the private banking sector were marginally superior to the HRM practices adopted by the public sector banks. The growth in the Indian banking sectors with new players entering the market and the challenges faced during consolidation of public sector banks soon were likely to pose newchallenges for HRM practices in the Indian banking industry.

Shaheeb Abdul Azeez, (2017) aimed in the study to identify the relationship between HRM practices and employee retention based on the literature review. The objectives of this research were to find out the various research works that had been done in the area of HRM practices and employee retention, to highlight the various factors which affected retention initiatives in an organisation and to explore the relation between HRM practices with job satisfaction leading to employee retention. Although this research tried to explore the area of HRM practices and employeeretention by the various researchers, still much scope remaining for more exploration in the field of HRM practices and employee retention. Factor analysis was used for analyse the collected data. It was found fromthe research that the direct relationship between HRM practices and job satisfaction leading employee retention. Thus, the job satisfaction and turnover negatively correlated to one another. Also, the model clearly defined the HRM factors existed in the organisation will not only help to attract newemployees but will lead to retain the existing employees in the organisation.

## UNIVERSE FOR THE STUDY

The study of the universe consists of all employees working in private banks in Bangladesh. It includes Dutch Bangla Bank Ltd., United Commercial Bank Ltd., Dhaka Bank Ltd., & One Bank Limited leading private commercial banks of Bogura & Sirajganj District. The banks were scrutinized and selected for the study on the basis of financial data availability and existence of branches. The postal addresses of the registered offices of these companies were also obtained.

## IMPORTANCE OF THE STUDY

Numerable studies have been done in the past regarding investment in HR practices and Organizational Performance, but still, there is a dearth of studies which directly or indirectly develops or establishes the linkages between or impact of HR

practices and Employee Performance in private banks in Bangladesh. The present study is done in the same continuation but for private sector banking Industry of Bangaladesh to know which major practices prevail in the banking sector, which is widely practiced and which are followed less or given less priority. There may be many parameters for which investment in HR practices are measured by various performance outcomes. The present study covers outcomes like HR or Employee Outcomes, employess performance which also include Growth as well as Financial Outcomes. The study highlights the fact that private banks i.e Dutch Bangla Bank Ltd., United Commercial Bank Ltd., Dhaka Bank Ltd., & One Bank Limited leading private commercial banks of Bogura & Sirajganj District in Bangladesh is better can be the facilities and benefits provided to the employees. The study helps to the policy maker's researches and bankers etc. Further it would be also use theformulation of bank policies related to the HRM practices in a banking sector. Therefore the present study focus on HRM practices and Employees performance in Private sector banks in in Bangladesh.

## OBJECTIVES OF THE STUDY

- To know major HR Practices Prevailing in Selected private banks in Bangladesh
- To Study Employee performance of selected private banks in Bangladesh
- To find out the significance difference between HR practice and demographic variables of employees in private banks in Bangladesh.
- To study the relation and/or impact of or linkage between HR practices and Employee performance of selected private banks in Bangladesh.

## METHODOLOGY

The study made use of both secondary data and primary data. Secondary data were collected from books, journals, magazine, article, annual reports of banks Database like websites of Bangladesh banks and internet. It included information on the private banks, HRM practices % employee's performance of Dutch Bangla Bank Ltd., United Commercial Bank Ltd., Dhaka Bank Ltd., & One Bank Limited leading private commercial banks of Bogura & Sirajganj District. The study is as its objective, the effectiveness of HR on the employee's performance of private banks in Bangladesh. It was a micro level study and required primary data to be collected from a selected four private banks employees. A descriptive research was carried out by applying a survey method. The nature of this study demands survey method, keeping in sight the basis of the study, simple random sampling was used to achieve representativeness in the selection of respondents. The questionnaire was distributed through the HR team managers, while ensuring confidentiality of the responses collected. Sample size was 186 private banks employees of Bangladesh. For data analysis and testing of Hypothesis, the collected data has been analysis with help of SPSS package.

## DATA ANALYSIS

H0: HR practices are having a negative impact on employee performance.

H1: There is a positive relationship between HR practices and employee performance.

**Table No.1: correlation between HR practices and employee performance**

| **Correlations** | | | |
|---|---|---|---|
| | | **HR Practices** | **Performance** |
| HR practices | Pearson Correlation | 1 | .724** |
| | Sig. (2-tailed) | | .000 |
| | N | 186 | 186 |
| Performance | Pearson Correlation | .724** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 186 | 186 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | |

Table No. 1 exhibit the correlation between HR practices and employee performance in private banks in Bangladesh. As per the correlation Table, the value of Pearson's co efficient of correlation is .724. It shows that there is a high positive correlation exists between HR practices and employee performance. The Sig. (2-tailed) value is .000. As the Sig. (2- tailed) value is less than the alpha value (.05), we can reject the null hypothesis. It means that there is a significant positive correlation between HR practices and employee performance in private banks in Bangladesh.

Null hypothesis: There is no significance difference between demographic variables and opinion about HR practice.

**Chi – square Test**

**Table No.2: demographic variables and opinion about HR practice**

| Opinion about HR practice | N | Chi-value | P-value | Significant value |
|---|---|---|---|---|
| Gender wise opinion about HR practice | 186 | 433.248 | .000 | 0.05 |
| Age wise opinion about HR practice | 186 | 308.801 | .000 | 0.05 |
| Education wise opinion about HR practice | 186 | 272.702 | .000 | 0.05 |
| Income wise opinion about HR practice | 186 | 146.175 | .000 | 0.05 |
| Marital status wise opinion about HR practices | 186 | 301.221 | .000 | 0.05 |
| Experience wise perception towards performance appraisal practices | 186 | 143.639 | .001 | 0.05 |

Table No.2 shows the chi square test of demographic variables and opinion about HR practice. The demographic variables used for the test are gender, age, marital status, education, income andexperience. The chi square analysis of the gender and opinion about HR practice shows that the p (0.000) value is less than the alpha value (P<0.05). The value of Pearson Chi-Square is 433.248. As the p value is less than the alpha value, the null hypothesis is accepted. It indicates that there is no significance difference between gender variables and opinion about HR practice. The chi square analysis of the age and opinion about HR practice shows that the p (0.000) value is less thanthe alpha value (P<0.05). The value of Pearson Chi- Square is 308.801. As the p value is less than the alpha value, the null hypothesis is accepted. It indicates that there is no significance difference between age and opinion about HR practice. The chi square analysis of the education and opinion about HR practice shows that the p (0.000) value is less than the alpha value (P<0.05). The value of Pearson Chi-Square is 272.702. As the p value is less than the alpha value, the null hypothesis is accepted. It indicates that there is no significance difference between education and opinion about HR practice. The chi square analysis of the income and opinion about HR practice shows that the p (0.000) value is less than the alpha value (P<0.05). The value of Pearson Chi-Square is 146.175. As the p value is less than the alpha value, the null hypothesis is accepted. It indicates that there is no significance difference between income and opinion about HR practice. The chi square analysis of the marital status and opinion about HR practice shows that the p (0.000) value is less than the alpha value (P<0.05). The value of Pearson Chi-Square is 143.639. As the p value is less than the alpha value, the null hypothesis is accepted. It indicates that there is no significance difference between marital status and opinion about HR practice. The chi square analysis of the experience and opinion about HR practice shows that the p (0.000) value isless than the alpha value (P<0.05). The value ofPearson Chi-Square is 301.221. As the p value is lessthan the alpha value, the null hypothesis is accepted. Itindicates that there is no significance differencebetween experience and opinion about HR practice.

H0: There is no association between HR practices andits factors

**Table No.3: correlation analysis of the HR practices and its factors**

| variables | Pearson Correlation | Sig. (2-tailed) |
|---|---|---|
| Recruitment and selection | .727** | .000 |
| Compensation practice | .809** | .000 |
| Training practice | .860** | .000 |
| Performance Appraisal | .881** | .000 |
| Promotion | .841** | .000 |
| Career development | .802** | .000 |

Table No. 3 presents the correlation analysis of the HR practices and its factors. The factors of HR practices are Recruitment and Selection, Compensation, Training practice, Performance Appraisal, Promotion and Career development. The table clears that all the factors are positively correlated with HR practices. Here the p value is less than the alpha value, hence thenull hypothesis is rejected. It shows that there is a significant positive association between HR practices and its factors.

## MAJOR FINDINGS

The major findings of the study are

- Correlation analysis shows that there is a significant positive correlation between HR practices and employee performance in Private sector Banks of Bangladesh.
- There is no significance difference between demographic variables and opinion about HR practice.
- There is a significant positive association between HR practices and its factors.
- Multiple regression analysis shows that there is significant relationship between the employee performance and HR practice.

## SUGGESTIONS

The management of respective banks may able to raise the level of commitment in banks by increasing satisfaction with the specified HR practices. Suitable working environment should be designed in banks through HR practices and policies. The organizations should provide adequate facilities employees to do their works such as appropriate equipment, work breaks and work sharing.

It is outlined from the results that assistant manager felt the maximum level of HR practices for safety, health and wellness. HR practices are essential to empower the employees or divisions for handling different issues in banks. The divisions should be incorporated with well- organized human resource information systems and modern information technology facilities. All banks should allocate sufficient budget and sends competent employees to international conferences and seminars to prepare them for thecompetitive knowledge at global level market.

## CONCLUSION

The study mainly focused on the Effectiveness of Human Resource Management towards Employees Performance in Private Banks of Bangladesh Effectiveness of Human Resource Management towards Employees Performance in Private Banks of Bangladesh. The achievement of banks fundamentally relies upon the intellectual development of the banks workers. Alongside intellectual development of the knowledge worker, technical infrastructures of the bank must be guaranteed to enhance the effectivenessof the employee and the bank. The public sector banksneed to take inception to change in their HR policies and practices, in order to compete with private and foreign banks in current circumstances of Bangladesh. Bank should spread out their HR practices in all branches and develop strong HR polices. Decision making power and responsibility ought to be legitimately circulated to all HR managers in Private Banks of Bangladesh. Bank should give some essential power and role to HR executives to approve the HR departments. This will help to recruit and maintain skilled, knowledgeable and well performed workforce to meet current and future organizational as well as individual needs. Henceforth, the private sector banksin India have to utilize many opportunities to meet certain challenges under the changed circumstances. Employee performance is an important factor that contributes to develop the productivity through good behavior and traits of the employees of a functional team in an organization. Also, employee performanceis the most important factor in an organization successso, there is an essential to adopt effective humanresource policies that aim to improve employee productivity with job satisfaction creates the culture ofhigh performance in any organization based on humanresource practices. Thus, this study concluded that HRpractices and policies pave the way for improving and raising employee productivity in bank sector and leading to the achievement of organizationalobjectives, employee satisfaction and long term sustainability in Private Banks of Bangladesh.

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# ISSUES OF COORDINATION OF STATISTICAL DATA IN CORRUPTION AND PREVENTION

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**ABSTRACT** **DOI No: 10.36713/epra11843 Article DOI: Article DOI: https://doi.org/10.36713/epra11843**

***This article presents theoretical and practical views on corruption and its negative consequences, the conditions for recognition as corruption by organizations fighting corruption in the world, forms of fighting against it, statistics for 2017-2021 indicators and the main directions of their use in the fight against corruption and its prevention in the future are indicated. Information on corruption in Uzbekistan is analyzed using statistical methods, opinions on current problems are expressed, and scientific recommendations on their solution are given.***

**KEYWORDS:** ***corruption, crime related to corruption, statistics, statistical methods, statistical analysis, bribery, fraud, extortion, shadow economy, corruption perception index.***

## INTRODUCTION

Countries of the world face corruption as an obstacle to the implementation of the state's macroeconomic policy, which reduces economic growth, leads to the inability to obtain reliable information about the real state of the economy, decreases the flow of investment, and increases the possibility of extortion of state resources. It is considered as a negative situation that leads to serious increase in the expenses of entrepreneurs and causes economic and social problems. Corruption is one of the global problems that must be solved on a global scale.

Measures to combat corruption are being developed on a very large scale in our country. We can find many examples in our lives that corruption is the main problem of society and the state. In this regard, unless all strata of the population, the best specialists are involved in the fight against corruption by our President, and all members of our society are vaccinated with the "honesty vaccine", so to speak, we will not be able to achieve the high goals we have set for ourselves. . We need to move from dealing with the consequences of corruption to its early prevention We can quote his comments about [1] .

They also emphasized that digital technologies not only increase the quality of products and services, reduce excess costs, but are also an effective tool in eliminating the worst evil - corruption.

Therefore, "corruption is the illegal use of one's position or official position for personal interests or the interests of other persons for the purpose of obtaining material or immaterial benefits , as well as illegal presentation of such benefits" [2] .

Corruption perception is an indicator that provides a ranking of countries and regions according to the overall level of corruption [3].

Disputes with large companies from the second half of the last century to the present day (Volkswagen, Daimler, Siemens (Germany) Odenbrecht, Petrobras (Brazil), Samsung Group, Hyundai Motor Co. (Republic of Korea), BAE Systems (Great Britain) , Baker Hughes Inc., Panalpina World Transport (USA), etc.) fighting

corruption in the private sector required a radical reform of the systems.

Different definitions of corruption have been given by international organizations. In the normative and legal documents adopted by the UN, "... the performance of certain actions or inaction by an official in exchange for any form of reward, in the interests of the person giving the reward, in violation of the provisions of the job instructions, within the scope of his official authority " is defined as [4].

In the 1990 interregional seminar of the UN General Assembly devoted to the problems of corruption in Havana, it was stated that "corruption is the abuse of office by officials for the sake of personal or group interests, as well as the abuse of official duties by public servants [5].

Another definition given by international organizations states that "corruption is bribery of officials of the state or private system in order to violate their duties within the framework of their official authority" [7].

In our opinion, corruption is a set of criminal actions by an individual or a group of individuals for the purpose of a certain benefit, doing actions prohibited by law or failing to do actions that are required to be done, thereby causing a negative impact on others.

Analyzing all the above definitions of corruption, it can be shown that it has the following common characteristics:

- corruption is primarily a social phenomenon without a single legal definition; it ultimately leads to the weakening of the entire developing civil society and the state, in which corrupt practices become the daily norm of public life;
- there is a certain range of subjects of corruption offenses (these are, first of all, employees, persons authorized to perform state functions, as well as persons authorized to perform management functions in the private sector);
- of these subjects from their service position, the legal status and reputation of the position they hold (not from the reputation of the position as a citizen), the interests of the service (that is, service in the public service and private sector organizations), and law and ethics their use contrary to the established rules;
- the activity of these subjects for personal enrichment, and the interests of other individuals or corporate interests.

## ANALYSIS OF LITERATURE ON THE SUBJECT

The term "hidden economy" officially appeared in the early 70s of the last century. It is considered as an activity that covers the concealment of income and the social methods of their realization. In local scientific literature, the use of this term began to be used in issues related to the analysis of the "secret" growth of economic activity after the entry into force of the Criminal Code of the USSR in 1961 [8] .

In the work of Fedor Razzakov, it was noted that "corruption was undoubtedly the main reason for the collapse of empires such as Rome in ancient times and the USSR in the recent past." [9].

In the article of VV Lutsev, "Corruption, especially in the conditions of market economy, free trade and democracy, does not consist of simple bribery. Lobbying, favoritism, protectionism, contributions to political goals, traditions of political figures and state officials becoming honorary presidents of corporations and private firms, financing of commercial organizations from the state budget, transfer of state property to joint-stock companies, use of connections of criminal organizations, etc. are disguised forms of corruption" [10].

There have been various methodological approaches to understanding the phenomenon of corruption. Several of its social, political, criminological, and legal aspects have been considered. In particular, Plato and Aristotle political category of corruption [11]; N. Machiavelli is an indicator of the general disease of the state; J. Montesquieu assessed that a good political order or system becomes invalid because it is a dysfunctional process.

In our opinion, the phenomenon of corruption is an expression of the moral decline of humanity, "it is not the voluntary exchange of services according to the rules of the market, but illegal payment for their provision." [12]. So corruption is wrong is a social, illegal service.

The term "corruption" comes from the Latin word "corruptio n ", which means "to spoil" and "to buy with a bribe". These two words define the essence of corruption.

According to KS Belsky, "this aspect, from a scientific point of view, makes it possible to use the stock of word meanings, with the help of which specific concepts can be defined more clearly (using the ambiguity inherent in the language). The moral violation of officials in the state administration apparatus means not only the illegal enrichment of the official, but also other negative phenomena from the point of view of ethics and law: familiarity (protectionism), family favoritism, nepotism, etc. Among the above-mentioned phenomena, the most observed is the phenomenon of familiarity - seed breeding" [13]. Then the author of the article writes: "Knowledge is a phenomenon worthy of punishment as an element of corruption. If bribery can be defined as the enrichment of a civil servant through the abuse of official powers, acquaintanceship is a loyal but not always educated relative, friends, and acquaintances of an official. is to strengthen his personal power by collecting z people" [13].

## RESEARCH METHODOLOGY

During the research, methods such as systematic analysis, statistical observation, statistical summation and grouping , summarizing indicators, average quantities, dynamic series, correlation - regression analysis, econometric modeling and statistical forecasting were widely used.

In this article, in order to prevent the harmful consequences of corruption from an economic and social point of view, the factors and sources that cause them are taken with the help of statistical information, various analyzes were conducted on them using statistical methods, and based on the results of the research of local and foreign scientists, the best alternatives are suitable for implementation in our country. characteristics were shown.

Corruption is measured based on:

Corruption perception index (Corruption Perceptions Index - CPI) has been calculated by Transparency International [14] since 1995. The obtained results were analyzed using statistical methods and diagrams.

## ANALYSIS AND RESULTS

The role of statistical data in the organization of anti-corruption processes is invaluable. Statistical data play an important role in clarifying the state, nature, extent, changes and trends of corruption. It serves to increase the effectiveness of the implementation of state policy in the field of combating corruption. There are following types of corruption:

- Bribery;
- Fraud;
- Scam;
- Nepotism.

Acquaintance is the formation of staff on the basis of familiarity, not on the basis of business qualities, but on the basis of one's own interests.

Strategy of Actions on five priority directions of further development of the Republic of Uzbekistan in 2017-2021 in order to develop the modernized Uzbekistan at a stable and rapid pace, and to further increase the effectiveness of the ongoing reforms In [8] format, on January 3, 2017, due to the political will of President Shavkat Mirziyoyev, the Law of the Republic of Uzbekistan "On Combating Corruption" [2] was adopted:

*First* of all, it started a whole new stage of fight against corruption in our country, which means that the Republic of Uzbekistan is a supporter of consistent fight against corruption.

*Secondly* , it shows that the country's economy is striving to improve the judicial system, ensure the true independence of the judiciary and reform the public service, and increase the ability of the country's economy to attract foreign investment.

*Thirdly* , he clarified that the fight against corruption is considered one of the priority tasks of the state policy and activities of state bodies of the Republic of Uzbekistan.

*Fourthly* , it made it possible to combine the powers and capabilities of the state apparatus and institutions of civil society in the fight against such a dangerous evil as corruption .

*Fifth* , as part of the noteworthy work in the direction of ensuring the purity of our ranks and personnel, in 2017-2021 , the institutional and legal foundations of ensuring legality and law and order were formed in our country, which is an effective integrated system of fighting corruption. is evidence of its creation (Table 1).

**Table 1**
**Typology of corrupt relations**

| Criteria for dividing corruption into types | Types of corruption |
|---|---|
| Who abuses his official position | State ( corruption of state officials ) ;<br>Trade ( corruption of company managers ) ;<br>Political ( corruption of political figures ) |
| Who is the initiator of corrupt relations | Asking for a bribe by a leader on his own initiative (bribery)<br>Bribery and purchase at the requester's initiative |
| Who is the bribe giver | Individual bribe ( by a citizen )<br>Business bribery ( by a legitimate firm)<br>Bribery and criminal acquisition ( by criminal entrepreneurs, for example, drug mafia ) |
| The form of benefit that the bribe taker receives from the presence of corruption | Bribes in the form of money<br>Exchange of favors (patronage, nepotism) |
| Corruption or objectives from the point of view of the briber | Expediting bribe (given so that the recipient of the bribe can fulfill his functional obligation faster)<br>Delaying (stopping) bribe (given so that the person receiving the bribe violates his service obligations)<br>Bribe "for a good attitude" (it is given so that the person receiving the bribe does not needlessly bother the bribe giver ) |

Table 1 above provides a comprehensive breakdown of corruption by type as well as by type.

With the adoption of the Law of the Republic of Uzbekistan "On Combating Corruption"[2], the provisions of the Law of the Republic of Uzbekistan "On Combating Corruption" of the President of the Republic of Uzbekistan dated February 2, 2017 Decision No. PQ-2752 [15] on implementation measures was adopted.

Table 2 below provides information about the factors that cause corruption, according to which these factors are divided into different groups for economic, institutional and socio-cultural reasons.

**Table 2**
**Causes of Corruption**

| Economic Reasons | Institutional Reasons | Socio-Cultural |
|---|---|---|
| low salaries of civil servants | high degree of closure of state institutions | weakening and disappearance of moral concepts in society; |
| high authority | reporting system idiosyncrasy (magnitude) | low legal culture of citizens |
| | lack of transparency in the law-making system | the atmosphere of society looking at the arbitrariness of the "power holders". |
| | weak personnel policy of the state | |

As a result of a number of practical measures to combat corruption-related crimes in Uzbekistan, the level of detection of corruption-related crimes has increased (Table 3) [14].

**Table 3**
**Level** of **detection of corruption related crimes in Uzbekistan**

| System name | 2021 | 2022 (January-June) |
|---|---|---|
| Ministry of Health | 517 | 354 |
| Banking system | 324 | 312 |
| Ministry of Public Education | 210 | 219 |
| Ministry of Preschool Education | 201 | 178 |
| Ministry of Higher and Secondary Special Education | 109 | 82 |
| Employment and labor relations | 56 | 66 |
| Ministry of Agriculture | 33 | 44 |
| Authority | 150 | 189 |

As can be seen from the above statistical figures, the largest number of corrupt crimes are attributed to health care, banking system, and education system organizations.

Especially in the field of education (primary education, general education, higher education), the presence of corruption is considered the biggest threat to the future. Corruption in education undermines ongoing reforms and creates a new "corruption-prone generation."

**Table 4**
**Countries with the lowest level of corruption, 2019**

| Level of corruption calls | The threat of corruption | Access to information on corruption |
|---|---|---|
| New Zealand | New Zealand | New Zealand |
| Australia | Singapore | Australia |
| United Kingdom | Ireland | United Kingdom |
| France | Germany | France |
| Singapore | Denmark | Latvia |
| Latvia | Iceland | Malaysia |
| Czech Republic | Norway | Czech Republic |
| Estonia | Finland | India |
| Ireland | Japan | Italy |
| Hong Kong | Luxembourg | Singapore |

On the official site of this rating, it is noted that 131 out of 180 countries have hardly increased during the last 10 years, and the average global indicator has not increased during these years.

analysis shows that in the new ranking of Transparency International's Corruption Perception Index for 2021 among the CIS countries, the Russian Federation is on 7 places (from 129 to 136), Ukraine is on 5 places (from 117 to 122), Kazakhstan Estonia by 8 places (from 94 to 102), Kyrgyzstan by 20 places (from 124 to 144), Tajikistan by 1 place (from 149 to 150), Turkmenistan by 4 places (from 165 to 169) decreased, while the indicators of the Republics of Georgia and Armenia remained unchanged.

**Table 5**
**Countries with the highest level of corruption, 2019**

| Level of corruption calls | The threat of corruption | Inability to obtain information on corruption |
|---|---|---|
| Turkmenistan | Libya | Turkmenistan |
| Libya | Somalia | Libya |
| Somalia | Yemen | Somalia |
| Yemen | Central Africa | Yemen |
| North Korea | Congo | North Korea |
| South Sudan | South Sudan | South Sudan |
| Syria | Syria | Syria |
| Congo | Guinea-Bissau | Congo |
| Eritrea | Afghanistan | Eritrea |
| Laos | Venezuela | Laos |

Since the level of development of the countries listed in the table cannot be compared with developed countries in the world, it is possible to understand that corruption has a high level of influence on the economy.

**Table 6**
**in Central Asian countries level of corruption (2019 year, score)**

| Countries | Level of corruption calls | The threat of corruption | Difficulty in obtaining information on corruption | Total |
|---|---|---|---|---|
| Kazakhstan | 28 | 10 | 12 | 50 |
| Kyrgyzstan | 29 | 10 | 13 | 52 |
| Uzbekistan | 38 | 12 | 20 | 70 |
| Tajikistan | 39 | 13 | 20 | 72 |
| Turkmenistan | 51 | 14 | 31 | 96 |

From the 7th table above, among the countries of Central Asia, our country has 38 points on the level of corruption threats, 12 points on the threat of corruption, and 20 points on the difficulty of obtaining information about corruption, with a total of 70 points. Let's see that it is in 3rd place.

Decree No. PF-6196 of the President of the Republic of Uzbekistan dated March 26, 2021 "On measures to raise the activity of internal affairs bodies to a new level in terms of quality in the field of ensuring public safety and fighting crime" [ 16], the authority to keep criminal legal statistics was transferred from the General Prosecutor's Office of the Republic of Uzbekistan to the Ministry of Internal Affairs.

Based on this decree, the Ministry's Rapid Information Department was transformed into the "Legal Statistics and Rapid Account Information Center" and was reorganized.

According to the joint decisions of the Ministry of Internal Affairs of the Republic of Uzbekistan, the General Prosecutor's Office, the State Security Service, the State Customs Committee, the National Guard and the Supreme Court of November 15, 2021, the procedure for maintaining a single information system "Electronic criminal-legal statistics" is correct. Regulation on" [17] confirmed.

This Regulation Based on the requirements of [17], the "Electronic criminal-legal statistics" unified information system, state statistics and report forms on corruption crimes were approved.

Paragraph 26 of this Regulation clearly defines which articles of the Criminal Code of the Republic of Uzbekistan fall into the category of corruption crimes .

These are: 1. Crimes provided for in Articles 192 [9], 192 [10], 192 [11], 205, 206, 208, 209, 210, 211, 212, 213, 214, 301 of the Criminal Code of the Republic of Uzbekistan ;

2. Crimes provided for in Articles 167 and 168 of the Criminal Code, committed by an official or employee of an enterprise, institution and organization, regardless of the form of ownership, using their official position;

3. This Regulation includes the crimes provided for in Article 243 of the Criminal Code for the legalization of the proceeds of crimes, the main crime of which is recognized as a corruption crime .

include statistical reports on corruption crimes, but only reports on economic crimes were compiled.

At present, the statistics of corruption crimes are being kept at the level of ministries and agencies, and are being presented to the relevant ministry agencies, including the Anti-Corruption Agency of the Republic of Uzbekistan.

Decision PQ-240 of the President of the Republic of Uzbekistan of May 11, 2022 "On measures to improve the mechanisms for eliminating corruption risks in the field of public administration and to expand public participation in this field" [18] The adoption of this law led to a significant reduction in all corruption-related crimes this year.

It also forms the ability to take specific measures aimed at preventing the repetition of the crime in the form of corruption by determining the causes and conditions of corruption in state bodies. Keeping statistics of corruption crimes is considered an important condition for prevention of corruption.

## CONCLUSIONS AND SUGGESTIONS

In the fight against corruption, the priority of legality, rights, freedoms and legal interests of citizens, openness and transparency, systematicity, cooperation of the state and civil society, the priority of measures to prevent corruption and the inevitability of responsibility must be determined by law.

Coordinating the statistics of corruption crimes in the development of state programs to fight corruption in our country, in the effective establishment of internal control structures against corruption in state bodies and organizations, including the Council of Ministers of the Republic of Karakalpakstan, regions and Tashkent city administrations, the ministry and serves as an important tool in the development of the "Roadmap" for combating corruption in organizations, in the purposeful determination of the measures to be implemented in this direction.

The political-economic aspect of corruption is that it has an illegal influence on economic processes. A low salary that does not match the employee's qualifications and job responsibilities feeds corruption. According to a study conducted by the World Bank, the main reason for corruption is the low salaries of officials. Therefore, it is necessary to regularly encourage honest and high-quality, qualified work. Working conditions should be taken into account when paying wages, and wages should be fairly differentiated.

The above-mentioned suggestions and recommendations are the main goal of our activities regarding the victory over corruption and "clean hands" policy of New Uzbekistan, which is to get rid of this vice by achieving the principles of justice and the rule of law in practice. , which rejects corruption in our country and creates an atmosphere of absolute intolerance and intolerance in society.

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*the General Prosecutor's Office, the State Security Service, the State Customs Committee, the National Guard and the Supreme Court dated November 15, 2021. statute on"*

15. *Resolution No. PR-240 of the President of the Republic of Uzbekistan dated May 11, 2022 "On measures to improve mechanisms for eliminating corruption risks in the field of public administration and to expand public participation in this field."*

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# DIGITAL TRANSFORMATION IN EDUCATION

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**ABSTRACT** **DOI No: 10.36713/epra11864** **Article DOI: https://doi.org/10.36713/epra11864**

***The digital transformation in higher education is considered as one of the mega trends in education sector and gained potential in recent times. It basically describe the transformation from traditional learning to virtual learning. Digital transformation is not adapted by all the institutions, though the majority of the institutions are practicing digitization in education. They are restricted only to the basic part of digitalization. Tools such as use of PPTs, software like word, excel etc. are used in teaching students. Students are not exposed to use digital and digital aids. The researchers in this study have attempted to understand the concept of digitalizing education service, the perception of students with regard to digitalization and to evaluate the requirements of students in respect to digitalization.***

***The study revealed that although many institutions of higher learning are practicing digital media for the benefit of instructors and students, there is still a lot that needs to be done. It was also found that majority of the students prefer improvement in learning through digitalization.***

**KEYWORDS:** ***Higher education, Digital transformation, Virtual learning, Digital media, Students perception, Digital education, Educational service, visual tools.***

## INTRODUCTION

Digital transformation in education refers to bringing about a change or advancement in current education system in order to meet the ever growing expectations of the students as well as the teachers and this helps to bind them together in a positive manner. It is not about software or hardware up gradation it is more about a collaborative and interactive education. Though the Indian education system is striving hard to bring about a change in teaching methods, it is not greatly successful. It is necessary to understand the grounds of requirements as the students these days are not interested in class room lectures, they prefer something that can have positive impact in their way of learning. Some of the digital learning tools like Edmodo, Ted-Ed, kahoot, animoto makes learning interesting .In replacement to classroom lecture in the sector of education the educator can adopt technologies like Personalised and adaptive learning, two way conversation in e-learning, mobile or video based learning, usage of virtual reality and augmented reality of learning etc.

Though there is a significant proof that digital transformation in education is benefitting majority of the students who are already experiencing such way of learning. It is an undeniable fact that not every college is adapting to digital transformation in education it is important for all colleges to bring in digitalization in education as the students expect an interactive way of learning.

## BENEFITS OF DIGITAL TRANSFORMATION IN EDUCATION

- Digitalisation in education sector enable students to develop self-directed learning skills

- It helps students in the development of analytic reasoning
- It enables or drives student to become more accountable and it also helps students to understand the concepts in a realistic way
- Digital learning acts as an effective method for minimizing costs and maximise the positive growth for the students as well as educators.

## REVIEW OF LITRATURE

A number of research papers and articles provide a detailed insight about the role of digital transformation in current education and view of digitalization.

1. **Melissa Bond, Vitoria (2018)** concluded that the prominence of digitalization also features in project calls by the Federal Ministry of Education and Research, targeting research proposals to further analyze the state of digitalization within education, including conducting systematic reviews. Following a first call in 2016, 20 projects are now being funded that revolve around the three main topics of 'Adaptive Learning and Assessment environments', 'Interactivity and multimediality of digital learning environments' and 'Researching theory and practice in digital learning environments'
2. **LasloSeres, Pere Tumbas(2018)** concluded that the phenomenon of digital transformation is widely studied in numerous academic domains, and the crude overview of the field is a result of such research. Different authors have defined digital transformation in different, often ambiguous ways. A query into academic and professional literature using keywords "digital transformation" results in thousands of papers exploring the concept of digital transformation from different perspectives. The most common perspectives include: an individual, an institution/organization, a network, an industry or an entire ecosystem, economy, as well as the digital era.
3. **Deepanshu, (2016)**focused on e-learning application model based on cloud computing will not stop its pace to proceed. As the cloud computing technologies become more sophisticated and the applications of cloud computing becomes increasingly widespread, e-learning will certainly usher in a new era of cloud computing.

## STATEMENT OF THE PROBLEM

- The education system in India has become obsolete and therefore with advancements in technology and modernization in the method of teaching is changing in a slower space
- There is a need to identify what was the perception of students pursuing higher education towards the recent or increasing change in the field of education system
- Therefore there is a necessity to understand the perception of the students and to identify the challenges and opportunities in bringing digitalisation into education system

## OBJECTIVES OF THE STUDY

1. To study the concept of digitizing educational services
2. To study the perception of students with regard to digitization of educational services
3. To evaluate the requirements of the students in the respect to digitization of educational services

## METHODOLOGY

The research on digital transformation in education was based on both primary and secondary data. The primary data was collected by circulating questionnaire to student's pursuing higher education in different colleges. A sample size of 100 was considered to carry out the research. Secondary data was collected from online websites and books. This data was tabulated and analysed. Findings have been summarised and suggestions have been made.

## SCOPE OF THE STUDY

1. The research paper limits itself to the opportunities and challenges of digital transformation in education with respect to higher education, in India
2. The opportunities that is being expected by the students and what they are being offered.

## LIMITATIONS OF THE STUDY

- The primary data was randomly collected from students pursuing higher education in different colleges
- The study is limited to UG and PG students.
- The findings of the study cannot be generalized to other areas of research

The accuracy of the study depends upon the objectivity of the students which could be biased.

## ANALYSIS AND INTERPRETATION OF DATA

**Table no 1 showing the age group of the respondents**

| Age group | Percentage |
|---|---|
| 18-20 | 32.4 |
| 21-24 | 62.9 |
| Above 25 | 4.8 |

From the above table it is seen that 32.4% of the respondents are in the age group of 18-20, 62.9% of them are in the age group of 21-23 and the remaining 4.8% belong to the age group of 25 and above. Therefore it can be inferred as majority of the respondents are from the age group of 21-24 who are young people just passed their teens.

**Chart no1 showing the age group of the respondents**

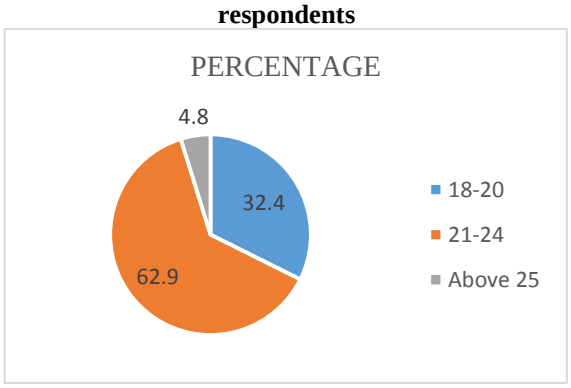



**Table no 2 showing the education qualification of the respondents**

| Qualification | Percentage |
|---|---|
| UG | 39 |
| PG | 56.2 |
| Others | 4.8 |

From the above table it can be analysed that the percentage of the respondents of the study is a combination of students who are currently pursuing under graduation, post-graduation and other educational background. This study comprises 56.2% of the post graduate students, 39% of under graduates and the remaining 4.8% belong to other educational background. Therefore it can be inferred that majority of the students are pursing higher education.

**Chart no 2 showing the education qualification of the respondents**

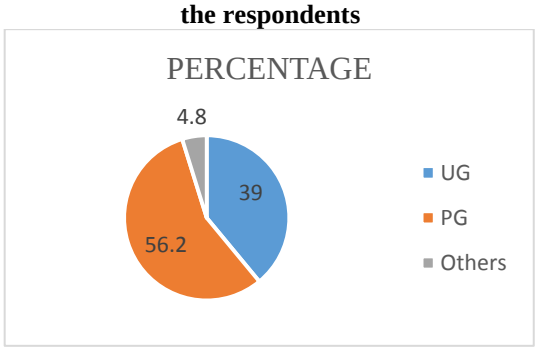



**Table no 3 showing the awareness of digital education among respondents**

| Response | Percentage |
|---|---|
| Yes | 92.3 |
| No | Nil |
| Somewhat | 7.7 |

From the above mentioned table it is seen that majority of the students are aware of digital education that is 92.3% of them are aware of digitalization, but7.7% of the respondents are confused if they are aware about digital education or not. Therefore it can be inferred that majority of the students are aware about digital education.

**Chart no 3 showing the awareness of digital education among respondents**

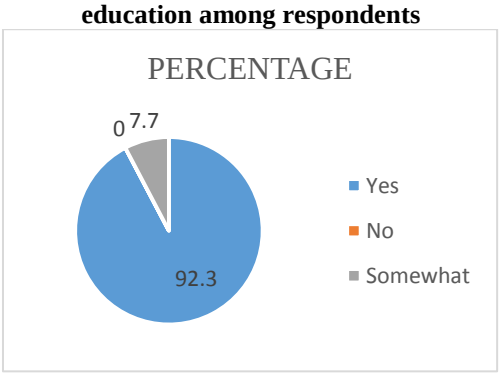



**Table no 4 showing the respondents' perception towards digital education**

| Response | Percentage |
|---|---|
| Spreading knowledge via computer, internet etc. | 37.1 |
| Learning via computer, internet, mobile phones etc. | 9.5 |
| Teaching the use of digital media | 10.5 |
| Both a & b | 42.9 |
| None of the above | Nil |

The above table represent the perception of the students towards digital education. It can be analysed that 37.1% of the respondents perceive that spreading knowledge via computer, internet etc. is digital education and 9.5% of the respondents feel learning via computer, internet, mobile phones etc. is digital education but majority of the respondents feel both spreading knowledge and learning via computer, internet etc. is digital education and the remaining 10.5% of the respondents perceive teaching the use of digital media is digital education. Therefore it can be inferred that the majority ofrespondents feel both learning and spreading of knowledge via computer, internet etc. is digital education.

**Chart no 4 showing the respondents' perception towards digital education**

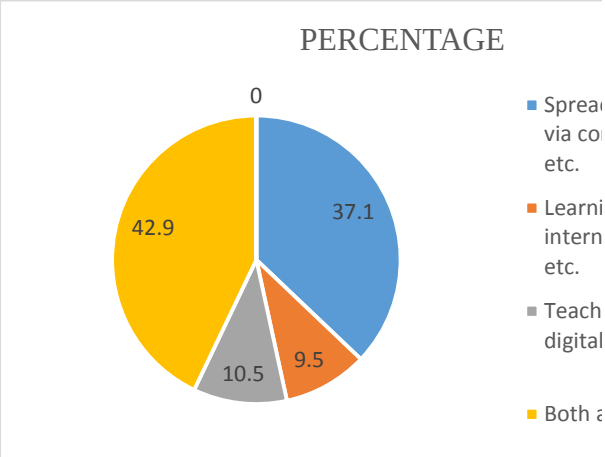



**Table no 5 showing if the respondents have experienced digital education**

| Response | Percentage |
|---|---|
| Yes | 97.1 |
| No | 2.9 |

From the above table it is clear that 97.1% respondents have experienced digital education and remaining 2.9% haven't experienced digital education. Therefore it can be inferred that majority of the institutions and students practice digital education.

**Chart no 5 showing if the respondents have experienced digital education**

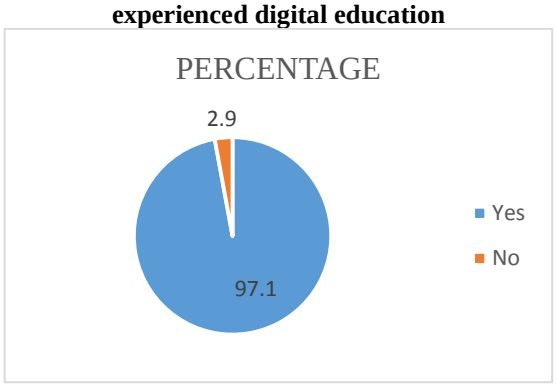



**Table no 6 showing the respondents' usage of digital education**

| Response | Percentage |
|---|---|
| Only learning through PPTs and other presentation | 59.8 |
| Only by using digital aids (mobile, computer etc.) | 18.6 |
| To a great extent | 21.6 |

The above table is an analysis of the extent to which students have experienced digital education. 59.8% of the students have experienced digital education from learning through PPTs and other forms of presentations, 21.6% of students have experienced digital education to a great extent and only 18.6% of the students have experienced digital education by using digital aidsie both in the form of learning and using. Therefore it can be inferred that the majority of students have experienced digital education only bylearning through PPTs and other presentations.

**Chart no 6 showing the respondents' usage of digital education**

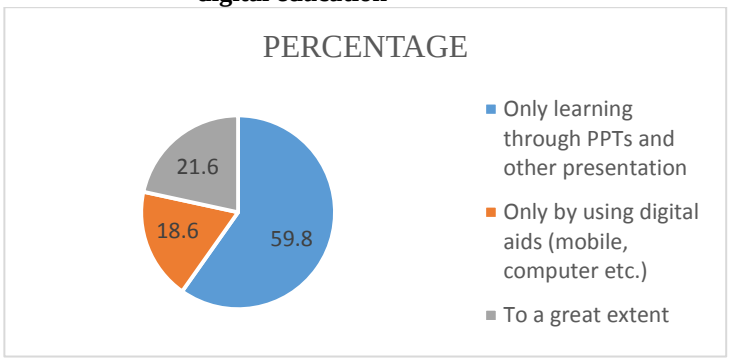



**Table no 7 showing the effectiveness of digital learning in comparison with traditional learning**

| Response | Percentage |
|---|---|
| Very effective | 50.5 |
| Effective | 49.5 |
| Not effective | 0 |

The above table is the study on effectiveness of digital learning in comparison with traditional learning. 49.5% of respondents' feel it is effective and 50.5% of the respondents' feel digital learning is very effective. Therefore itcan be inferred that the majority of respondents feel digital education is very effective, but there are remaining students who feel both digital and theoretical learning is effective.

**Chart no 7 showing the effectiveness of digital learning in comparison with traditional learning**

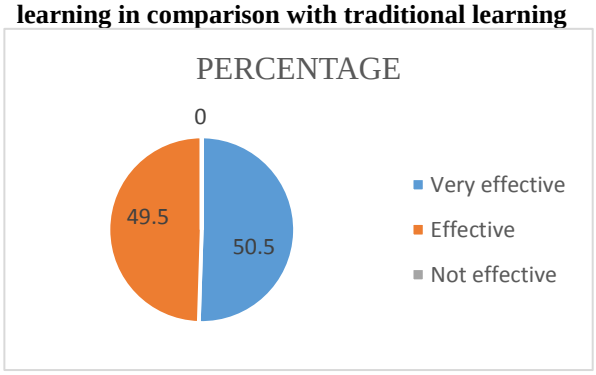


**Table no 8 showing the necessity for digital education in current education era**

| Response | Percentage |
|---|---|
| Yes | 86.2 |
| No | 6.7 |
| May be | 7.1 |

The above table explains the importance of digital education in current education era. The table states that 86.2% of the students feel digital education is necessary in current education era, 6.7% feel there is no necessity for digital education in current education era, but 7.1% of the students are confused if there is necessity for digital education in current education era. Therefore it can be inferred that the majority of students have realised importance of digital education in current education, but there are few students who are in dilemma if there is necessity for digital education.

**Chart no 8 showing the necessity for digital education in current education era**

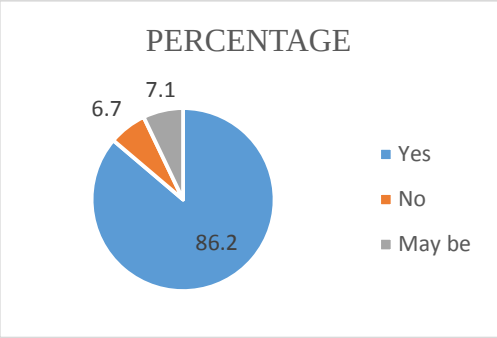



**Table no 9 showing the ineffectiveness of digital education**

| Response | Percentage |
|---|---|
| Lack of knowledge about digitalization | 25.9 |
| Lack of knowledge about the usage of digital devices or tools | 44.4 |
| Hesitation from students to adapt to digitalization | 3.7 |
| Convenience in classroom lecture | 25.9 |

The above table states the reasons for ineffectiveness in digital education. 44.4% of the respondents feel digital education is ineffective due to lack of knowledge on usage of digital devices or tools. 25.9% of respondents feel digital education is ineffective due to lack of knowledge on digitalization. 25.9% are convenient in classroom lecture and remaining 3.7% students feel hesitant in adapting to digitalization, which is the reason for ineffectiveness in digital learning. Therefore it can be inferred that majority of the respondents feel lack of knowledge and usage of digital tools are the reasons of the ineffectiveness in digital education.

**Chart no 9 showing the ineffectiveness of digital education**

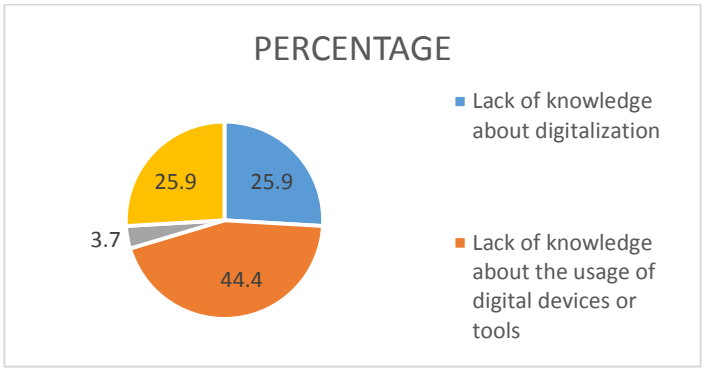



**Table no 10 showing the adaptation of digital learning at respondents' institutions**

| Response | Percentage |
|---|---|
| Yes | 86.7 |
| No | 13.3 |

From the above table it is clear that there are institutions who practice digital learning. 86.7% of the institutions are practicing digital learning, whereas remaining 13.3% of the institutions have still not adopted digital learning. Therefore it can be inferred that majority of the institutions have adapted to digital learning, and the institutions who aren't adaptive to digitalization should be focused.

**Chart no 10 showing the adaptation of digital learning at respondents' institutions**

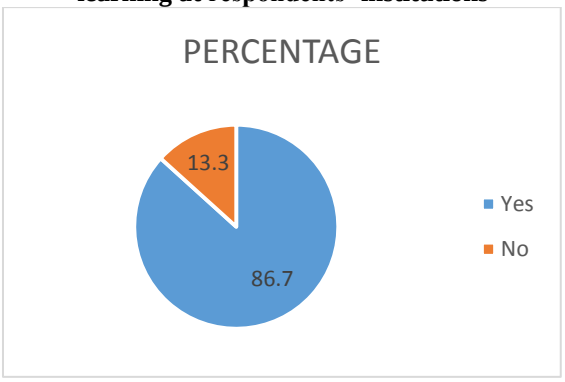



**Table no 11 showing the digital learning tools adapted by respondents' institution**

| Response | Percentage |
|---|---|
| Social networks | 41.9 |
| Usage of visual reality | 30.5 |
| Online games and quiz | 5.7 |
| Usage of animoto | 2.9 |
| Others | 19 |

The above table is the representation of tools adopted by the institutions in teaching students through digitalization. 41.9% of the students have experienced digital learning through social media at their institutions. 30.5% of the institutions use visual reality as a tool for digital learning. 5.7% and 2.9% of the students have learned through online games/quiz and usage of animotos, the remaining 19% of the students have used other tools in digital learning. Therefore it can be inferred that most of the institutions use social networks and visual reality as digital learning tools, but there are still many institutions who aren't using digital tools like quiz, online games, animotos etc. which can help to grab students' interest.

**Chart no 11 showing the digital learning tools adapted by respondents' institution**

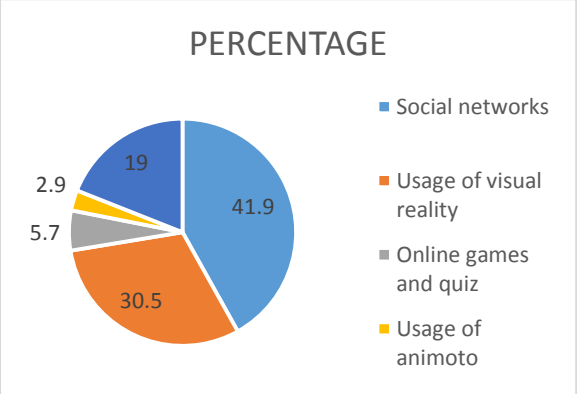
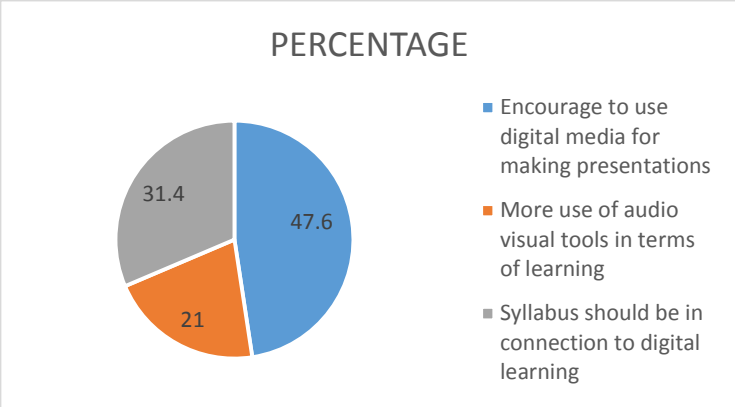



**Table no 12 showing the area of improvement required in digital education**

| Response | Percentage |
|---|---|
| Encourage to use digital media for making presentations | 47.6 |
| More use of audio visual tools in terms of learning | 21 |
| Syllabus should be in connection to digital learning | 31.4 |

The above table shows the area of improvement required in digital education. 47.6% of the students feel they should be encouraged to use digital media for making presentations, 31.4% feel the syllabus should be in connection to digital learning and remaining 21% feel there should be more usage of audio visual tools in terms of learning. Therefore it can be inferred that students prefer there should be improvement in the field of digital education, such as encouragement by the institutions in using digital media for presentations, to add syllabus in connection with digital learning and usage of audio visual tools in terms of learning.

**Chart no 12 showing the area of improvement required in digital education**




## SUMMARY OF FINDINGS

1. From the study it is clear that majority of the students are aware about digital education and its impact on their future.
2. The respondents feel both learning and spreading of knowledge via computer, internet, mobile phones etc. is digital education.
3. Majority of the institutions and students practice digital education which shows the development in teaching and learning in the field of education.
4. Most of the students have experienced digital education only by learning through PPTs and other presentations, which clearly says there is lack of usage of other digital tools in enhancing their knowledge.
5. Majority of respondents feel digital education is very effective, but there are remaining students who feel both digital and theoretical learning is effective.
6. The students have realised the importance of digital education in current education, but few students who are in dilemma if there is necessity for digital education, which is the reason for ineffective learning.
7. Most of the institutions have adapted to digital learning this shows a positive impact.
8. Most of the institutions use social networks and visual reality as digital learning tools, but there are still many institutions who aren't using digital tools like quiz, online games, animotos etc. which can help to grab students' interest.
9. The students prefer there should be improvement in the field of digital education, such as encouragement by the institutions in using digital media for presentations, to add syllabus in connection with digital learning and usage of audio visual tools in terms of learning.

## CONCLUSION

This study was undertaken to analyse the concept of digital education as perceived by students of higher education. Digital education is a new concept especially in India, which is of let experiencing the internet evolution. Although many institutions of higher learning have obtained and implemented various digital media for the benefit of instructors and students, there is still a lot that needs to be done. Most people still feel that digital learning is restricted to downloading materials from the net or making use of PPTs. Both students and instructor need to be trained or educated on the effective use of digital media. Institutions also must install and upgrade their resources to meet the need. In the light of this study the following recommendations can be given.

## RECOMMENDATIONS

1. From the study on digital transformation in education, it shows that 7.7% of the students are in the state of confusion if they are being provided education in digital form or if it is traditional form of learning. We would recommend/suggest the institutions to provide clarity in the teaching methods used by institutions.
2. The students have realised the importance of digital education in current education system, but there are a few students who are in dilemma if there is necessity for digital education. we recommend the students to be technically equipped as it is the need of the hour which is possible mostly in the form of digital education
3. The students prefer improvements in the field of digital learning as a lot of colleges restrict themselves to only teaching through ppts and other presentations we recommend the institutions to use various other digital tools like quiz, online games, animotos so as to grab the interest of the students and expand the horizons of learning.

## ACKNOWLEDGEMENT

We would like to express our gratitude and appreciation to all those who gave us the possibility to complete this research paper. A special thanks to Mount Carmel college PG department of commerce who encouraged and provided constant support to complete this research successfully.

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