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THE USE OF COMPUTER TECHNOLOGIES IN THE SYSTEM OF EDUCATION: ADVANTAGES AND PERSPECTIVES

Ashurov Zafarjon Rakhmankulovich
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ABSTRACT

The article is devoted to investigation of advantages and perspectives of using informative-computer technologies in teaching process and demonstrates the facilities and new opportunities for teachers who use them at their lessons.

KEYWORDS: computer technologies, information, informatization, teaching process, advantages, foreign language, education system.

INTRODUCTION

The inclusion of Uzbekistan in the world community sharply raises the problem of foreign language proficiency. In this regard, there is an increasing need for rapid mastery of foreign languages by broad segments of the population, the need to teach the basics of several foreign languages in the education system. The modern period of development of a civilized society characterizes the process of informatization.

Today, our country has risen to a high level, having gained a worthy reputation in the world community and attracts many foreign partners. Therefore, knowledge of languages in both practical and theoretical aspects is certainly necessary. The National Training Program declares the priority of education and upbringing, improving their quality. To do this, it is necessary to constantly improve educational programs, to intensify the search and implementation of effective innovative pedagogical technologies in the educational process.

Solving this problem requires new approaches to organizing the learning process, improving its forms and methods.

Currently, more and more attention is paid to the use of Internet resources in teaching a foreign language. This is due to the fact that they have the opportunity to show the development of phenomena, their dynamics, communicate educational information in certain doses and manage the individual process of learning knowledge. They stimulate the cognitive interests of students, create, under certain conditions, an increased emotional attitude of students to academic work, provide a versatile formation of images, contribute to the solid assimilation of knowledge, understanding the connection of scientific knowledge with life, while saving teachers' time.

The modern stage of technology development is characterized by the transition to the creation of multifunctional educational complexes and automated training systems based on computer technologies. Such complexes and systems have universal didactic capabilities: they allow teaching in an interactive mode, taking into account the individual capabilities of the trainees, and provide distance learning using modern technologies. In the process of teaching foreign languages in a modern general educational system, lighting and sound engineering means are used. Unfortunately, not all English teachers are aware of the need to use new information technologies, due to the fact that they have not received a convincing scientific and methodological justification of this issue. The lack of development of the problem under consideration determines the relevance of this scientific article.

The purpose of the work is to determine the role, functions and types of Internet resources, to study effective ways of their use at English lessons in order to increase the level of knowledge of students.

The object and research is new information technologies as a means of the effectiveness of the educational process in teaching foreign languages. If a teacher uses information technology as a visual aid in the classroom, then this contributes to:
Solid assimilation of knowledge, formation of mental skills;  
Development of creative activity of students;  
Enrichment of abstract thinking of students;  
Increased motivation to learn English.

Research methods: critical analysis, descriptive method, method of induction and deduction, scientifically recorded observation, experiment, questionnaire, conversation, interview.

THE MAIN PART

One of the reserves for the intensification of the process of teaching a foreign language is the use of information technology. The ability to present your subject well, the teacher's pedagogical skills are based on the ability to build the learning process in accordance with the laws of this process, with the basic didactic principles. The introduction of multimedia programs into the educational process does not exclude traditional teaching methods at all, but harmoniously combines with them at all stages of training: familiarization, training, application, control. But the use of a computer allows not only to increase the effectiveness of learning many times, but also to encourage students to further independent study of English.

Informatization of society is a global social process, the peculiarity of which is that the dominant activity in the field of social production is the collection, accumulation, production, processing, storage, transmission and use of information carried out on the basis of modern means of microprocessor and computer technology, as well as on the basis of various means of information exchange. The informatization of society provides:

- Active use of the ever-expanding intellectual potential of the society, concentrated in the print fund, and scientific, industrial and other activities of its members;
- Integration of information technologies with scientific, industrial ones, initiating the development of all spheres of social production, intellectualization of labor activity;
- High level of information service, accessibility of any member of the society to sources of reliable information, visualization of the information presented, the materiality of the data used.

One of the priority directions of the process of informatization of modern society is the informatization of education – the introduction of new information technologies into the education system [1]. This will make it possible to:

- Improve the management mechanisms of the education system based on the use of automated databases of scientific and pedagogical information, information and methodological materials, as well as communication networks;
- Improving the methodology and strategy for selecting the content, methods and organizational forms of training that correspond to the tasks of developing the student's personality in modern conditions of informatization of society;
- Creation of methodological training systems focused on the development of the intellectual potential of the student, on the formation of skills to acquire knowledge independently, to carry out information and educational, experimental and research activities, various types of independent information processing activities;
- Creation and use of computer testing, diagnosing, monitoring and evaluating systems.

The use of such complexes provides the learner with a research tool with which it is possible to register, collect, accumulate information about the process being studied or being studied; create and investigate models of the processes being studied; visualize the patterns of processes, including those actually occurring; automate the processing of experimental results; manage objects of real reality [2].

These systems are a complex of software and hardware and equipment that allows you to combine various types of information (text, hand-drawn graphics, slides, music, moving images, sound, video) and at the same time implement an interactive user dialogue with the system. The use of video computer systems and multimedia systems ensures the implementation of intensive forms and methods of teaching, the organization of independent learning activities, contributes to the motivation of learning through the possibility of using modern means of complex presentation and manipulation of audiovisual information, increasing the level of emotional perception of information.

As domestic and foreign experience in the application of modern scientific information technologies shows, the implementation of the above capabilities allows for:

- providing the learner with a tool for research, design, formalization of knowledge about the subject world and at the same time an active component of the subject world, a tool for measuring, displaying and influencing the subject world;
- Expansion of the sphere of independent activity of trainees due to the possibility of organizing various types of educational activities (experimental research, educational and gaming, information and educational activities, as well as information processing activities, in particular audiovisual), including individual, at each workplace, group, collective;
- Individualization and differentiation of the learning process through the realization of the possibilities of interactive dialogue, independent
The use of computer technology reveals the enormous possibilities of the computer as a means of teaching English lessons in a secondary school. Computer training programs have many advantages over traditional teaching methods. They allow you to train various types of speech activity and combine them in different combinations, help to understand language phenomena, form linguistic abilities, create communicative situations, automate language and speech actions, and also provide the possibility of taking into account the leading representative system, the implementation of an individual approach and the intensification of independent work of the student. Multimedia English language training programs use various methods of presenting information, communication and working with databases and knowledge.

When using modern technical means in the classroom, it is necessary to observe the well-known general didactic principles: The principle of scientific; The principle of consistency and cyclicality; The principle of consciousness of assimilation of activity; The principle of accessibility of content; Activity and independence; Individualization and collectivity of learning; Effectiveness of educational activities; Connection of theory and practice; The principle of visibility or, as they say, visual methods of content and activity [5].

The creation of an artificial foreign language environment in the process of teaching foreign languages is one of the important problematic issues of modern methodology. It is primarily associated with the implementation of mass education for two of the four main types of speech activity: listening and speaking (conditionally communicative or communicative). To achieve this goal, various types of visibility are used. The modern stage of technology development is characterized by the transition to the creation of multifunctional training complexes and automated training systems. Such complexes and systems have universal didactic capabilities: they allow teaching in an interactive mode, taking into account the individual capabilities of the trainees, to provide distant learning using modern technologies. In the process of teaching foreign languages in a modern secondary school, lighting and sound engineering means are used.

Along with the above-mentioned means of visualization, in the modern methodology of teaching English at school, more and more attention is paid to illustrated visual means of teaching with the help of computer software [3].

**CONCLUSION**

The use of information technology reveals the enormous possibilities of the computer as a means of teaching English lessons in a secondary school. Computer training programs have many advantages over traditional teaching methods. They allow you to train various types of speech activity and combine them in different combinations, help to understand language phenomena, form linguistic abilities, create communicative situations, automate language and speech actions, and also provide the possibility of taking into account the leading representative system, the implementation of an individual approach and the intensification of independent work of the student. Multimedia English language training programs use various
methodological techniques that allow for familiarization, training and control.

Visibility in the classroom contributes to: the solid assimilation of knowledge, the formation of skills and abilities; the development of creative activity of students; enrichment of abstract thinking of schoolchildren.

The results of the final experiment allowed us to draw the following conclusions:

1. The level of interest in the content of the learning process has significantly increased, and interest in grades has decreased;
2. The activity of students in the classroom has increased;
3. Students have a feeling of satisfaction from the work done;
4. New information technologies form and develop the motivation of students.

In conclusion, it should be emphasized that the introduction of multimedia programs into the educational process does not exclude traditional teaching methods at all, but harmoniously combines with them at all stages of training: familiarization, training, application, control. But the use of a computer allows not only to increase the effectiveness of learning many times, but also to encourage students to further independent study of English.

LIST OF USED LITERATURE

BIOLOGICAL CHARACTERISTICS OF LOCAL AND INTRODUCED VARIETIES

Mahmudov A.¹, Mashrapov A.²
¹,² Fergana Scientific Experimental Station of the Scientific-Research Institute of Horticulture, Viticulture and Winemaking named after Academician Mahmud Mirzaev, Fergana Region, Uzbekistan

ABSTRACT
The article presents the results of a study to determine the best varieties of apple trees with early, medium, and late ripening, yielding a high yield with high-quality products not inferior to the standard in the conditions of low-fertile, pebble soils of the Fergana region. Recommended apple varieties among early-ripening - Chulpon, Hosildor, White filling, Sux malikasi, mid-ripening Argus, Guzal olma, Fumi, Jesser Mark, late-ripening Fuji, Boyken, Starkrimson.

KEYWORDS: apple, variety, fairy, middle, evening, rod, body, twig, local varieties

INTRODUCTION
The prevalence of apples is determined by its valuable properties, their importance in human health, production and the economy. The only drawback of apples is the large number of varieties that require less replacement. Propagation of orchards on an industrial scale requires the development of the most efficient and economically viable varieties. In order to meet the needs of the domestic market, processing industry and exports in the construction of apple orchards and the reconstruction of the old ones, it is important to select the best of the morning, middle and evening varieties of apples.

In this regard, in the horticulture of developed countries, it will be possible to meet the demand for apples throughout the year by introducing in our country the practice of reconstructing the old ones, it is important to select the best of the morning, middle and evening varieties of apples.

The research was carried out on the basis of the adopted methodology in order to evaluate local and introduced varieties of apples and to distinguish superior varieties from others by economic characteristics (Lobanova et al., 1973). The object of study was the use of 11 early, 12 medium and 15 late varieties of apples available at the station, and this article provides information on 18 varieties with high performance.

RESULTS AND DISCUSSION
The predominance of the yield per bush was found in the beautiful varieties Djizakskoe rannee, Hosildor and Sokh guzali, and the high yields per unit area of the cross-section of the body (0.26-0.27 and 0.30 kg/cm²) were corresponding to these varieties became relevant.

Observations on the growth process in the middle varieties showed that the growth of annual branches was stronger in the middle varieties studied Jesser Mark (40.7 cm), Uzbek red, Summer red (37.0 cm). The predominance of trunk circumference and body cross-section was recorded in the varieties Guzal olma (67.0 cm-352 cm²), Argus (62.1 cm-302 cm²). The results of the analysis revealed that in medium apple varieties there was a partial inverse relationship between the increase in tree cross-section and the yield load per square centimeter of body cross-section. In particular, the highest yields per cross-section were Naliv Zolotoy (0.23 kg/cm²), Uzbek Red (0.21 kg/cm²), Jesser Mark and Summer Red.

According to the analysis of late apple varieties, R. on the average growth of branches during the annual growing season. Simirenko (45.6 cm), Fuji (41.7 cm), Boyken (40.3 cm), Golden Delishes (39.6 cm), Elegant (39.1 cm), body circumference length and body cross section R. accordingly on the surface. Simirenko (73 cm-420 cm²), Fudji (66 cm-343 cm²), Nafis (72 cm - 413 cm²).

In late varieties of apples, the law of the correct relationship between the amount of yield per square centimeter of body cross-sectional area and the yield of a single tree was not determined.

Apples are the most productive fruit species and are also leaders in the number of varieties. The proliferation of poor quality apple varieties also requires the selection of the most productive of them.

CONCLUSION
Preliminary research results show that clear conclusions about the relationship between growth rate and yield in apple varieties can be obtained on the basis of many years of observations.

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In our research, high-yielding and fruit-quality varieties of early, medium and late apples in low-yielding, rocky soils were identified as superior to the standard varieties. Cholpon, Hosildor and Beliy naliv from tomorrow’s apple varieties, Argus, Gozal apple, Fumi, Jesser Mark from the middle ones, Fuji and Boyken, Starkrim number varieties from the evenings can be recommended for planting in newly established and reconstructed gardens.

REFERENCES
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THE MEDIATING EFFECT OF COOPERATIVE LEARNING APPLICATION ON THE RELATIONSHIP BETWEEN SOCIAL MEDIA USAGE AND LANGUAGE PROFICIENCY OF STUDENTS

Janrey Mark M. Davin¹, Mary Ann E. Tarusan, PhD, EdD²

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Chapter 1
INTRODUCTION

Rationale

Language proficiency is the ability to use language for a variety of communicative purposes. Users with a good command of the language are considered to have a good command of it because they can grasp it without difficulty, communicate a wide range of ideas clearly in speech and writing, and comfortably engage with other speakers (Renandya et al. 618). Thus, educators agree that proficiency in the English language is the basis for success in academic pursuits. Subsequently, Trice reported that international students were isolated from local students and faculty members because of their poor English language skills.

Indeed, language proficiency is a key to academic performance. A person who does not speak English, for instance, may not have an access to the majority of world's known scientific and technological innovations which are written in English. In addition, the importance of English self-confidence in the process of adjusting to an English-speaking academic environment in a socio-cultural and psychological level has been proven (Yang, Noels, and Saumure 487-506).

Furthermore, pupils learn a language by being exposed to it or by reading it, according to Krashen's Input Hypothesis. If students have a lot of intelligible input, they are more likely to learn and produce the language appropriately. In this study, Filipinos must be overwhelmed with a lot of information through various channels, including social media, where English is frequently used.

Further examining social media usage may provide some insights into how students use social media in learning. Exploring it further may give insights into how students' cooperative learning applications can help the academic community.

Research Objective

This study aims to determine the mediating effect of cooperative learning application on the relationship between social media usage and language proficiency. The specific objectives are:

1. To assess the level of social media usage of students in terms of:
   1.1 habit;
   1.2 obligation; and
   1.3 knowledge sharing.
2. To ascertain the level of language proficiency of students in terms of:
   2.1 spoken tasks;
   2.2 comprehension;
   2.3 interaction strategies;
   2.4 qualities of spoken performance; and
   2.5 writing tasks.
3. To measure the level of cooperative learning application of students.
4. To determine the significance of the relationship between:
   4.1 social media usage and language proficiency;
   4.2 social media usage and cooperative learning application; and
   4.3 cooperative learning application and language proficiency.
5. To discover the mediating effect of cooperative learning application on the relationship between social media usage and language proficiency.

Hypothesis

The following null hypotheses were treated at the 0.05 level of significance
1. There is no significant relationship between social media usage and language proficiency and social media usage and cooperative learning application and cooperative learning application and language proficiency.
2. Cooperative learning application does not significantly mediate the relationship between social media usage and students’ language proficiency.

Review of Related Literature

This part of the study reviews of related literature on the mediating effect of cooperative learning application on the relationship between social media usage and students’ language proficiency.

Social Media Usage

In today’s generation, children and even teens spend the majority of their time on social networking websites. In fact, twenty-two percent of teenagers use social networking sites at least ten times a day, and more than half of the teens reported engaging the said sites at least once a day (O’Keefe and Clarke Pearson, 800-804). In addition, Pew Internet and American Life Project stated that more than seventy percent of young adults and youth (ages 12-29) utilize the internet, particularly on social networking sites (Lenhart et al.). Consequently, Shava and Chinyamurindi mentioned in their study that youth are engaged in social media sites because of three factors, namely: habit, knowledge sharing, and obligation (1-8).

The first indicator of social media is habit. According to Merriam Webster, the term habit refers to something that has become familiar because of frequent or regular repetition. A prior study, for example, attempted to define this as a concept of chronic social media consumption, leading to the coining of terms like media addiction, problematic media use, and media abuse (e.g., Caplan; Morahan-Martin; Young). Satisfaction is an important factor to consider while defining a habit. Thus, satisfaction distinguishes between two highly comparable behavior patterns in the context of social media use: habit and frequent visits or frequent use of a platform.

The second indicator of social media is knowledge sharing. This is the act of providing information or understanding between individuals, teams, communities, or organizations. It is possible to have explicit (procedures and papers) or implicit knowledge (intuitive and experience-based). Sharing information is a deliberate process that not only improves an individual's understanding but also contributes to the growth or enhancement of a body of knowledge that is available to others. Subsequently, Facebook is one method of disseminating information, and this is according to higher education institutions (Ainin et al. 64-73).

The third indicator of social media is an obligation. This is something that binds or obligates a person to perform specific actions whether out of a sense of obligation or as a result of custom, legislation, or other factors. Thus, as John Salmond stated, an obligation is a set of morals or regulations that requires or forces someone to do something. The obligation is effective due to any consequences that may be imposed if the terms are not followed (121).

Language Proficiency

Due to a variety of political, economic, and technical factors, English has become the worldwide language and the language of global communication. Because of globalization, English has become a crucial component of a successful personality as an essential instrument that is commonly used in worldwide communication. As a result, English continues to be the most frequently spoken language on the planet. The value of English proficiency in boosting export economies, attracting international investment, enhancing service exports, and facilitating global business and cultural links is widely known (Rao 1-8).

As North and Schneider point out, language is a communication device; hence, learners must be aware of these factors to be proficient in the target language such as spoken tasks, comprehension, interaction strategies, qualities of spoken performance, and writing tasks (217-262).

The first indicator of language proficiency is spoken tasks. This is exactly what it sounds like spoken language versus written or non-verbal language. The use of voice or similar utterances to transmit meaning to share thoughts or other information is referred to as spoken language. Thus, research shows that even highly proficient native speakers of English still need to learn ‘classroom language’ and use it effectively to facilitate language learning in the classroom (Renandya 1-3).

The second indicator of language proficiency is comprehension. Comprehension is understanding the material that necessitates explanations, interpretations, applications, views, empathizing, and self-monitoring among other things. According to the National Institute for Literacy, research has demonstrated that comprehension engagement can help kids learn, retain, and speak about what they read over a thirty-year period (Sargent et al. 361). Thus, the importance of reading comprehension in the literacy curriculum must not be forgotten. Is this foundation still visible in the middle of the deluge of literacy mandates that reading teachers face on a daily basis?

The third indicator of language proficiency is interaction strategies. These are the strategies, techniques, or approaches used to promote teaching and learning through communication, cooperation, support, and feedback. As a result, communication plays a critical role in today's global world, as everyone is involved in communication. The capacity to communicate effectively is widely regarded as the most important of all life skills. It allows us to participate in society, express and transmit information, and learn about the people and the world around us. When the speaker and listener convey the meaning in the first language, good communication is easy to achieve.

The fourth indicator of language proficiency is qualities of speaking performance. It is the ability to express oneself intelligibly, reasonably, and accurately without too much hesitation. Furthermore, before learning to read and write, humans are born with the ability to communicate. Humans spend far more time communicating vocally with...
language than they do with it in its written form at any given time.

The fifth indicator of language proficiency is written tasks that illustrate the student's ability to come up with a unique good way to look at a topic covered in class. It must demonstrate a critical engagement with a text or topic. Moreover, as Hyland properly points out, teachers’ remarks should play an important role in cognitive scaffolding, revealing students' strengths and flaws, and supporting students in the acquisition of disciplinary subject matter and writing discussion (240).

Cooperative Learning Application

Cooperative learning is a group-based learning strategy. Students in this group seek to teach each other despite having differing understandings. Individual learning approaches (just accept teaching) can provide less understanding than this method (Haq, Najmonnisa, and Saad). Furthermore, prior research have shown that this cooperative strategy can increase substantial results in science and other related domains such as the arts, humanities, and social sciences. Hence, cooperative learning may also be defined as a set of learning practices in which students collaborate to attain common learning objectives (Gillies 39-54).

Theoretical Framework

This study is anchored on the contention of Krashen’s (1985) Input Hypothesis, that people learn a language through being exposed to it or by reading it. A person will learn and produce the language correctly if they have access to a large volume of intelligible input. Given the findings of this study, Filipinos must be inundated with a substantial amount of information via various sources such as social media where English is frequently utilized. The communication process and language acquisition are likely to be experienced by language learners in blogs and microblogging sites, social networks, professional networks, video sharing networks, and content-driven communities, with 330 different Internet-based programs created as of the end of 2012 (Walaski 40-49).

**Figure 1. Conceptual Framework Showing the Variable of the Study**

**Independent Variable**

| PATH A | Cooperative Learning Application |
| PATH B | Language Proficiency |
| PATH C | Social Media Usage |

**Chapter 2
METHOD**

This chapter presented the research methods and data used in the study. The concise chapter entailed an important part of the study.

**Research Design**

This research utilized the descriptive-correlation design. The descriptive study describes students’ social media usage during the investigation, while correlational research covers ascertaining statistical associations between two variables (Vanderstoep and Johnston). Additionally, correlation design aims to find out the strength of relationship between the variables being studied (Creswell and Creswell).

**Research Locale**

This study was conducted in one of the prestigious universities and biggest private, non-sectarian university in Davao. Through the years, this university became one of the fastest-growing schools in Davao region, now it has branches and campuses in Region 11.

**Research Respondents**

The study employed stratified random sampling in selecting the respondents of this study. For the school year
2019-2020, 328 HUMSS students in grades 11 and 12 from one of Davao City's largest universities responded.

Research Instrument
A three-part questionnaire was used in the study, one for each variable. Expert recommendations were used to validate and revise the document. The researcher conducted a preliminary survey with a total of 30 respondents for reliability testing before conducting the actual survey. The Cronbach's alpha was used to conduct an internal consistency type of validity test on the preliminary data gathered.

Data Collection
In acquiring the data, the researcher explored the following procedures. After the research project was proposed, the researcher modified a downloaded questionnaire based on the obtained articles, journals, and books that served as the primary basis for investigations.

Chapter 3
RESULTS
The presentation, analysis, and interpretation of the acquired data are depicted in this part of the paper based on the research objectives of this study.

Social Media Usage
In Table 1, the weighted means of each criterion were computed, in which the level of social media usage has a weighted mean of 3.56 with a standard deviation of 0.61 and a descriptive interpretation of high.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>SD</th>
<th>Mean</th>
<th>Descriptive Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habit</td>
<td>0.81</td>
<td>3.56</td>
<td>High</td>
</tr>
<tr>
<td>Obligation</td>
<td>0.76</td>
<td>3.44</td>
<td>High</td>
</tr>
<tr>
<td>Knowledge Sharing</td>
<td>0.67</td>
<td>3.67</td>
<td>High</td>
</tr>
<tr>
<td>Overall</td>
<td>0.61</td>
<td>3.56</td>
<td>High</td>
</tr>
</tbody>
</table>

Language Proficiency
As revealed in Table 2, the level of language proficiency with an overall weighted mean score of 3.65 and a standard deviation of 0.59 has a verbal interpretation of high.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>SD</th>
<th>Mean</th>
<th>Descriptive level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spoken Tasks</td>
<td>0.66</td>
<td>3.57</td>
<td>High</td>
</tr>
<tr>
<td>Comprehension</td>
<td>0.69</td>
<td>3.66</td>
<td>High</td>
</tr>
<tr>
<td>Interaction Strategies</td>
<td>0.66</td>
<td>3.56</td>
<td>High</td>
</tr>
<tr>
<td>Writing Skills</td>
<td>0.77</td>
<td>3.99</td>
<td>High</td>
</tr>
<tr>
<td>Qualities of Spoken</td>
<td>0.63</td>
<td>3.46</td>
<td>High</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>0.59</td>
<td>3.65</td>
<td>High</td>
</tr>
</tbody>
</table>

Cooperative Learning Application
In Table 3, the level of cooperative learning application has a weighted mean of 4.19 with a standard deviation of 0.52 and a verbal interpretation of high.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>SD</th>
<th>Mean</th>
<th>Descriptive level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Interdependence</td>
<td>0.73</td>
<td>4.51</td>
<td>Very High</td>
</tr>
<tr>
<td>Assessment</td>
<td>1.05</td>
<td>3.83</td>
<td>High</td>
</tr>
<tr>
<td>Tutoring</td>
<td>0.79</td>
<td>4.15</td>
<td>High</td>
</tr>
<tr>
<td>Overall</td>
<td>0.52</td>
<td>4.19</td>
<td>High</td>
</tr>
</tbody>
</table>

Relationship between Social Media Usage and Language Proficiency
Depicted in Table 4.1 is the result of the test of the relationship between social media usage and language proficiency. This relationship was tested at a 0.05 level of significance.
Table 4.1  
Correlation between Social Media Usage and Language Proficiency

<table>
<thead>
<tr>
<th>Social Media Usage</th>
<th>Language Proficiency</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spoken Tasks</td>
<td>Comprehension</td>
</tr>
<tr>
<td>Habit</td>
<td>.206* (.000)</td>
<td>.181* (.000)</td>
</tr>
<tr>
<td>Obligation</td>
<td>.255* (.000)</td>
<td>.270* (.000)</td>
</tr>
<tr>
<td>Knowledge Sharing</td>
<td>.370* (.000)</td>
<td>.322* (.000)</td>
</tr>
<tr>
<td>Overall</td>
<td>.333* (.000)</td>
<td>.311* (.000)</td>
</tr>
</tbody>
</table>

The overall result reflects that social media usage is positively correlated with language proficiency since the overall r-value is .366 with a p-value <.05, hence rejecting the null hypothesis.

Relationship between Social Media Usage and Cooperative Learning Application

Displayed in Table 4.2 is the result of the test of the relationship between social media usage and cooperative learning application. The result shows that the overall values reveal a positive and significant relationship between social media usage and cooperative learning application (r=.372, p<.05).

Table 4.2  
Correlation between Social Media Usage and Cooperative Learning Application

<table>
<thead>
<tr>
<th>Social Media Usage</th>
<th>Cooperative Learning Application</th>
<th>Obligation</th>
<th>Knowledge sharing</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habit</td>
<td>.199* (.000)</td>
<td>.302* (.000)</td>
<td>.434* (.000)</td>
<td>.372* (.000)</td>
</tr>
</tbody>
</table>

Relationship between Cooperative Learning Application and Language Proficiency

Illustrated in Table 4.3 is the result of the test of the relationship between cooperative learning application and language proficiency. The result shows that the overall values reveal a positive and significant relationship between language proficiency and cooperative learning application.

Table 4.3  
Correlation between Cooperative Learning Application and Language Proficiency

<table>
<thead>
<tr>
<th>Language Proficiency</th>
<th>Cooperative Learning Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spoken Tasks</td>
<td>.363* (.000)</td>
</tr>
<tr>
<td>Comprehension</td>
<td>.357* (.000)</td>
</tr>
<tr>
<td>Interaction Strategies</td>
<td>.330* (.000)</td>
</tr>
<tr>
<td>Qualities of Spoken Performance</td>
<td>.371* (.000)</td>
</tr>
<tr>
<td>Writing Skills</td>
<td>.336* (.000)</td>
</tr>
<tr>
<td>Total</td>
<td>.408* (.000)</td>
</tr>
</tbody>
</table>
The overall result reflects that cooperative learning application is positively correlated with language proficiency since the overall r-value is .408 with a p-value < .05, hence rejecting the null hypothesis. Hence, there is a positive association between the two variables.

Mediation Analysis of the Three Variables
PARTIAL MEDIATION (WITH SIGN UNCHANGED)

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLA &lt;--- SMU</td>
<td>.316</td>
<td>.044</td>
<td>7.251</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>LP &lt;--- SMU</td>
<td>.237</td>
<td>.050</td>
<td>4.715</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>LP &lt;--- CLA</td>
<td>.354</td>
<td>.059</td>
<td>5.987</td>
<td>***</td>
<td></td>
</tr>
</tbody>
</table>

\[ X = \text{Social Media Usage} \]
\[ Y = \text{Language Proficiency} \]
\[ M = \text{Cooperative Learning Application} \]

RESULTS
The results of Path Analysis demonstrate that the paths SMU (X) to CLA (M); CLA (M) to LP (Y); and SMU (X) to LP (Y) were all significant with the sign unchanged, implying that CLA mediates the interaction between SMU and LP to some extent. Figure 3 illustrates that for every unit increase in Social Media Usage, a 0.32 unit rise in M is seen (CLA). Also, for every unit increase in Cooperative Learning Application, there is a 0.35 corresponding increase in Language Proficiency.

Chapter 4
DISCUSSION
Contained in this chapter is the discussion on the data gathered on cooperative learning application, social media usage, and language proficiency.

Social Media Usage
The high level of social media usage of students is due to the high rating given by the respondents on habit, knowledge sharing, and obligation. The students are manifesting high social media usage because it is widely used nowadays, most especially Facebook. Likewise, students believe that helping the Facebook community to accumulate or enrich knowledge is part of being a members of the group.

Language Proficiency
There is a high level of language proficiency since the students obtained a high rating on spoken tasks, comprehension, interaction strategies, writing skills, and qualities of spoken performance. Students are demonstrating
language proficiency in order to meet the increased demand for English language study.

Cooperative Learning Application

The high level of cooperative learning application revealed that students view cooperative learning application positively as a helpful strategy in learning since they showed a high rating on positive interdependence, interaction, social skills, group reflection, heterogeneity, assessment, and tutoring. These factors help them develop their language since it is parallel with the study of Kagan, that positive learning environment leads to higher academic accomplishment for all members of the group, as well as the development of crucial social skills, improved communicative ability, and a positive model for lifetime learning.

Significant Relationship between Social Media Usage and Language Proficiency

The test of the relationship between social media usage and language proficiency revealed a significant relationship between social media usage and language proficiency. This implies that the students’ social media usage is correlated to language proficiency. In other words, the increase of social media usage would also likely increase their language proficiency. Furthermore, the result of this study confirms the contention of Krashen, that people pick up a language through being exposed to it or by reading materials about it.

Significant Relationship between Social Media Usage and Cooperative Learning Application

The test of the relationship between students’ social media usage and cooperative learning application shows that there is a positive and significant relationship between students’ social media usage and cooperative learning applications. This means that the increase in students’ social media usage would also likely increase cooperative learning application. This is similar to the result of the study of Shoshani and Braun which claims that social media usage encourages cooperative learning and eventually, creative learning.

Significant Relationship between Cooperative Learning Application and Language Proficiency

The test of the relationship between cooperative learning application and language proficiency revealed a positive and significant relationship between the indicators of language proficiency. This means that the increase in students’ cooperative learning application would also likely increase language proficiency. This is congruent with what the study of Johnson et al. claimed, that to be a scholars worldwide and at home there has to be an efficient teaching strategy in foreign and second language instruction.

The Mediating Effect of Cooperative Learning Application

The mediation analysis reveals that cooperative learning applications partially mediate the relationship between social media usage and language proficiency. The partial mediation may not totally claim that students’ cooperative learning application is the very reason why and how students’ social media usage can influence their language proficiency. This indicates that students’ cooperative learning applications can partly explain how social media usage can influence their language proficiency.

CONCLUSION

As can be gleaned in the findings of this study, conclusions are drawn in this section. The findings of this study confirm the assumptions about the mediating effect of the students’ cooperative learning application on the relationship between social media usage and language proficiency. This was confirmed by the theory of Krashen that students learn the language by being exposed to it or by reading it, which students nowadays are using different social media platforms. When a student has a lot of intelligible input that could be coming from different social media, he or she is more likely to learn and produce the language appropriately. Given the findings of this study, Filipinos must be inundated with a substantial amount of information through various channels, such as social media, where English is frequently used.

Recommendations

A number of recommendations are offered based on the foregoing finding and conclusions. Since there is a high level of use of social media, a high level of application for cooperative learning, and a high level of language proficiency, it is suggested that students maintain or even improve for better language learning outcomes. Furthermore, to improve the level of application for cooperative learning, the use of social media and language proficiency, the school may undertake further training courses and seminars in collaboration with the Department of Education to help improve teachers and students’ use of the application for cooperative learning and social media as tools for language proficiency.
STUDY OF EPIDEMIOLOGICAL FACTORS ASSOCIATED WITH THE OCCURRENCE OF DIABETES MELLITUS DISEASE - TEACHING HOSPITAL (DIABETIC CENTER) GADARIF STATE / EASTERN OF SUDAN -2019

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2Department of Public Health Care - Ministry of Health – Gadarif State - Sudan.
3Faculty of medicine – Gezira University

ABSTRACT
This descriptive study was conducted at teaching hospital (Diabetic Center) Gadarif State / Eastern of Sudan with an aim to study the Diabetes Mellitus (DM) and associated epidemiological factors 2019, the sample size was 370 patients according to Richard geiger Formula, the data were collected by using the following methods, observation, interview, structure questionnaire which distributed for each patient infected with DM disease, the data were analyzed manually using Excel sheets, results depicted as tables and figures. The main result in this study showed that (63%) of the targets Resident in urban area, also reported (6%) were smoking, (12%) stopped and (82%) were not smoking, While (0.3%) were taking alcohol, (5.4%) stopped and (94.3%) not, likewise that it concluded (38% male, 30% female) were normal waist circumference and (62% male, 70% female) were abnormal (less & more) waist circumference. The important recommendation in this study that Raising detection rate for DM disease in Gadarif state by Strengthen of referral system and Activation of mobile clinics and teams investigation, Providing of DM center with more medical equipment’s, Raising health awareness for patients and community with regard to DM disease.

KEYWORDS: descriptive study, Eastern of Sudan, epidemiological factors, Diabetes Mellitus.

1. INTRODUCTION
Diabetes is a chronic disease that occurs when the pancreas does not produce enough insulin (a hormone that regulates blood sugar) or alternatively, when the body cannot effectively use the insulin it produces.
The classification of diabetes was originally limited to only two categories called:
Type 1 diabetes is characterized by a lack of insulin production.
Type 2 diabetes results from the body’s ineffective use of insulin.

The metabolic abnormalities of diabetes result from inadequate insulin action on target tissues, due to deficient insulin secretion or insensitivity to insulin action, or a combination of both. The signs and symptoms of diabetes are disregarded by many because of the chronic progression of the disease. People do not consider this as a serious problem because unlike many other diseases the consequences of hyperglycaemia are not manifested immediately. People are not aware that damage can start several years before symptoms become noticeable. One such study is DiPiS(Diabetes Prediction in Skåne), which is examining a total of about 10 000 pregnancies expected every year in the Skåne (Scania) region of Sweden that has 1.1 million inhabitants. Diabetes mellitus should not be managed based on symptoms alone. Glycaemic goals are based on evidence of what glucose levels constitute a risk for developing complications. It is, however, inappropriate to aggressively approach target glucose levels when it may adversely affect the patient.
The goal of treatment of diabetes mellitus is to control blood glucose and ultimately prevent long-term complications, as shown by major diabetes studies like the United Kingdom Prospective Diabetes Study group and Diabetes Control and Complications Trial (6). The backbone of diabetes management is proper diet and regular exercise, which have to be individualized (7,8).

Before starting any exercise program, the health provider should do a thorough physical examination to find out whether or not it is safe for the patient to exercise (9). In the Eastern Mediterranean Region, some studies have reported that the occurrence of clinical events related to coronary artery disease are four times higher in patients with diabetes (10,11). Many factors that predispose non-diabetic individuals to atherosclerosis are also associated with atherosclerosis in people with diabetes.

These factors include smoking, hypertension and hypercholesterolemia (12).

2. OBJECTIVE OF THE STUDY
The study aimed to determine epidemiological factors associated with the occurrence of Diabetes mellitus such as (nutrition, genetics) status.

3. METHODOLOGY
3-1 Study Design
This study is a descriptive facility-based/cross-sectional study.

3-2 Study Area:
3-2-1 Gadarif State
Gedarif state cover 75,000 Km2 and lies between latitude 14-16 north and 33-36 E longitude. It is apart of eastern region.

3-2-2 Gadarif Diabetic Center
- GDS west to gadarif teaching hospital and blood bank near to railway police department.
- It provide health service to large number of DM patient in Gadarif State and nearby states.
- The center building composed of one flower divided to 2 clinics, lab, nutrition department, psychological department, counseling unit, operation hall, pharmacy, foot care office, patients waiting hall, financial issues office, counter hall administration office and 8 path rooms.
- The staff cadres of the center is about (67) person divided to: Diabetologist, Director general, Medical Director, Administrative manager, doctors, lab technician, nurses, nutritionist, Pharmacist, Cleaning worker, statistical,…
- The center open daily from 7am to 2pm except Friday.
- The daily number of ranging between 200 – 250 in all department
- So The monthly number of patient who visit the center almost about 5200-6500.

3-3 Study Population
- The population of Gadarif state is about (2108468) different ethnic groups, most of them are farmers and the others are working in grazing and commerce.
- Most of the population of 90% is Muslims & about 10% of Christians.

3-4 Sampling and Sample Size:

\[
N = \frac{\left(\frac{Z}{d}\right)^2 \times (0.50)^2}{1 + \frac{1}{n} \left(\left(\frac{Z}{d}\right)^2 \times (0.50)^2 - 1\right)}
\]

(Richard geiger)

Where:
N = Sample Size
Z = the value of the standard normal variable corresponding to % level of significance (1.96).
D = marginal error (0.05)

3-5 Data collection technique:
3-5-1 structure questionnaire which distributed for each patient infected with DM
3-5-2 Interview with Diabetologist and deputy general manager.

3-6 Data Analysis:
Data was analysis by using computer software (the manual – Excel sheet ) and result table and figures.

3-7 Ethical Consideration
- Permission was taken from Gadarif ministry of health and social development.
  _Strict confidentiality regarding patients information ,such as name, full residential address, was considered.

4. RESULTS

<table>
<thead>
<tr>
<th>Residence</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>232</td>
<td>63</td>
</tr>
<tr>
<td>Rural area</td>
<td>138</td>
<td>37</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>370</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table (1): distribution of cases according to the Residence (n=370)

![Economical status “ in month”](Image)

Figure(1): Percent of cases according to the Economic status per month (n=370)

<table>
<thead>
<tr>
<th>get Diabetes Mellitus</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inherited</td>
<td>166</td>
<td>45</td>
</tr>
<tr>
<td>During pregnancy</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Inherited and During pregnancy</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>I don't know</td>
<td>161</td>
<td>43</td>
</tr>
<tr>
<td>Others</td>
<td>23</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>370</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table (2): distribution of cases according to the get Diabetes Mellitus (n=370):
Table (3): distribution of cases according to the Waist circumference in centimeters (n=370):

<table>
<thead>
<tr>
<th>Gender</th>
<th>&gt; normal</th>
<th>normal</th>
<th>&lt; normal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>34</td>
<td>40</td>
<td>31</td>
<td>105</td>
</tr>
<tr>
<td>Female</td>
<td>145</td>
<td>81</td>
<td>39</td>
<td>265</td>
</tr>
<tr>
<td>Total</td>
<td>179</td>
<td>121</td>
<td>70</td>
<td>370</td>
</tr>
</tbody>
</table>

Figure (2): Percent of cases according to Smoking and Alcohol abuser (n=370):

Figure (3): Percent of cases according to any diseases before get DM (n=370):

Table (4): distribution of cases according to the psychological problems (n=370):

<table>
<thead>
<tr>
<th>psychological problems</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>92</td>
<td>25</td>
</tr>
<tr>
<td>No</td>
<td>278</td>
<td>75</td>
</tr>
<tr>
<td>Total</td>
<td>370</td>
<td>100</td>
</tr>
</tbody>
</table>
Table (5): distribution of cases according to the any chronic diseases (n=370):

<table>
<thead>
<tr>
<th>any chronic diseases</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>124</td>
<td>34</td>
</tr>
<tr>
<td>No</td>
<td>246</td>
<td>66</td>
</tr>
<tr>
<td>Total</td>
<td>370</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure (4): Percent of cases according to have chronic diseases (n=124):

if have a chronic diseases

- Hypertension
- Cardiac diseases
- Renal failure
- Others

5. DISCUSSION

This Study was conducted at teaching hospital (Diabetic Center) Gadarif State / Eastern of Sudan in 2019. The study aimed to identify epidemiological factors of diabetic mellitus (DM) patients.

The study indicated that (63%) of the targets Resident in urban area, while (37%) Resident in rural area. Zimmet P and others 2001\(^{(13)}\) They said: (The diabetes epidemic has been attributed to urbanization and environmental transition leading to sedentary behavior and overnutrition).

The study confirmed about (54%) of the targets have low income That means these patients living below poverty line (according to World Bank about 1.5 USD/day)

The study confirmed (45%) get D.M with inherited , (4%) were during pregnant , (2%) inherited and during pregnant , (43%) I don’t know and (6%) others , While previous study conducted in University Hospital, in Montes Claros, state of Minas Gerais, Brazil /2015, by researchers (Ellen Fernandes FIAVio Silva\(^{(14)}\)) has indicated (55.8%) were have family history.

The study reported that (38% male, 30% female) were normal waist circumference and (62% male, 70% female) were abnormal (less & more) waist circumference.

The study reported (6%) were smoking, (12%) stopped and (82%) were not smoking, While (0.3%) were taking alcohol, (5.4%) stopped and (94.3%) not.

Compare with previous study conducted in Kumasi/ Ghana-2012, by researchers (Agbogli H. K and others\(^{(15)}\)) has indicated to: (34.5%) were smoking, (65.5%) were not smoking, While (4.4%) taking alcohol and (95.6) non.

The study indicated about (25%) were infected with chronic diseases, While (75%) were not infected.

6. CONCLUSION

The present study reveals that various demographic, socioeconomic and genetic factors play a vital role in the etiology of diabetes mellitus disease.
Most important factor found were young age group, female gender, low socioeconomic status, low education standard and low physical activities exposure to DM infected patients, obesity and co-existing immune-compromised disease.

Hence this study provides useful information about the epidemiological factors for DM disease that can used to control disease by preventing these potential risk factors in population and timely diagnosis and providing treatment for DM.

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ABSTRACT

In this article, the model for the formation of constructive psychological protection, conditions of formation of psychological prevention and overcoming destructive methods of protection, different psychological theories, strategies of formation of constructive psychological protection are included in the system of world perceptions overcoming, certain alters in the level of consciousness, removing the typical boundaries of thinking for mankind, and gaining additional opportunities for creativity are widely included.

KEYWORDS: Constructive defense, psychological defense, the model of formation, destructive defense, psychological theories, cognitive component model.

The model of formation for a constructive psychological prevention is based on the theoretical analysis of the research problem as well as the definition of psychological and pedagogical circumstances for the formation of constructive psychological protection of the person.

The conditions for the formation of constructive psychological defense and avoiding destructive methods of defense have been discussed in distinctive psychological theories. The idea of overcoming psychological defense mechanisms was first proposed by Z formed by Freud. One of the main psychotherapeutic roles of psychoanalysis is the consciousness of the patient about the use of psychological defense mechanisms, the effect of which is fully eliminated (12).

An active position in the relationship is occupied by psychotherapy, which reverses the regressed by squeezing the mind and eliminates the destructive application of psychological protection. In the humanistic psychology, protection is considered as a method of incongruent behavior, the formation of constructive defense is assumed to be carried out through methods of obtaining congruence.

K. Rodgers initially took responsibility for tackling such as, believing that the primary goal of psychotherapeutic practice was to create conditions for self-acceptance and self-actualization of the client’s personality. (13) The main task of the therapist is to reduce the client’s safety and create an incident in which they can objectively see their true feelings, thoughts, and contradictions. By the help of a therapist, the client receives, comprehends, processes, and assimilates the experience specific to “his or her inner life”. Constructive methods of defense are shaped as a consequence of self-acceptance, analysis of the situation, besides, work on oneself. Gestalt therapy is achieved by overcoming destructive psychological protection, using awareness techniques, and moving the patient toward maturity. The condition for maturity is to perceive the hierarchy of their requirements, to establish an external and internal balance.

L.I.Wasserman and co-authors point out that there are currently two approaches in psychotherapy that involve various ways of working with psychological defense mechanisms. The first approach of psychological protection in psychotherapy presents the optimization of methodological defense mechanisms, which are considered as the normative mechanism of the psyche. Correcting a bad condition and behavior with such an approach involves emphasizing, improving, or strengthening adequate defense mechanisms (steroid-regression, psychoasthenic-rationalization, etc.) for that individual. For this crucial reason, the structure of one’s own psychological defense is not comprehended and possible ways of reshaping it are not considered. This variant of psychotherapy is efficacious in working with sick people. The second approach is to help the individual formulate a constructive coping strategy in complex life circumstances based on an understanding of the
psychological mechanisms applied. This version of the psycho-
correction work is used to work with healthy people.

R.M.Granovskaya, In the vast majority of her scientific
works, I.M. Nikolskaya explores the pathological effects of
protection, which mask both the hardships of life and are less
powerful along with less well known about their activities. The
authors suggest the following strategies of shaping constructive
psychological defense: behavioral alteration, emotional stability,
and increased self-consciousness. (14)

G.V.Grachev recommends the following stages in the
process of psychological self-defense of an individual in the
context of manipulative affect:

- Timely determination of the fact of manipulative
affect and its direction;
- Predicting the probable purpose and outcomes of the
impact (changes in behavior, attitudes, attitudes);
- To form an adequate response to their actions in a
situation of manipulative influence.

The above allows to create a model for the formation of
constructive psychological protection of future psychologists.
The methodological basis for modeling is a multi-level approach
tory. Any improvement is a forward-looking alteration of
material and ideological objects. Determining the quantitative
assessment of the development process leads to a new
qualitative state. The criteria for determining the level of novelty
are: elements belonging to classes of different complexity, the
specificity of the laws of each level, the higher laws and systems
that are subject to lower level laws and systems; the origin of
each subsequent level system from the previous basic structures.
(4)

The mechanism of transition from level to level: the
complexity of the structure, the simultaneous improvement of
the elements and the structure. The sample contains the features
identified above. Components involve structured knowledge and
skills. Basically, the model is ideal as well as descriptive-
symbolic. It is a determinant in task modeling and a reliable
approximate part for the level of accuracy. It is relatively
complete in terms of abstracting the features of the original. The
methodological basis for determining the levels of this model is
theoretical knowledge.

The two principal fundamental forms of scientific
knowledge, or the components and levels of scientific
knowledge: empirical (based on observational and experimental
data) and theoretically objective reality, concentrate on a
comprehensive knowledge of its necessary connections and
relationships. These two types are interrelated in the complete
structure of scientific knowledge. Empirical results define new
tasks for theoretical knowledge, and theoretical knowledge
identifies and directs empirical results. Empirical results rise in
their enhancement from the spontaneous phase of observation to
the phase of a newly given experiment. These methodological
positions made it possible to identify three levels in the proposed
model of the formation of constructive psychological defense:
spontaneous, empirical and theoretical:

The degree of spontaneity is characterized by the
spontaneous functioning of the system of psychological
protection of the individual.

The empirical level is characterized by a person’s
reflexive self-control over their own behavior, an understanding
of the personal characteristics that are manifested.

The theoretical level represents the activity of the
psychological prevention system, taking into account the
consciousness of personal characteristics, as well as the system
of knowledge and skills about the psychological protection
system and its possible manifestations.

The cognitive component allows the model to function
at a theoretical level defines the resources of human constructive
activity. The component includes a system of knowledge about
himself and the psychological protection of the individual. The
transition from one level of the model to another results from
quantitative and qualitative changes in the model elements.

We demonstrate the components of the model
according to the activity levels.

The spontaneous level of the model:

1.1. Emotional
1.2. Behavioral

The spontaneous degree of the model of formation of
constructive psychological protection. The level of spontaneity
is characterized by elements: emotional (1.1.) And behavioral
(1.2.). The emotional element of the model (1.1.) Is
characterized by a system of psychological protection of the
individual in the model, which is characterized by unconscious
use at the level of spontaneous activity, high general tension
(more than 50%) using primitive mechanisms: "denial",
"migration", "place" replacement "," regression ".

At the spontaneous level, any try to resolve the
situation is manifested in the prevention itself.

The “push” strategy permits you to temporarily
alleviate tension by switching to a certain type of activity,
imagining, which significantly weakens the resolution of the
problem situation.

Therefore, at the spontaneous level of model activity,
there are no contradictions that activate the system of
psychological protection of the individual, besides, their
importance is artificially reduced, which does not allow
constructive action.

The next level of model activity is empirical, and we
discuss its specific features.

The empirical level of the model:

2.1 Reflexive
2.2. Emotional
2.3. Behavioral

The empirical level of the model of formation of
constructive psychological protection
The transition to the empirical level of the spontaneous model is introduced by the introduction of a condition: awareness of personal characteristics (involving psychological protection). These psychological and pedagogical conditions are realized in the diagnostic and theoretical blocks of the special course "Problems of constructive psychological protection of the person".

Element 2.1. this is partly portrayed by ‘projection’, ‘rationalization’ protective mechanisms manifested at the level of consciousness, which allow for partial elimination of difficulties in activity and communication. The overall intensity of psychological defense mechanisms is moderate (42-50%).

The “projection” mechanism is manifested in the transfer of responsibility for events to other individuals, but the semantic processing of the content of the situation is determined. The “rationalization” mechanism permits the student to explain the causes and consequences of the current situation through logical operations.

Element 2.2. using an individual’s “problem-solving” imitating behavioral strategy allows the individual to solve a problem situation, using a strategy that uses the maximum amount of its resources to achieve the goal.

Element 2.3. shows a person’s ability to recognize and evaluate inner mental actions and states

Element 2.4. Features of self-awareness in the studied model are characterized by: self-esteem, self-control activities.

Self-assessment supplies a link between various attempts to overcome difficulties. Adequately self-respecting students do not interpret every event as a stressful situation due to the effective functioning of psychological protection, by knowing their abilities and opportunities to implement them. Students with low levels of self-esteem have high levels of anxiety under the affect of threats, feeling that they are unable to resist the threat. The psychological defense system is ineffective for them. In the model under study, self-monitoring is designed to analyze as well as regulate the manifestations of the psychological defense mechanisms used. The activity indicator evaluates the intensity of the efforts made to solve the problem situation. Thus, the empirical level of model activity is determined by a person’s comprehension of actions and behavior. This level may be sufficient for individuals who are not involved in professional activities when communicating with people. The transition from the empirical to the theoretical level of the model is achieved through the introduction of conditions: an understanding of personal characteristics (including psychological protection), the acquisition of a system of knowledge about the activities of psychological protection. The established psychological and pedagogical conditions are realized in diagnostic, theoretical and instrumental blocks of the special course "Problems of constructive psychological protection of the person".

The theoretical level of the model

3.1. Emotional
3.2. Behavioral
3.3. Reflexive
3.4. Cognitive

Indicator 3. The theoretical level of the model for the formation of constructive psychological protection.

Consider the performance of a theoretical-level model represented by elements: emotional (3.1.), Behavioral (3.2.), Reflexive (3.3.), And cognitive (3.4.).

Element 3.1. characterized by mature mechanisms of psychological protection: “compensation” and “hyper-compensation”. The use of mechanisms is consciously recognized by the individual, allowing them to justify the reasons for actions to resolve conflicts.

The overall tension of the protection mechanisms is low (less than 40%).

The functioning of the psychological protection mechanism of “competence” allows the student to overcome difficulties by realizing their abilities in similar activities.

The “hyper-compensation” mechanism restores and relies on the learner’s motivational system in figuring out problems.

Element 3.2. is defined by a “social support engine” strategy.

The implementation of the “Social Support Expectation” strategy is accompanied by a search to discuss and activate the conflict condition in the process of solving its problems in the surrounding social environment and analyze it based on appropriate opportunities.

Element 3.3. defines awareness of personal characteristics as a combination of advantages and disadvantages based on self-assessment and self-control.

Element 3.4. the system of knowledge and skills about the individual, the system of psychological protection of the individual, characterized by efficient also constructive ways of its implementation. The level of theoretical activity of the model is characterized by the use of psychological protection, taking into account the awareness of individual characteristics, and the system of knowledge and skills about the system of psychological protection and its possible manifestations. This level of modeling is necessary to enhance the constructive abilities of future psychologists. Therefore, the model for the formation of constructive psychological protection of future psychologists is characterized by three levels of its activity: spontaneous, empirical and theoretical:

The degree of spontaneity is characterized by the spontaneous functioning of the system of psychological protection of the individual.

The transition to the empirical level of the spontaneous model takes place when an appropriate condition is imposed on the individual: awareness of personality traits (including psychological protection).(16)
Psychological protection of the individual is provided by defense mechanisms and often behavioral strategies (actions aimed at solving individual problems). Together, they represent interrelated forms of adaptation processes and an individual’s response to stressful situations.(17)

Psychological protection is constructive if it is characterized by the following characteristics: adherence to social values, norms and rules; its activity is based on the processes of thinking, particularly envisioning; its activities are carried out consciously, controlled by reflection; constructive psychological protection involves a much broader usage of defensive defense mechanisms; ensures external socio-psychological adaptation and satisfactory resolution of the pivotal functions of the individual; constructive psychological protection in interpersonal relationships ensures the progressive improvement and socialization of the individual. During the preparatory stages of the psychologist showed the need to take into account not only the level of professional knowledge, skills and abilities, but also the formation of constructive methods of psychological protection. Its activities allow the subject of professional activity to find an optimal way out of the difficulties of life. Constructive psychological protection required three levels of modeling:

At the spontaneous level, the spontaneous functioning of the system of psychological protection of the individual is observed. The transition from the spontaneous level of the model to the empirical level is achieved by introducing a condition: the psychologist’s comprehension of personality traits (including psychological protection). At the empirical level, an individual’s reflexive self-control over his or her own actions as well as behaviors and awareness of the individual characteristics manifested takes place.

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CULTURAL COMPETENCE AS A FACTOR OF SUCCESSFUL PROFESSIONAL ACTIVITIES

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ABSTRACT
Cultural (intercultural) competence is the ability of a person to effectively interact with people representing different cultures. Cultural competence includes four components: understanding one’s own cultural worldview; attitude to cultural differences; knowledge of different cultural practices and worldviews; intercultural skills. The article examines cultural competence as a component of the general professional competence of an individual.

KEY WORDS: culture, specialist, professional culture, cultural competence.

INTRODUCTION
It is known that an important characteristic of a specialist is a certain set of professional knowledge and skills, which for representatives of different types of activity may not coincide in composition, structure, and the degree of expression of certain qualities. Accordingly, the role of education in the modern world is not only to give young people the knowledge for successful professional activities, but also to ensure social adaptation in a multicultural environment, that is, to form their multicultural mentality. Therefore, today we can talk about the cultural competence of a specialist as a mandatory professionally important quality that ensures the effectiveness and success of the activity and the ability of the individual [1].

People who are successful in their community often find it difficult to understand members of a different culture and are just as difficult to be accepted by them. Being in a different cultural environment, they may misinterpret the actions, gestures and speech behavior of their interlocutors. And if communication with representatives of a different culture is part of a person’s professional activity, then a misunderstanding will lead to ineffective cooperation. This is especially true of business communication in Asia and the East. So, if in European business etiquette it is customary to negotiate or solve problems that have arisen during lunch or dinner in a restaurant, then in China, for example, serious negotiations are not conducted in a restaurant, but there may be acquaintance of potential partners, clarification of intentions, etc.

METHODS
We use the method of generalization and analysis in our scientific research.

DISCUSSION
It should also be remembered that for the Chinese, the rule of good manners when meeting with an elder in age or position is a handshake with both hands, the same handshake of an equal partner will be a compliment for him. The business card of the person with whom the acquaintance took place must be accepted with both hands, as well as giving your own. The received business card should be carefully read carefully. The presence of lawyers at the negotiating table is regarded by the Chinese as a sign of mistrust. Therefore, your lawyer during negotiations should be kept in the background. Approaching with you to the entrance to the room, the Chinese will definitely offer you to go first. You must in return invite him to do the same, and only after he refuses, you can move forward. Sometimes during negotiations, the Chinese can afford to show controlled anger in order to test the nerves and composure of partners, implying that foreigners will be afraid of losing the contract and make concessions. When meeting with Chinese partners, one should avoid a firm handshake and an open direct look, which they consider an attempt to intimidate and even as a sign of direct hostility. During business negotiations, it is not customary to contact through touching, hugging, patting on the back, etc. [2]

According to K. Early and E. Mosakowski [ 3], cultural competence manifests itself where emotional intelligence is powerless. A person with a well-developed emotional intelligence understands what all people have in common and what distinguishes each of us from the other. A
culturally competent person is able to determine which properties of a particular person are characteristic of all people, which are only for him, and which are neither universal nor unique. Therefore, he adapts quite easily to the customs and traditions of the new environment: he develops the habit of observing and consciously adjusting to the new environment. The fact that cultural tradition has a stronger influence on our perception than scientific description is clearly illustrated by the now classic example of a grasshopper advertising poster with the caption: “In the USA, a pest; in China, a pet; in Thailand, a snack.”

Nevertheless, many researchers believe that cultural competence, that is, the correct perception, understanding, evaluation of a different culture and traditions, is one of those personality characteristics that can be developed [4,5,6]. Specially developed programs for improving business relations of business partners, taking into account the characteristics of a particular region, determine the strengths and weaknesses of the participants, then a training is selected that is aimed at increasing the level of cultural competence.

K. Earley and E. Mosakowski identify the following components in cultural competence: cognitive, physical, and emotional-motivational.

To achieve a high level of cognitive competence, it is not enough just to study (on your own or at special trainings) the traditions, customs, taboos of another culture. You should develop your own learning strategy: for example, develop logical thinking.

The physical component of cultural competence assumes that your actions, manners of behavior show respect for the traditions and etiquette of another culture. The ability to perceive and adequately respond to gestures characteristic of a particular culture indicates a high level of the physical component of cultural competence.

The emotional-motivational component assumes that a purposeless, unmotivated person, having met with misunderstanding or hostility from representatives of a different culture, easily retreats and does not try to win their trust.

For the development of the motivational component, it is very effective to perform situational exercises, during which a person gains experience that allows him to move on to more complex tasks. Discussion, brainstorming, role-playing games create a natural speech situation; learn to show tact; sincerely express their feelings, including negative ones, without losing the positive acceptance of the other; choose intonation, gestures and facial expressions adequately to your feelings, situation; listen empathically to the interlocutor; correct their behavior in the process of verbal communication; show improvisation; accurately verbalize their own emotions, feelings and experiences; be able to understand the intentions in statements and build a positively directed speech.

A person gains self-confidence by solving difficult problems and finding a way out of difficult situations. Confidence is a very powerful element of cultural competence and can be strengthened by following the example of those who successfully operate in the same environment.

There are several types of cultural competence: a provincial, finding himself in an unusual environment, cannot adapt to it; the analyst methodically masters the rules and customs of a different culture, the intuitive relies on the first impression, which rarely deceives him, but in a difficult situation can be confused; the ambassador is able to convincingly show that he is at home in this cultural environment, although he may not know much about its rules and traditions, and therefore, risks underestimating cultural differences; the imitator is able to adopt the style of conversation and communication, controls his behavior well, but does not always notice the details that are essential for understanding the situation; a chameleon has a high level of all three components of cultural competence, knows how to get used to the situation and see it from the outside. Experience shows that it is easier for a person with a high level of cultural competence (innate or acquired) to act in new conditions, make the right decisions and become successful in their professional activities [7].

The main principle of the formation of professional and cultural competence of students is the integrity of the process based on the unity of the content of forms, methods of the educational process and the level of interaction between teachers and students. The professional training of specialists does not give the desired result if the blocks and disciplines of the curriculum of the specialty are not united by the same principles of interaction of all disciplines [8].

Modern vocational education should be flexible, allowing you to quickly master new courses based on the formed basic professional competencies. Thus, the conceptual foundations for the formation of professional and cultural competence are based on the following theoretical principles:

- interdisciplinary in the study of the theoretical and practical foundations of the specialty;
- integration of the studied foundations of sciences with the practical social experience of the student;
- continuity and integrity of the process of formation of special knowledge and education of the individual;
- personal approach to specialist training;
- continuity with established traditions in the formation of the structure and content of vocational education;
- cultural conformity and practice orientation of the content of professional and cultural competence;
- flexibility and transparency of the process of education and upbringing.

CONCLUSION

The implementation of the conceptual foundations for the formation of professional and cultural competence of students is a chain of interrelated activities that ensure the quality of professional and cultural competence at all stages of specialist training - from diagnosing the condition in the first years to assessing the quality of graduate training.

The process of step-by-step formation of professional and cultural competence includes designing, organizing the implementation of the project and monitoring the results. The process is effective if, after the end of each course, the
presented scheme turns into an “upward spiral”, gradually providing the necessary level of training for graduates.

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ABSTRACT
This article comprehensively studies the system and problems of applying legal regulation measures in developed foreign countries, one of the obvious threats to information and psychological security - the phenomenon of cyberbullying. Furthermore, it highlights the study of the state of modern legislation, measures, and problems of legal impact in developed countries in relation to cyberbullying. In particular, the legislative norms and the process of their application in the United States, Canada, Australia, and some countries in Europe were analyzed; based on the results of the analysis, including foreign experience, proposals and comments were made taking into account national interests in our country.

KEYWORDS: cyberbullying, cyberharassment, cyberstalking.

INTRODUCTION
Cyberbullying, sometimes called online harassment or abuse, refers to behaviors where a person repeatedly causes harm to others using electronic devices and technologies. The modern abundance of devices with internet access makes it easier for cyberbullies to remain anonymous and create multiple accounts with different identities, giving them the freedom to attack multiple social media users simultaneously, often without obstruction.

There are many online platforms in which bullying may take place including e-mail, blogs, social networking websites (eg, Facebook and Twitter), online games, and text messaging. This phenomenon has come to be known as cyberbullying, electronic aggression, or online harassment. Several definitions of cyberbullying exist; most are variations on accepted definitions for traditional bullying. One commonly used definition of cyberbullying is “an aggressive, intentional act or behavior that is carried out by a group or an individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself.” Estimates of the number of youth who experience cyberbullying vary, ranging from 10% to 40%, depending on the age group and how cyberbullying is defined.

Pursuant to the policy pursued by the President of the Republic of Uzbekistan, in accordance with paragraph 5.1 of the Action Strategy for the five priority areas of development of the Republic of Uzbekistan for 2017-2021, there is a need to develop a mechanism to protect against information and psychological threats. It is expedient to study the experience. The vast majority of developed countries in the world have adopted legal and regulatory documents on the protection of cyberbullying, electronic regulation of human harassment through electronic means of communication.

LITERATURE REVIEW
Scientifically, the Cyberbullying problem was one of the first to be studied in the United States in 1997. Many foreign psychologists, such as L. Robinson, M. Sonnermose, K. Müller, Kowalski, A. Pellegrini, M. Bartini, have scientifically covered the phenomenon of cyberbullying.

Today, representatives of the Russian scientific community are E.A.Bengina, I.V. Volkova, S.A.Gristhaeva, E.A.Kozonina, A.Baranov. Psychologists such as E.A. Makarova, E.L.Makarova, E.A.Makhrina, A.A.Baranov, S.V.Rojina, A.A.Bochaver, K.D. Kholomov presented the results of scientific research on this topic are announcing. The U.S. experience in cybercrime laws, and in the fight against them in particular, can be highlighted in the first place. In particular, over the years, the first steps have been taken to adequately protect individuals from cyber attacks on the Internet and to legally regulate this process. In particular, the legal regulation of the current situation after tragic, unfortunate events, like suicide as a result of cyberbullying in adolescents has been repeatedly called for. To date, the U.S. federal administration system and state legislation differ on cyberbullying legislation.

In particular, a bill was drafted at the federal level under the name of 13-year-old student Megan Maer in response to her tragic suicide on April 2, 2019, after a cyberbullying incident.
The law is called the Megan Maer Cyber Attack Prevention Act. This bill was planned and intended to be published as an extension of Article 18 of the United States Code [2]. The bill provides for a fine of up to two years in prison if cyberbullying violations are detected. The bill has been widely discussed in Congress but not adopted at the federal level. The main reason for this is that the first amendment to the U.S. Constitution included an article on freedom of speech.

RESEARCH METHODOLOGY

U.S. law requires that a distinction be made between the various terms “Cyberbullying”, “Electronic Harassment”, “Cyberharassment” and “Cyberstalking” and that these definitions are strictly applied, they will be used under different legal rules. As a rule, the law of cyberbullying is one of the laws that require clarity. In practice, however, this conceptual distinction is often confused or used as a synonym. Nevertheless, the following classifications can be found.

The term “cybersecurity” or “cyberstalking” refers primarily to the harassment, bullying, bullying, and harassment of minors via e-mail or the Internet, and usually attempts to gain the trust of minors through social media, which in turn leads to real sexual activity leads to.

The concept of cybersecurity is also called cyberstalking because it is less intensive. Juveniles - mainly schoolchildren and students, committed by other students or strangers, conflicts have been observed in schools as a result of threats, and teachers are sometimes included in the protection zone. According to sources, special anti-cyberbullying laws have been passed in 19 U.S. states today.

In New Jersey, for example, the Revenge-Porn Laws Act is designed to prevent the distribution of personal photos, movies, nude or sexually explicit images of teenagers without their consent [3].

Currently, only Arkansas, Louisiana, and North Carolina laws criminalize cyberbullying. In North Carolina, cyberbullying is punishable by a fine of $ 500 to $ 1,000 or up to 6 months in prison.

In the U.S., measures to prevent cyberbullying at the government level are primarily aimed at school-wide coverage, in the process of which educational institutions and relevant organizations are forced to take practical measures to prevent cyber attacks.

In particular, New Jersey law provides for the expulsion of a convicted felon for cyberbullying.

At the same time, freedom of speech in the United States is important. In the territorial unit, in the absence of legislation on “Cyberbullying”, the penalty is regulated only on the basis of applicable general legislation, depending on the behavior in a particular individual case.

Canadian law provides for civil and criminal liability for cyberbullying. In particular, the commission of inappropriate behavior on the Internet by a person is described as a criminal offense.

In particular, under section 264 (2) (b) of the Canadian Penal Code, aggression involves, in particular, the direct or indirect repeated contact of one person with another. In cases where communication is widely interpreted, including communication via the Internet, this offense can be punishable by up to 10 years in prison [13,14].

In recent years, the imposition of criminal liability for cyberbullying in Australia has been the subject of widespread debate. According to MP Paul Fletcher, the continuation of sanctions in practice, a system of civil liability, should be developed in consultation with the federal states.

In November 2007, the Weiße Feder - Gemeinsam für Fairness und gegen Gewalt initiative was launched in Austria to prevent violence in general strategic schools and kindergartens [12]. The Federal Ministry of Education, Arts and Culture should provide tools to help students, parents, and teachers prevent and intervene in cyberbullying.

It is also planned to introduce the position of cyberbullying commissioner for the electronic safety of children. Its mission should be to protect and control all social networks, especially youth, from cyberattacks. This serves to reduce the number of cyberbullying victims in the community.

Under a law passed in Australia’s New South Wales Administrative Territorial Unit, cyberbullying is defined as a crime. Criminal liability for cyberbullying applies only when committed against individuals. These regulations also sought to cover all forms of cyberbullying in society.

In 2010, Albania was the first European country to adopt a law on cyberbullying [8]. The law provides for liability for all forms of cyberbullying, even for disseminating false information about a person in order to threaten him.

ANALYSIS AND RESULTS

The results of a comparison of legislation on cyberbullying across the United States, Canada, Australia, and some European countries are presented in the table below.
Table 1.

<table>
<thead>
<tr>
<th>№</th>
<th>State name</th>
<th>Cyberbullying legislation</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the U.S. Federal Administration System</td>
<td>When it comes to cyberbullying legislation, the U.S. federal administration system and state legislation are different</td>
<td>A bill has been drafted at the federal level under the name of 13-year-old student Megan Maer in response to her tragic suicide on April 2, 2019, after a cyberbullying incident. The bill is called the Megan Maer Cyber Attack Prevention Act. The bill has been widely discussed in Congress but not adopted at the federal level. The main reason for this is that the first amendment to the U.S. Constitution included an article on freedom of speech.</td>
</tr>
<tr>
<td>2</td>
<td>At the U.S. state level</td>
<td>New Jersey has a Revenge-Porn Laws Act.</td>
<td>Designed to prevent the distribution of personal photos, movies, nude or sexually explicit photos of teenagers without their permission.</td>
</tr>
<tr>
<td>3</td>
<td>At the U.S. state level</td>
<td>Arkansas, Louisiana, and North Carolina have criminal charges against cyberbullying.</td>
<td>In North Carolina, cyberbullying is punishable by a fine of $ 500 to $ 1,000 or up to 6 months in prison.</td>
</tr>
<tr>
<td>4</td>
<td>Canada</td>
<td>There are civil and criminal penalties for cyberbullying.</td>
<td>Almost all provinces have cyberbullying legislation.</td>
</tr>
<tr>
<td>5</td>
<td>Europe. In Albania</td>
<td>There is a law on cyberbullying</td>
<td>It was first adopted in 2010</td>
</tr>
<tr>
<td>6</td>
<td>In South Korea</td>
<td>There is a law on cyberbullying</td>
<td>Cyberbullying is a crime [1]</td>
</tr>
<tr>
<td>7</td>
<td>Singapore</td>
<td>There is a law on cyberbullying</td>
<td>Approved and adopted in the first reading in Parliament on March 3, 2014</td>
</tr>
<tr>
<td>8</td>
<td>Australia. In the federal system of government</td>
<td>There is no law on cyberbullying</td>
<td>In recent years, the imposition of criminal liability for cyberbullying in Australia has been the subject of widespread debate. According to MP Paul Fletcher, the continuation of sanctions in practice, a system of civil liability, should be developed in consultation with the federal states.</td>
</tr>
<tr>
<td>9</td>
<td>Australia. at the state level</td>
<td>New South Wales has a law criminalizing cyberbullying in schools.</td>
<td>Criminal liability for cyberbullying applies only when committed against individuals. These regulations also sought to cover all forms of cyberbullying in society.</td>
</tr>
<tr>
<td>10</td>
<td>United Kingdom</td>
<td>There is no law on cyberbullying</td>
<td>Instead, one of the following laws may apply in individual cases: 1997 Arrest Act, 1986 Public Order Act, 1988 Malicious Communication Act 2003 Communication Act (SA)</td>
</tr>
<tr>
<td>11</td>
<td>Switzerland</td>
<td>There is no law on cyberbullying</td>
<td>In Switzerland, there are penalties for offenses under the Criminal Code. In addition, in case of personal injury, legal action can be taken under Article 28 of the Civil Code.</td>
</tr>
<tr>
<td>12</td>
<td>Spain</td>
<td>There is no law on cyberbullying</td>
<td>There are penalties under applicable criminal law.</td>
</tr>
<tr>
<td>13</td>
<td>Italy</td>
<td>Until 2013, there was no Cyberbullying Act.</td>
<td>Following the suicide of a 14-year-old girl in cyberbullying in January 2013, appropriate measures against cyberbullying were discussed to end the violence on social media. In January 2014, the Italian Minister of Economic Development presented a draft Code of Ethics against cyber-attacks, which sets out measures to combat cyber-attacks.</td>
</tr>
<tr>
<td>14</td>
<td>France</td>
<td>There is no law on cyberbullying</td>
<td>Articles 222-33-2 of the French Criminal Code define “du harcelement moral”.</td>
</tr>
</tbody>
</table>
CONCLUSION/RECOMMENDATIONS

In conclusion, it should be noted that the issue of imposing legal sanctions against cyberbullying is reflected differently in the national legislation of each state. A special approach to cyberbullying shapes needs the normative legal documents' improvement. These legal norms should not limit people's speech freely in the society. Nevertheless, it ensures the safety of Internet followers, prevent human rights or dignity, protect them from distinctive persecutions, as well as harm the physical or mental health along with professional activities of people within disabilities.

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THE ROLE OF FARMING IN MODERNIZATION OF AGRICULTURE IN UZBEKISTAN

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ABSTRACT

The article analyzes the role and place of farms in the modernization of agriculture in Uzbekistan, the systemic reforms in agriculture, their results using primary sources and scientific literature.

KEYWORDS: Agriculture, agro technology, farming, agriculture, State program, modernization, land, reform.

INTRODUCTION

During the years of independence, large-scale reforms have been carried out in the agriculture of Uzbekistan. The Republican government has tried to make more efficient use of the land, which is the main asset in the network, by handing it over to the real owners. Due to this, the number of farms in the village, the amount of land attached to them has increased from year to year. According to the data, farms in the republic have been established since 1989. Initially, this movement was called peasant (farmer) farms. The essence of this movement was that the kolkhoz and sovkhoz allocated land to farmers on a lease basis on a contractual basis, giving them the right to receive 10-15 heads and more of cows. The farmer delivered the products, meat and milk to him at the state price at the expense of fulfilling the economic plan. For the product, the farmer was given mixed feed, construction and other materials. However, the farms established before independence were not independent, formed mainly under kolkhozes and sovkhozes. The kolkhoz and sovkhoz leased land to farmers, but the new form of labor and production was supplemented by the old administrative-command content. This, in turn, has created a situation of skepticism about the possibility of leasing to farmers in agriculture to run an independent farm.

RESEARCH METHODS

The real farming movement began in the republic after independence. In order to provide state support to farmers less than three months after the declaration of independence, the Decree of the President of the Republic of Uzbekistan dated November 29, 1991 “On further strengthening of peasant (farming) farms and state support of entrepreneurship” was the first step in the release. According to the decree, Uzagroprombank is allowed to provide cash loans to private farms to purchase food and construction materials from the aid fund. On this basis, district, village councils, personal auxiliary economic associations are personally responsible for the targeted use of these funds.

RESULTS AND DISCUSSIONS

The initial experience of the organization and operation of peasant (farmer) farms in Uzbekistan has been generalized, and a rational mechanism for its development has been developed. The rules of organization and operation of farms are reflected in the legislation of the Republic of Uzbekistan “On Lease” and other decrees, as well as presidential decrees. Based on these rules and initial experiments, it became possible to organize the farm individually and in groups. Farmers are mainly leased and leased land in the manner prescribed by law or exempted from this tax for a certain period of time (due to a natural disaster, etc.) by the decision of the executive committee. Peasant (farmer) farms were exempted from income (profit) tax for the first two years, and then paid 10% of their income to the budget on a monthly basis. As a result of agrarian reforms, half of the orchards in agriculture and 40% of the vineyards were given for private use. In particular, more than 14,000 farms have been established, to which 193,000 hectares of land have been allocated. The number of private entrepreneurs reached 300,000, of which 250,000 were self-employed. The share of farmers in agricultural production has increased. At the beginning of 1994, there were 14,825 peasant farms in the agricultural system.
There were two different types of farms. The first is that 7,538 independent farms have opened their accounts in the local branches of Tadbirkor Bank. They took a soft loan (loan) from a bank, added their own savings, and bought goods from the market. In the second type, 7,287 farms were part of kolkhozes and sovkhozes, which operated on a contract basis. These farms borrowed from the kolkhoz and sovkhoz and bought cattle and took special care of them. It handed over the products to him at the expense of fulfilling the economic plan at the state price of meat and milk. The state leased land to both types of peasant (farmer) farms. According to the presidential decree, 200,000 hectares of land have been allocated to provide land to farmers. As of January 1, 1994, 162.6 thousand hectares of land had been allocated to farmers, of which 84.7 thousand hectares were irrigated, 20.2 thousand hectares were arable land, 54.2 thousand hectares were pastures and hayfields, and 2.7 thousand hectares were other lands. At the first stage of agrarian reforms, the first foundations were laid for ensuring the stability of the country’s agriculture and the transition from a planned economy to a market economy.

The development of horticulture has been identified as a priority. In the network, special attention was paid to the denationalization and privatization of property. The second stage of the development of farms, the first type of peasant (farmer) farms. According to the presidential decree, 200,000 hectares of land have been allocated to provide land to farmers. As of January 1, 1994, 162.6 thousand hectares of land had been allocated to farmers, of which 84.7 thousand hectares were irrigated, 20.2 thousand hectares were arable land, 54.2 thousand hectares were pastures and hayfields, and 2.7 thousand hectares were other lands. At the first stage of agrarian reforms, the first foundations were laid for ensuring the stability of the country’s agriculture and the transition from a planned economy to a market economy. In the second stage of development of farms and peasant farms, the number of farms grew rapidly in 1998-2004. The main reasons for this were measures such as state support for farms, the development and implementation of a mechanism for the transformation of low-profit and loss-making company farms into farms. For example, in 1997 the number of farms in the republic was 21,416, and in 2004 it was 100,116. During the first seven years of independence, in 1991-1997, the number of farms reached 21.4 thousand. In the three years of the second stage of development of farms, in 1998-2000, their number increased from 23 thousand to 43.7 thousand. In a short time, their number increased to 20.7 thousand. This means that in the first stage of the development of farms, that is, in the first three years of the second stage, almost as many farms were formed as in seven years.

In recent years, farm growth has expanded even further. As a result, the number of farms in 1998-2004 increased almost 21 times compared to 1991-1997, i.e from 21.4 thousand to 1001 thousand people [2]. In the second phase (1998-2004), an average of 11.3 thousand farms were established each year. These farms have played a significant role in the production of grain, potatoes, vegetables, meat, milk and eggs, and have become major producers in the cultivation and processing of agricultural crops. In the village, personal subsidiary farms were reorganized as peasant farms. A peasant farm is a small family farm, a plot of land that was inherited by the head of the family for life, and agricultural products were grown mainly with the help of personal labor of family members. In 2003, 3.5 mln. more than a dozen farms were operating. In accordance with the resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated January 5, 2002, it was planned to establish farms on the basis of 83 loss-making and low-profit farms. According to this decision, agricultural enterprises in Mehnatabad, Mirzaabad and Yazyavan districts of Syrdarya region have been completely transformed into farms. Pursuant to the above decision of the Cabinet of Ministers, 3455 farms were established on the basis of 83 collective farms and company farms, which were allocated 135,300 hectares of land.

In the first nine months of 2002, farms delivered 72,670 tons of grain to the state, or 57 tons more than during the period of collective and company farms. Along with the increase in the number of farms, the area of land attached to them has also increased. The total land area of these farms in 1997 was 413.1 thousand hectares, of which arable land was 260.8 thousand hectares, in 2004 the total land area was 2770 thousand hectares, including 2078 thousand hectares of arable land. This means that during this period the total land area increased more than 6 times, and the sown area increased 8 times. In the first quarter of 2005, there were 116,000 farms in the country, with an area of 3.5 million hectares formed. The average farm area was 28.5 hectares. 765.3 thousand people were employed on farms. According to 2004 data, farms in Kashkadarya, Jizzakh, Bukhara and Syrdarya regions had the highest gross cotton yields. In the same year, the gross cotton harvest in Kashkadarya amounted to 333 thousand tons, in Jizzakh - 232.9 thousand tons, in Bukhara - 172.8 thousand

The average cotton yield in the regions was 1.24

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tons, in Syrdarya - 164.2 thousand tons. Farms in Khorezm, Kashkadarya and Fergana regions have grown cotton at a rapid pace. In 2004, raw cotton in the republic increased 58 times compared to 1997 in Khorezm region, and 33 times compared to 1998 [3].

By 2005, the amount of raw cotton grown by farms in the country increased by 20 times compared to 1997, and this figure increased by 5 times compared to 2000. The main factor in achieving this is the development of infrastructure serving farms on the basis of the state program. This year, 4,900 farms in the Republic of Karakalpakstan have grown 85% of the republic's cotton, and 6,037 farms in Bukhara region have grown more than 80% of the region's cotton. Collective farms and company farms were abolished, and farms based on their lands were specialized in grain growing. The land areas of such farms are mainly allocated for grain crops. As a result, the area under cereals has grown rapidly from year to year. The area under cereals in the republic's farms in 2002 was 385,000 hectares, while in 2003 the figure was 616,000 hectares. The increase in the area under cereals has led to an increase in gross harvest. 78,670 tons of grain were delivered to the state harvest by reorganized farms. This is 1,057 tons more than in the farm period. In particular, the farms of Yazyovyan district of Fergana region have been completely transformed into farms, and during the year the district has grown a total of 24,989 tons of grain from 41.1 quintals of winter grain sown on 6,080 hectares. The plan to produce grain and sell it to state resources has been fully implemented by 110 farms. The average yield on irrigated lands was 48.0 quintals per hectare. In Andizhan region, a high result was achieved - more than 75 quintals per hectare. Thus, thanks to the event held during the years of independence, the independence of grain in the republic has been achieved, the historical task of providing our people with our own grain, our own bread has been fulfilled. This achievement is the result of the renewal of rural life and the ongoing agrarian reforms [4]. The production of flour products, meat and dairy products, sugar and sugar products is steadily growing in the country. Great progress has also been made in the cultivation of vegetables, fruits and grapes. 5 mln. tons of vegetables and fruits are grown. After the independence of the Republic of Uzbekistan, in the process of radical economic reforms in agriculture, state farms were transformed into collective and company farms, livestock farms, cattle farms of most farms were privatized, and peasant and livestock farms were established. In order to develop the livestock sector, the Cabinet of Ministers of the Republic of Uzbekistan on March 15, 1993 “On measures to deepen economic reforms in animal husbandry”, February 23, 1994 “On measures to improve economic reforms in animal husbandry and protect the interests of peasant farms and privatized farms”. March 24, 1995 “On measures to continue privatization in animal husbandry and support private entrepreneurship”. According to these decisions, in 1995, 1,499 cattle farms operating at a loss to collective farms were privatized. As a result, 75% of the meat and milk produced in the country began to be supplied by the private sector. Along with the livestock sector, beekeeping and silkworm breeding have also developed. At present, more than 80% of industry, 88.4% of construction, 96.6% of communications, 99.9% of agriculture and almost 100% of trade are in the private sector. The private sector accounts for more than 75 percent of GDP. As noted at the January 18 meeting of the Cabinet of Ministers of the Republic of Uzbekistan, in 2012 alone, the country's GDP increased by 8.2%, industrial production by 7.7%, agriculture by 7% and retail trade turnover by 13.9%. The main part of total government spending, ie about 59.2%, was directed to the implementation of social and social protection measures, more than 34% of which was directed to the financing of education, more than 14.5% to health care [5].

In 2012, the republic's economy received 11 billion soums, 700 mln. dollars in domestic and foreign investments, or an increase of 14% compared to 2011. Such economic growth can also be seen in the example of the provinces. In his speech at the special session of the Andizhan Regional Council of People’s Deputies on April 26, 2013, the First President of the Republic of Uzbekistan Islam Karimov said that over the past seven years the region’s gross regional product has doubled, industry 2.3 times, agriculture 1.6 times. He noted that construction work increased by 7 times and 3.4 times. In 2005-2012, 224.5 mln. about $ 174 million in foreign investment $ 200,000 in foreign direct investment was disbursed. The number of enterprises with foreign investment was 86. These enterprises accounted for about 79% of GDP and almost 89% of total exports. In 2012, Andizhan farmers were the first to fulfill their contractual obligations, growing 293,000 tons of cotton and 508,000 tons of grain. Since 2013, the number of enterprises operating in the field of small business and private entrepreneurship in Andizhan region amounted to 22,200, which involved more than 80% of the population. In particular, “If 80% of the population of Andizhan lives on entrepreneurship,” said the First President Karimov, “tell me, what other incentives can be used to attract people to this field?” [6]. Emphasizing the need to widely promote the experience of Andizhan throughout the country, the First President said: “It is noteworthy that today such positive changes can be seen and observed in the entire Andizhan region, both in villages and cities. We all know and appreciate that you are proud of such achievements, but do not fall in love with them, and live in the spirit of achieving new goals and constantly moving forward. I would like to emphasize one point: If he wants to be informed, let him come to Andizhan first and get acquainted with the work, life and current achievements of the people who call themselves Andizhan.” In the “Strategy of actions on five priorities of development of the Republic of Uzbekistan for 2017-2021”, approved by the Decree of the President of the Republic of Uzbekistan No. PD-4947 dated February 7, 2017, consistent modernization of agriculture great attention was paid to development. The Action Strategy identifies the development of diversified farms as one of the important factors for the sustainable and efficient development of agriculture in the future. It was recognized that it is expedient for them not only to cultivate agricultural products, but also to process them in...
depth, to provide various works and services to the population. This, in turn, helps to increase their competitiveness by strengthening their financial stability and solvency. In particular, in 2017, a total of 23,846 farms were involved in the processing of agricultural products, the provision of various services, the creation of intensive orchards and vineyards, the development of the livestock sector with a total value of 1762203 million soums. 25,506 projects worth UZS [7] were implemented. The action strategy includes the creation of favorable conditions for the development of diversified farms, the creation of a regulatory framework for diversified farms in order to ensure their economic efficiency and financial stability, support them with soft loans from the state, preparation and processing of agricultural products, the development of farm cooperation in storage and sale, the establishment of small enterprises and their departments for the production and processing of products in rural areas. In accordance with the Resolution of the President of the Republic of Uzbekistan dated October 10, 2017 “On organizational measures for further development of farmers, dehkan farms and landowners”, support in the field of storage and sale, including the implementation of agro-technical measures and the conclusion of contracts, the provision of comprehensive assistance in the export of products to foreign markets [8].

CONCLUSION
In summary, farms established in the early years of the farming movement were mainly specialized in animal husbandry and vegetable growing. During the years of independence, farms have shown their superiority over other categories of agricultural enterprises. The establishment of farms in place of the existing company farms has led to great success in cotton and grain growing. The government has paid special attention to providing farms with new agricultural machinery, and mini-tractors have been produced for farms in the Tashkent Tractor Park. The introduction of scientific and technical advances in cotton and grain production has helped farms to improve the quality and quantity of these crops. At the same time, as a result of the care provided to farms by the government of the republic, their rational use of land, water, machinery and other material and financial resources, productivity has increased from year to year. These farms have achieved high results in the cotton and grain sectors, primarily due to the increase in their material interests as a result of their labor.

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THE HISTORY OF THE IDEOLOGY OF COLLECTIVIZATION OF THE SOVIET GOVERNMENT IN 1920-1930

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ABSTRACT
The article analyzes the collectivization policy of the Soviet government and its implementation, why the Bolsheviks decided to mass collectivize agriculture in the Union in the late 1920s, and how the mechanism for implementing this idea was developed, based on primary sources and scientific literature.

KEY WORDS: collectivization policy, socialist reconstruction, agriculture, local leaders, Soviet historiography, peasant communes, peasant farming, industrialization, statistics, manufacturing, poverty.

INTRODUCTION
The Soviet government’s policy of collectivization in the 1920s and 1930s was described as “a decisive step in the path of socialist reconstruction”. This was the essence of the establishment of a state monopoly on production, and the kolkhozes were a peculiar form of organization of agricultural labor, uniting individual farms. However, the first phase of the Soviet state’s largest project to modernize the country through the collectivization of agriculture failed miserably. Private reasons were pointed out, such as the arbitrariness of local leaders, the rapid pace of collectivization, the low qualifications of the kolkhoz organizers, the conflicts in the countryside, and the growing mutual resentment. The historical fact that collectivization is a practice of violence against the peasant masses has been proven in the latest scientific research. One of the tragedies associated with collectivization and left an ominous mark on the lives of farmers was the labeling of entrepreneurs and business farmers as “kulaks”. The tragedy of the “listened”, unfortunately, did not end there. Their deportation from their homeland was another of these tragedies. This process has also left a deep, painful mark on the fate of hundreds of thousands of peasants who have been subjected to the violence, which has not been adequately covered as an important, integral part of the whole theme.

RESEARCH METHODS
The collectivization policy and practice of the Soviets was characterized by the Red Empire waging a violent war against the peasants. It is clearly based on indifference, haste and irregularities in the interests and mood of the peasants. In Soviet historiography, the idea of collectivization is interpreted as an integral part of Lenin’s program of building a socialist society (industrialization, collectivization, and the cultural revolution). In particular, in his speech at the First All-Russian Congress of Land Departments, Committees of the Poor and Municipalities on September 11, 1918, he said, “... is something” [1].

RESULTS AND DISCUSSIONS
In his speech at the First Congress of Agricultural Commune and Agricultural Cooperatives on December 4, 1919, he said, Millions of small farms can be affected only by gradual, successful demonstrations” he said. In the years following the October coup, based on utopian theories, Bolshevik-courageously organized communes did not justify themselves in practice. This is because the first agricultural communes and artels were established on lands taken from former landowners and kulaks. They made their living only at the expense of the state, and were “poisoned by the peasants” because their production efficiency was so low.

In his speech at the VIII All-Russian Congress of Soviets on December 24, 1920, during the discussion of the draft law “On Measures to Strengthen and Develop Peasants’
Agriculture” Lenin said [3]. The Russian scholar V.M. Samosudov argues that Lenin never prioritized collectivization among the various forms of cooperation [4]. The New Economic Policy (hereinafter NEP), which began in 1921, had certain results in the early kulaks of socialist construction. Political stability has emerged during the NEP era. The political monopoly of the Bolsheviks was strengthened, its prestige grew and its influence on the people increased. This is explained by the relative decline of counter-revolutionary speeches during this period. Under NEP conditions, certain changes have taken place in the lives of farmers. Although the living conditions of the poor, who owned a small amount of land, did not improve quickly, he was able to work relatively freely and independently. Because during this period the Bolsheviks were less involved in the economic affairs of the peasants, and the role of the village Soviets was less high. As a result of the gradual normalization of rural life, the Soviet government managed to gain the attention of a large part of the rural population. The position and influence of the Bolsheviks was growing, especially among the rural youth. However, these changes have failed to address two pressing issues on the agenda. The first is the backwardness of farms, low production capacity (lack of equipment, labor organization, etc.), and the second is the deterioration of urban life due to the migration of farmers and the acceleration of urbanization. This situation had a negative impact on the Bolshevik industrialization plan and market relations between urban and rural areas and dealt a serious blow to the foundations of the NEP. With the strengthening of the administrative-command system after the death of Lenin, the ideas of the NEP were abandoned in the late 1920s. In the process of debating the theoretical foundations of socialist state-building and industrialization and collectivization in the second half of the 1920s, an opposition emerged that did not approve of the ideological path chosen by the Central Committee, headed by Stalin, and promoted other views and means. It was divided into two directions: the “left” led by L. Trotsky, Preobrazhensky and Putyakoff, and the “right” led by N. Bukharin, Rikov and Tomsky. The opposition has put forward its own alternative program of collectivization and opposition to the peasants, especially the “attitude to the kulaks”. While the “left” advocated drastic measures against the kulaks, relying only on the poor peasants, the “right” advocated not to take emergency measures against the peasants, arguing that “the kulaks grow into socialism through cooperation”. The opposition tried to prove theoretically that their ideas were acceptable. Initially, from the summer of 1927, pressure, repression against the “left” intensified. Despite the fact that the VKP (b) X Congress banned the faction within the party, “leftists” staged demonstrations, secretly published brochures, and engaged in other illegal activities. As a result, Trotsky and Zinoviev were expelled from the party on November 15, 1927. The 15th Congress decided to expel all members of the “leftist opposition” from the party. A few weeks later, Trotsky and his fierce supporters were expelled from the capital. The 15th Congress of the VKP (b) (December 2-19, 1927) went down in history as the “Congress for the Collectivization of Agriculture and the Preparation for the Onslaught of Socialism on the Whole Front”. Collectivization was to allow the state to obtain a large proportion of agricultural products at low prices in the interests of industrialization. At the congress, Stalin insisted that the only way to solve the problems of Soviet agriculture was to work the land collectively. The resolution on Molotov’s report “On Rural Work” set the party’s main task in the countryside as uniting small individual farms into large collectives.

The congress did not set the pace and timing of collectivization. There was no talk of mass collectivization. On the contrary, any pressure and administrative measures against the peasants were condemned [6]. The resolution emphatically stated that this could be done only if the peasants agreed to such a transition, and found it necessary to widely propagate that the gradual transition to large-scale social agriculture was necessary and beneficial for farmers, and to encourage large-scale collective farming elements in practice. At the request of the directives and circulars signed by Stalin and Molotov, it was announced that “party organizations have been set up” and that “all the work of party organizations will be evaluated in terms of the collectivization of farms”. The amount of state aid to the collective farms has increased dramatically. However, there was no clear idea of the form of the kolkhoz. Speaking at the First All-Union Congress of Collective Farmers of the Soviet Union on June 1, 1928, the “All-Union Elder” M.I. Kalinin was forced to admit that he “could not find the best form of collective farm that would unite production in the countryside”. Although Stalin’s proposals were not reflected in the decisions of the Plenum, in the policy of the Central Committee of the CPSU (b) these principles began to be fully implemented. All the rural communists were among the first to enter the kolkhozes under the pressure of disciplinary action. The kolkhoz center gained additional powers in the structure of the kolkhoz. Rural cooperatives undertook to supply machinery, machines and tractors only to the collective farms. The mobilization also spread to trade unions and Komsomol organizations. They set out to carry out party policy in the village on behalf of party activists and GPU staff. In the resolution of the Plenum of the Central Committee of the CPSU (b) of November 16-24, 1928 “On control numbers of the national economy in 1928-1929”, the main task of the party was to The first shift will be made in the “gradual consolidation of scattered peasant farms into large consolidated farms” [10].

Mass collectivization was primarily a means of raising the funds needed by the Soviet state to implement the country’s industrialization program. The Bolsheviks could supply the resources of the countryside to the city precisely through the kolkhozes. The kolkhozes played an important role in the party’s obtaining additional products from the peasants for industry. Of course, this is an important factor, but not the main one. Stalin’s victory in the struggle for power of the party’s “geniuses” is also cited as one of the reasons for the transition to a policy of mass collectivization. During the grain crisis of 1928, the “right” led by N.I. Bukharin, A.I.
Rikov promoted an alternative program. They advocated not imposing emergency measures on farmers, but rather strengthening economic measures. However, those in the “right opposition” have made a serious mistake in their political activities. Bukharin held secret talks with opposition leader L. Kamenev. The publication of the conversation in a secret Tiroka newspaper undermined the opposition’s image among party members. Stalin skillfully used this event.

Stalin based his theory on the “intensification of the class struggle” in the struggle against the opposition. Both the ideological and organizational suppression of the opposition allowed Stalin to use methods of violence against the peasants from November 1929 through a policy of mass collectivization and the abolition of the kulaks as a class. The ideas and conclusions of Stalin in his article “The Year of the Great Turn”, published in the newspaper “Pravda” on November 7, 1929, on the collectivization of agriculture, were an expression of far-reaching goals. The article pointed out that the decisive victory of the Soviet state was when the peasants turned to the kolkhozes. “Now the peasants do not enter the collective farms individually, but with the whole village, the whole district, even the whole district. What does this mean? This means that middle-class peasants are now entering the collective farms. This is the essence of this turning point in the development of agriculture, which formed the success of the Soviet government in recent kulaks” [13] - wrote I. Stalin. Real life shows the opposite. The reason was that at that time not only the middle class but also the poor peasants were forced to join the kolkhoz. As a result of the top-down demolition of rural NEP foundations, it was no longer possible for individual farms to survive as independent small commodity producers. The foundations of agricultural cooperation were severely damaged during the “emergency measures”. As a result of the strong administrative-repressive pressure and propaganda of the Soviet government, some of the poor who were losing their livelihoods had no choice but to join the kolkhoz.

As of October 1, 1929, only 7.6% of all farms in the Union [14] and no more than 3.4% in Uzbekistan [15] belonged to collective farms. Given that the poor make up 35% of all farms in the USSR [16] and 43% in Uzbekistan [17], collective farms cover a quarter of the poor in the Union and less than a tenth in Uzbekistan. The resolution of the Plenum of the Central Committee of the CPSU (b) of November 1929 “On the results and future tasks of the construction of the collective farm” noted the facts mentioned in Stalin’s article announced the start.

In the plenum, the issue of the pace of collectivization was considered a key issue. Speaking on November 15 on G.N. Kaminsky’s report, V.M. Molotov said he had high hopes for the 1930 sowing campaign, noting that “we have 4.5 months left - November, December, January, February, March” [18], noting that mass collectivization will take place in the spring. However, to the issue of sending 25,000 “politically mature” workers to the countryside, Molotov said, “We must approach this measure as an urgent, high-level measure”. The November Plenum also considered it necessary to establish the USSR People’s Commissariat of Land Affairs in order to centralize the management of agricultural work. On December 7, 1929, the resolution of the Central Executive Committee of the USSR Soviets “On the Establishment of the People’s Commissariat of Land Affairs of the USSR” was published. Ya.A.Yakovlev was appointed People’s Commissar for Land Affairs. This comissariat played a key role in the development of plans for mass collectivization and the implementation of the measures of the VKP (b) against the peasants. At the meeting of the Politburo of the Central Committee of the CPSU (b) on December 5-7, 1929. A special commission headed by Yakovlev was set up. The special commission worked in two directions: on the rate of collectivization (chairman G.N. Kaminsky); on the treatment of the kulaks (Chairman K.Ya. Bauman)

The available factual evidence suggests that the process of drafting resolutions on these issues was uncompromising, that there were differing views on the mechanisms, pace and timing of collectivization, but that very short deadlines were set as a result of Stalin’s and Molotov’s pressure. On December 27, 1929, familiar with the draft resolution on collectivization, Stalin delivered a speech at the Conference of Agrarian Marxists “On Agrarian Policy in the USSR”. Emphasizing the kolkhoz movement as the most important event in socio-economic life, he focused on theoretical issues. In this speech, for the first time, he officially announced the transition from a policy of limiting the exploitative tendencies of the kulaks to a policy of ending their existence as a class. However, two years ago, collectivization should be carried out gradually, for which economic, financial, cultural, political measures, large sums of money were needed. By December 1929, Stalin dared to say that the material base for collectivization was ready.

CONCLUSION

The conclusion is that the theory and practice of collectivization, which emerged during the years of Soviet rule, has been abandoned to this day. Great attention is paid to the transfer of land to its rightful owner, the farming movement of farming. This is because the construction of a collective farm based on social animosity and violence, without taking into account the interests, aspirations and aspirations, worldviews and psychology of certain social strata, did not justify itself in practice.

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THOUGHTS ON THE ORIGIN OF UNITS OF MEASUREMENT AND THEIR USE BY HUMANS

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ABSTRACT
In this article is discussed the origins of units of measurement and their use by humans. It is very important from a scientific point of view to know the name, quantity, reasons for various units of measurement, who used them and what names they are called in the sources. There is no direction in which people can reach their sphere of activity, but without the help of measurements and their means, they can learn, seek and achieve their goals.

KEY WORDS: units of measurement, quantity, value, gas, centimeters, weight, zakat,

INTRODUCTION
We know, today, in all developed countries, these services are regulated by law. Since the system of units of measurement is included in school textbooks, almost every one of us has information about it. But many are interested in what units of measurement our people used in the past. It is very important from a scientific point of view to know the name, quantity, reasons for various units of measurement, who used them and what names they are called in the sources.

Whatever science the human mind may study, form and develop with its mind, we will not follow its direction, we will inevitably encounter measurements, their different methods and relationships. With the help of these methods and measuring instruments, which ensure their unity, a single measurement with the required accuracy is carried out only through the science of metrology. For this reason, any modern science, be it natural or social, is to some extent connected with metrology. There is no direction in which people can reach their sphere of activity, but without the help of measurements and their means, they can learn, seek and achieve their goals. Therefore, knowledge of the basics of metrology, its understanding and practical application in the field of specialization is one of the important factors for graduates of undergraduate programs in engineering and technology.

MAIN PART
Each unit of measurement has its own long history. In times when units of measurement did not exist, people used them to measure the amount of something, depending on their needs. In the past, parts of the human body were also used as a means of measurement. In the written monuments that have come down to us, they found their expression and at different times were held in different ways. Most importantly, they introduced these measurements, given that anyone can use them. For example, fingers, hands, feet, eyes, ears, joints, miles, elbows and other things are used to use them.

Measurements are an integral part of human activity, and its life cannot be imagined without measurements. As soon as a person wakes up early, he first of all estimates the time, and while drinking tea, he estimates the temperature, distance, when he goes to work or school. Measurements occur continuously, repeatedly or periodically, sometimes consciously, sometimes unconsciously. The Creator endowed man with such a wonderful, unique quality, that is, a feeling that is an invaluable gift not only for people, but for all living beings. We can understand emotions as a very complex measuring tool. However, it should be noted that knowledge of the world around us and being around us only through the senses is still not enough. For example, it is impossible to know the value of the voltage in the electrical network with the sense organs alone. To do this, we need a tool called a voltmeter. You also need to know the existing procedures for using this measuring tool.

Currently, there is no specialist who does not use measurements in his work. The more complex the task before him, the more important measurements are. According to UNESCO, more than 3,000 areas of human activity are now closely related to measurements. Just as there are certain procedures in each specific case, there are also certain rules, methods of measurement and methods that serve as guidelines for the implementation of these methods, and all of them are combined into a system based on specific regulatory documents. The above measurements, whether simple, complex, one-dimensional, multi-dimensional, with a simple ruler or very large special instruments, constitute a separate science that applies to everyone and deals with these issues, and is called ungametrology. The science of metrology, in
turn, is divided into several branches. These networks differ in their essence, content, scope and objects of activity. Metrology (Greek metro - measurement and logos - teaching) is a branch of physics, as well as the science of measurements, methods and means of ensuring their unity, as well as ways to achieve the required accuracy. The main problems of this science are: a) the general theory of measurements; b) creation of units of quantities and their systems; c) methods and means of measurement; g) methods for assessing the accuracy of measurements (the theory of measurement uncertainty, the theory of measurement error) and methods of its expression; d) ensuring the uniformity of measurements; e) creation of standards; j) methods for determining the characteristics of measuring instruments and measuring instruments and converting unit sizes from all standards to other measuring instruments.[5:615]

The need for measurements dates back to ancient times. If we analyze the literal meaning of the term "measurement", then in ancient times humanity received mainly "organoleptic measurements" - that is, approximate information about a particular physical property through the organs of perception. In this case, these sense organs acted as a means of measurement. Although in such measurements no exact value is obtained, in each measurement, more precisely, the comparison is made in relation to a specific measurement. Initially, the measure of comparison was not intangible, but was determined individually based on the level of experience, intelligence and knowledge of the person about the environment. Later, as tools for working and foraging became more practical, comparative measurements became more essential. In everyday life, a person began to measure different quantities: distances, surface areas, sizes and masses of objects, time, etc., based on his own intuition and experience, not knowing the causes and sources of these processes.

As mankind developed, it continued to improve its tools and its way of life. He was in the process of further improving living and working conditions. Because of the inconvenience and individuality of working with intangible dimensions, he was looking for ways to materialize it. At the same time, different units of measurement appeared. In the early days, people preferred to "see" and "perceive" the world before they knew it in depth.[1:30]

The oldest units of measurement are anthropometric, which are based on correspondence or inclination to specific human organs. For example: the elbow is the distance between the thumb and forefinger with a spread palm, the ear is the distance between the arms spread apart in two directions, the step is a unit of walking with a calm step of an adult, the elbow is the distance between the palm and the elbow, the mile is the sound of one in an open field distance, which is heard, kabza (palm) - the width of the other four, not counting the thumb; feet - the length of the sole of the foot; span - the distance between the fixed head and index fingers, etc. The great Roman architect and theorist Vitruvius wrote in his book "10 Books on Architecture": The part of the face from the chin to the upper forehead line and the beginning of the hairline, as well as the part of the outstretched paw from the wrist to the tip of the middle finger, makes up a tenth of the body. The distance from the chin to the top of the head was one eighth, the heels - one sixth of the length of the body, the elbow of the arm and one quarter of the body of the chest. If we analyze the opinion of the philosopher, then in fact the human body is a metrological system, consisting of both simple and complex units of measurement at the same time. In medieval Central Asia, the unit of length equal to the cubit was the dice, also known as the gas. The two units were used interchangeably as there was more gas circulating than them. Both terms are used in Eastern sources, but gas is relatively more common.[4:77]

In the history of metrology, the introduction of such units is also based on the anthropometric measurements of great scientists or statesmen. For example, the English king Henry I (early 12th century) introduced the unit of measure yard (91.44 cm). The standard measure was the distance from the tip of the king's nose to the tip of the middle finger of the outstretched hand. Along with anthropometric units of measurement, natural units of measurement began to appear. As these units, the properties of some permanent, unchanging objects in nature are taken. For example, "carat", which means "pea" and "gran", which means "grain of wheat", are widely used as a unit of measurement for various gemstones. Another aspect of the first natural measurements are the ubiquitous measurements of time. As a result of many years of observations by astronomers in ancient Babylon, the concepts of year, month and hour were used as units of time. Later, 1/86400 of the time during which the Earth completes a complete rotation around its axis, began to be called a second. The ancient Babylonians measured time in mines as early as the 2nd century BC. The mine is located about two astronomical hours apart, during which time a "water mine" weighing about 500 grams flowed out of the water clock depicted in Babylon. Then "mine" changed and became the minute we recognized.

For a modern historian studying the medieval system of measurement, finding a way through the labyrinth of units collected from sources and drawing an analytical conclusion is the most difficult process in this field. The slowness in the development of medieval metrology can be explained by the complexity of the field.[2:149]

When studying the metrological system, many misunderstandings can be encountered. We can point to several reasons for this. We list them below: 1. Territorial delimitation in units of measurement; 2. Different names for units of the same type; 3. The information given in the sources is contradictory.[3:77]

Much attention paid to the field of metrology on the territory of our country can be seen in the works of Nosiruddin Burkhonuddin oglu Rabguzi of 1310 in the Turkic language "Kissasi Rabuzi", Amir Temur, Alisher Navoi, Zahiriddin Muhammad Babur and dozens of other scientists. The unit of measurement of the time of Babur was widespread in the eastern countries. Sometimes the armor also had a different value depending on the unit of measure used. It was the gas of the Persians and the gas. The development of time has led to changes in culture, customs and some terminology. This also
affected the ancient Sharia units of measurement. After all, since ancient times, each nation had its own culture and traditions. Certain rules and terms were used to regulate everyday tasks, economics, politics, social relations. In particular, trade played an important role in the life of every country. Interstate cultural ties developed through trade caravans. This led to an exchange of civilizations. Markets were built around caravanserais. Scales played an important practical role in ensuring that trade was fair and honest. Each nation traded across different dimensions, depending on their culture and customs, including Muslims. But now it's new as units of measure were acquired, the old measurements became almost obsolete. Consumption, on the other hand, must be expressed in modern terms. To meet this need, this article provides an overview of the units of measurement in Islamic authoritative sources expressed in modern measurements of the Turks. The average value was taken to be 54.04 centimeters.

CONCLUSION
In a word, the science of metrology is of great importance in the study and analysis of information from sources, regardless of the area of our history. Although the information presented in the sources is contradictory and changing, this information is invaluable. Although most of them are quantifiable, we can shed some light on the number of some units with a logical and systematic approach. Each of these units has a long gradual past. The originality of these units appearing in sources and dictionaries is determined by their sociality, their universality. The units used by the local population were formed and popularized mainly from the needs of everyday life. By studying, researching and conveying to the younger generation the units of measurement used in the countries of Central Asia at different times, we will be able to give them a comprehensive idea of the values of our people.

THE LIST OF USED LITERATURE
FOOD NUTRITIONAL ANALYSIS AND EDA

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1,2,3,4,5Karunya Institute of Technology and Sciences, Coimbatore

ABSTRACT

Food and nutrition are the way that we get fuel, providing energy for our bodies. We need to replace nutrients in our bodies with a new supply every day. Water is an important component of nutrition. Fats, proteins, and carbohydrates are all required. Nutrition is the science that interprets the nutrients and other substances in food in relation to maintenance, growth, reproduction, health and disease of an organism. It includes ingestion, absorption, assimilation, biosynthesis, catabolism and excretion. Knowing and eating mindfully is not only essential for a healthy gut but also for peace of mind. Also, A diet filled with vegetables, fruits and whole grains could help prevent major conditions such as stroke, diabetes and heart disease. More often than not, we like to gorge on our favourite foods which are not exactly the best for our bodies. While it is okay for such binges to occur occasionally, such diets can be extremely harmful if the person does not strike a balance with healthy foods. This article analyses the most common available foods and the nutritional facts in them.

INDEX TERMS - Analysis , Food , EDA , Nutrition

1 - INTRODUCTION

Nutritional analysis is the process of determining the nutritional content of food. It is a vital part of analytical chemistry that provides information about the chemical composition, processing, quality control and contamination of food. It ensures compliance with trade and food laws. There are a variety of certified methods used for performing nutritional analysis. Exploratory Data Analysis, or EDA, is an important step in any Data Analysis or Data Science project. EDA is the process of investigating the dataset to discover patterns, and anomalies (outliers), and form hypotheses based on our understanding of the dataset. EDA involves generating summary statistics for numerical data in the dataset and creating various graphical representations to understand the data better. In this article, we will understand EDA with the help of dataset and do the nutritional analysis. We will use Python language (Pandas library) for this purpose.

Everybody nowadays is mindful of what they eat. Counting calories and reducing fat intake is the number one advice given by all dieticians and nutritionists. Therefore, we need to know what foods are rich in what nutrients, don't we? The dataset contains a csv file with more than 300 foods each with the amount of Calories, Fats, Proteins, Saturated Fats, Carbohydrates, Fibers labelled for each food. Also, the foods are also categorized into various groups like Desserts, Vegetables, Fruits etc.

2 - PROCEDURE

2.1 Cleaning Data

Data cleaning is always the first step in any data science project. Although the data here seems clean, some minor alterations are required. Data cleaning is the process that removes data that does not belong in your dataset. Data transformation is the process of converting data from one format or structure into another. Transformation processes can also be referred to as data wrangling, or data munging, transforming and mapping data from one "raw" data form into another format for warehousing and analyzing.
First things first, the t's in the data denote miniscule amounts so we might as well replace them by 0.

Now, we need to remove all the expressions like commas from the dataset so as to convert the numerical data to the respective integer or float variables.

Now, let us convert grams, calories, protein, fat, saturated fat, fiber and carbs datatypes to int.

There's a null value in the fiber column, let's drop that row entirely.

2.2 Data Visualization and Analysis

Let's start the analysis by plotting the features with one another. This will not only provide us the distribution of features with one another but also give a quick quantitative feel of the data.
Let’s dive into individual metrics

What is the most protein rich food in the category of vegetables and grains?

Therefore, from the category of Grains, Vegetables and Seeds, whole wheat has the most protein content followed by white bread. Soybeans are also in the top 20s. Also, Almonds rank no. 1 in the Seeds category.

Foods to stay away from:
What food has the most calories?

Fortified milk has the most calories, followed by white bread. Also, notice how whole wheat has the most proteins but has almost equal amount of calories. Lard is fat source with most calories and 1/2 cup of ice-creams tops the charts in the dessert category.
Fat Content

Normally, fat sources are often looked down upon. But, a certain amount of fat is required for a healthy gut. Let’s look at some fatty foods.

Therefore, Oysters and Butter have the largest combination of calories and fats, followed by lard.

Analysing categories

Grouping the data into categories can give us the total count of all metrics and thus we can analyse the categories.

3- RESULT
4 - CONCLUSION

Some inferences from the above pie charts:

- It is clear that breads, grains and cereals have the highest amount of Carbs and Calories.
- Largest percentage of protein is in seafood (God bless the vegetarians!)
- Surprisingly, same amount of fiber content is present in Fats and Seafood.
- Seeds and nuts have about 14% fat content.
- Fruits do not have a large percentage in any of the categories except carbs, they have about 10% carbohydrates.
- Dairy products (15%) have more saturated fat content than seafood (11.8%).
- We can expand this project and analyse the other aspects of diet as well using similar methods.

4 - ACKNOWLEDGEMENT

We would like to thank our teachers, family and friends.
INTRODUCTION
Acute obstructive bronchitis (AOB) is widespread among young children, leading to frequent relapses and severe complications. Obstructive forms of bronchitis occupy one of the leading places in the structure of childhood morbidity and mortality [1,2,5,8,10]. Analysis of risk factors in predicting the likelihood of developing a disease in children is essential for modern pulmonology. Among patients with AOB, acute pneumonia occurs 4 times more often and almost always has a complicated course. Under the influence of an infectious factor and other agents, various immunological changes are observed in children, and the ability to develop full-fledged post-infection immunity also sharply decreases. In AOB, the T-link of the immune status changes, which contributes to frequent intercurrent diseases and allergic manifestations [3,4,6,7,9,11]. It is known that a decrease in cellular immunity is mediated through a violation of the production of biologically active hormone-like substances produced by the thymus. Therefore, a promising area of research is the search and implementation of methods that have a corrective effect on the immune system in children with acute obstructive bronchitis.

PURPOSE OF THE STUDY
The study of clinical and immunological picture of acute obstructive bronchitis in children.

MATERIALS AND RESEARCH METHODS
Under observation were 65 children with AOB, 35 patients with acute simple bronchitis and 20 healthy children. Children with acute obstructive bronchitis were aged from 6 months, up to 3 years. A dynamic immunological study revealed a decrease in the factors of phagocytic activity of neutrophils, cellular immunity and developing transient insufficiency of humoral immunity as the duration of the disease increased.

RESULTS OF THE STUDY AND THEIR DISCUSSION
An analysis of the examined patients showed that in most children the disease occurs in age from 3 months to 1 year. In the anamnesis of patients, the presence of respiratory diseases was often noted, which were complicated by acute obstructive bronchitis on the 2-3rd day. An analysis of family and hereditary history showed that 32% of sick children were born from related marriages, in 46.5% of children, relatives suffered from allergic diseases. An analysis of the initial premorbid background showed that in children with AOB, allergic diathesis was observed in 54.9%, anemia in 81.9%, rickets in 51.0%, paratrophy in 12.5% and malnutrition of I-II degrees - at 48.7%. It was revealed that the average body weight at birth in children with AOB significantly exceeded (more than 3.5 kg) those in children with acute simple bronchitis and the control group.

The conducted immunological studies revealed a decrease in the factors of natural resistance of cellular immunity and developing transient insufficiency of humoral immunity as the duration of the disease increased.

CLINICAL AND IMMUNOLOGICAL PICTURE OF ACUTE OBSTRUCTIVE BRONCHITIS IN CHILDREN

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ABSTRACT
65 Children with acute obstructive bronchitis and 35 patients with acute bronchitis without obstruction aged 3 months and older were examined. up to 3 years. A dynamic immunological study revealed a decrease in the factors of phagocytic activity of neutrophils, cellular immunity and developing transient insufficiency of humoral immunity as the duration of the disease increased.

KEYWORDS: acute obstructive bronchitis, thymus gland, lymphocytes, T-activin, children, clinical and diagnostic observation.
immunity and developing transient insufficiency of humoral immunity as the duration of the disease increased. The main changes in cellular immunity were expressed in a decrease in the number of T-lymphocytes (DM3) 45.2±0.8 compared to children in the control group 57.3±0.9% (p<0.01). More often there was an increase in the content of B-lymphocytes (DM19) in patients with OOB 18.1±0.3 (p<0.01), which is significantly higher than data with acute bronchitis 16.1±0.7% (p<0.01) and in the control group (p<0.01). There was a trend towards a decrease in T-suppressors (DM8) in relative and absolute terms in AOB in children (Table 1).

The phagocytic activity of neutrophils in the acute period of the disease is significantly inhibited in children with AR 45.1±0 (p<0.01). A particularly pronounced decrease in FAN was observed in children with relapses (3-4 times a year) of acute obstructive bronchitis. There was also a significant decrease in the phagocytosis index and the indicator of completed phagocytosis. Changes in the humoral link of immunity were accompanied by a decrease in the concentration of IgA (p<0.01) and IgG (p<0.01). An increase in the concentration of IgM (p<0.01) in children with AOB indicates that during the peak of the disease the immune response is provided mainly by antibodies of the IgM class.

Consequently, the humoral link of immunity in the midst of clinical manifestations of AOD is characterized mainly by an imbalance in the concentration of immunoglobulins in response to antigenic irritation.

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<td>T-lymphocytes, % (СД3)</td>
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<td>T-suppressors, % (СД8)</td>
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In children with AOB who were on the traditional method of treatment, the improvement in clinical symptoms and immunological parameters was less pronounced. Thus, the level of T-lymphocytes (p<0.01) remained low, the levels of B-lymphocytes (p<0.01) were high. The content of immunoglobulins did not reach the levels of healthy children.

CONCLUSIONS

The conducted studies have shown a significant role of violations of individual parts of the immune response in the clinic of acute obstructive bronchitis in children. Analysis of the links of the cellular link of immunity in children with acute obstructive bronchitis showed a significant decrease in the relative and absolute number of T-lymphocytes and imbalance of immunoglobulins.

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WOMEN EMPOWERMENT THROUGH MICRO FINANCE: A BOON FOR DEVELOPMENT

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ABSTRACT

In India, women constitute 48.15% of the total population and the ability of women has not been fully utilized by India due to different reasons viz., social, cultural, educational, political etc. In view of this Indian women’s status is not good as compared to men in respect of power, control over economic resources, wages, education, confidence, economic independence, social security, financial resources, over dependence on creditors to get credit, family ties, gender discrimination, sexual harassment etc. In array to overcome the women’s problems the woman empowerment is essential. As result of this the concept of women empowerment gaining more importance in recent past and women has develop into a socio and economy of nations like India and other developing countries in the world. Women empowerment concerned with giving power, ‘creating power within’ and ‘enabling’ them to contribute something towards family and nation. The women empowerment facilitates to understand their full personality as well as powers in all level of society and life. The women empowerment always provides different powers to “women” such as social recognition, dignity, prosperity, property, value and security. In this article, The basic objectives of the research is to review the socio economic development through micro finance of SHGs members, and to review the factors and impact of self help groups on the socio-economic condition of SHGs women, to review the role of SHGs in empowerment of self help groups member in terms of economic, social and political status.

KEY WORD : Women empowerment, Microfinance, and SHG

INTRODUCTION

Microfinance has gained a lot of significance and momentum, both theoretically and practically in the last decade. India now occupies a significant place in global microfinance through promotion of the Self- help Groups (SHGs) and the native SHG Bank Linkage Programme (SHG-BLP) model. The Indian model offers greater promise and potential to address poverty and marginalization as it is focused on building social capital and ensuring empowerment through access to financial service and linking with the mainstream. In this approach, microfinance has been viewed particularly as contributing to the process of empowerment by enhancing women’s productive role and enabling them to challenge inequities within and between households. Microfinance programmes are thus, expected to (i) meet the survival needs of the poor by enabling them to have access to credit for both consumption and productive activities; and (ii) to empower the poor and the marginalized by expanding the opportunities for participation in income-generating activities and undertake social activities aimed at removing socio-cultural barriers to empowerment and development. Empowerment of women is a burning topic and has got global attention. No of society and democracy can be called developed and civilized unless and until women which constitute more than 50% of population are given equal chance to develop their personality by granting them equal power, equal rights and freedom.

The term Micro finance refers to the provision of financial services to the lower income groups, which also include self-employed people. The concept of Microfinance was introduced by Grameen Bank in Bangladesh and popularized by the Nobel Prize winner Professor Muhammad Yunus. But now the term microfinance has become a world wide movement as it was replicated in various countries. (Patel & Kalkot, 2006). This Yunus modal of Microfinance has been introduced in India in the form of Self-Help Group. In this world a commonly known but most exclusively debated and most confusingly explained matter is girls and boys behave differently. Such a trivial and seemingly natural phenomenon has a deep seated multidimensional chain of explanations.
OBJECTIVES OF THE STUDY

- To review the role of SHGs in empowerment of Self help groups member in terms of social, economic, and political status.

METHODOLOGY OF THE STUDY

The present research is completely based on secondary data in nature. And the major secondary data have been collected from books, journals, articles, Research reviews, annual reports, periodicals, Reserve Bank Bulletins, NABARD annual report and internet. Narrative techniques have been applied for discussion and conclusion.

HISTORY OF MICROFINANCE

Microcredit and microfinance are emerging terms in the field of development, first coming to prominence in the 1970s, according to Robinson (2001) and Otero (1999). Prior to then, from the 1950s through to the 1970s, the provision of financial services by donors and governments was mainly in the form of subsidized rural credit programmes. These often resulted in high loan problems, high lose and a difficulty to reach poor rural households (Robinson, 2001). Hulme and Mosley (1996, p.109) in their study on microfinance to eradicate poverty, he argue that well-designed programmes can improve the living standard of the poor and can move them out of poverty. According to them “ evidence shows that the impact of a loan on a borrower’s income is related to the level of income” as those people having high income have a greater investment opportunities and so credit schemes are more likely to benefit the “middle and upper poor” (1996, pp109-112). However, they also prove the results that when Microfinance Institutions such as the Grameen Bank and BRAC provided credit to very poor households, those households are capable to generate their incomes and their assets (1996, p.118).

Raj Smitha (2005) examines “ Micro credit: Self-Help Groups and Alternative Development paradigm”. Credit market problems of moral hazard, enforcement, and information asymmetry are related to borrower vulnerability and market inaccessibility. The group structure of Microfinance self-Help Groups such as the SHG-bank Linkage projects are shown to generate profit from poor clients. The project also exhibits the problems of regional concentration, meager loans, debt trap, high interest rates, and questionable benefits. The micro credit are concluded to be myopic in the refusal to recognize that financial services do not create opportunities, but only allow people to take advantage of this opportunity.

Sharma (2007) examined the impact of participation in microfinance programme on women autonomy and gender relations within the household. For this purpose, study was conducted in hill and terai areas of Nepal in the year 2004-2006. The participants of microfinance programme who adopted Grameen model for at least four years were selected. Comparison between pre and post-SHG participation showed that programme led to women participation in household...
decision-making, power over economic resources, wider social networks and freedom of mobility. Female financial support had increased spousal communication about family planning and parenting concerns. It was also found that microfinance institutions had reached only a small portion of the population and the challenge was to expand the existing services. The study suggested that the government should come forward environment to develop microfinance services.

MICROFINANCE STUDIES ON WOMEN EMPOWERMENT

On the contrary Hashemi et.al (1996) told that women have access to saving and credit system has hardly any impact on their lives. Their results shown that women should give access to savings system contributes notably to the degree of the economic contributions reported by women, to the likelihood of an increase in asset holdings in their own names, to an increase in their exercise of purchasing power, and in their social, political and legal awareness as well as in composite empowerment index. They also found that access to credit was also associated with higher levels of mobility, political involvement in ‘major decision-making’ for particular organizations. Microfinance programmes target has not achieved the goal of empower women. There are different arguments varying underlying motivations for pursuing women empowerment. Some argue that women are in the poorest conditions to help them should be a priority. Whereas, other believe that by the investment of women’s capabilities empowers them to make choices which is a valuable goal in itself but it also contributes to greater economic growth and development. It has been well-documented that an increase in women’s status through different resources creates a direct effect on well-being of the family, especially children (Mayoux, 1997; Kabeer, 2001; Hulme and Mosley, 1996). Beside that the increase in financial services increased access to represent an opening opportunity for greater empowerment through new revenue of income generation. Such institution explicitly perceive microfinance as a tool for the women’s rights and independence. Keeping a number of microfinance institutions has come forward to help poor women in their socio economic development better and can refund money in time. The aspect of microfinance has sometime long term effect on women empowerment. It has sometime positive as well as negative effects.

REVIEW ON WOMEN EMPLOYMENT THROUGH SHG

According to Zenab Banu the concept of empowerment in social science is by and large context driven rather than theory driven. In today's world the term empowerment has become a fashionable concept. Earlier the term was used by the political scientists. But they confined the term to the political field and explained it as power assigned to an institution by the constitution of administrative rules. In the third world countries we often speak about empowerment of the backward classes like SC, ST and of women. In our country it is most popularly discussed in the context of the effect of 73rd Amendment of the Constitution on women.

According to Zenab Banu viewed that constitutionally in the Indian context empowerment stands for transformation of people belonging to weaker sections. It means that the hidden meaning of empowerment is not only political but also social and cultural. In other words empowerment also relates to social transformation of women. So to her through the attainment of political power through, i.e.,through 73rd Amendment, women will get socio-economic power also.

Paula England in the article “Conceptualizing Women Empowerment in Countries of the North” (2000) analysed power in relational sense – for England exercise of power always occurs in interaction or transaction with another actor. Sometimes we are interested in women’s power relative to specific people such as their spouses or espouses. We are also interested in their power in a more generalised sense vis-a-vis many potential actors with whom they might exchange with many actors. In this connection England presented a model of empowerment.
Economic resources and subjective states influence each other and interactively influence the extent to which women exercise power, to say that the effects of resource and internal states may interact with each other. Similarly the interaction implies that higher levels of resources on power use, laws, rules, norms may also directly facilitate women’s exercise of power or outcome in their interests.

Economic resources or subjective state of entitlement or efficacy may interact with laws, rules and norms such that having higher level of resources, efficacy on entitlement may make women more able and willing to do what is necessary to use the rights allowed by the rules, laws or norms. Exercising power contributes to outcome in women’s self-interest.

Prof. Nandini Kajuri in an article, Mahilader Kshamatayan – Sudurer Hatchani Noye in Ganashakti, News Daily on 6/2/2005 has projected many positive outcomes of SHGs, e.g., she appreciated SHG functioning on the following grounds. Firstly, a savings habit has been developed among its members. Secondly, such savings helped them to not to lend money from the money lenders. Thirdly, it added something extra income to the household and thereby it helps to increase their status in the family. But apart from this she also cites some alarming conditions for SHGs. The major problem regarding this is the hazardous process involved in gradation system. Many of the group[s who are unaware of how to fulfill gradation criterion are failing to achieve the grade and thereby not getting loan from the bank and this is creating frustration among them and consequently groups are breaking down. To her another major problem of these groups is the problem of illiteracy. Due to illiteracy almost 50% members are dependent on the group leader for any sort of upliftment and this create a major barrier in the path of empowerment.

Shakuntala Narashima in her book “Empowering Women—An Alternative Strategy from Rural India” (2005, Sage Publication) presented review report regarding past government initiatives. According to her in case of law enactment the rural poor hardly have any access to the legislative information. So they fail to get any advantages from the law for women. In case of political participation she said that the 73rd Amendment has brought a watershed achievement in case of empowering women. In a study in Uttar Kanada district of Karnataka state, she found that the elected women were treated as mere puppets in the panchayats. According to her, the status of women in society as individuals in their own right has consistently been given low priority in all development plans. So far as against quantitative targets like income employment, credit facilities. The latter are means to an end, the end being a better quality of life, but under the ascendency of economic paradigm, the means have become an end in themselves and the indices have become the yardstick instead of the effect that they have. These approaches take cognizance of the fact that overwhelming obstacles to the advancement of women are not merely economic but a combination of political, social, cultural and economical factors.

Ganapathi R and Murugesan J (2011) they studied on economic empowerment through SHGs. The scholar argues that the SHGs ensure the overall development of women and it turned to women empowerment. Further, it reveals that some
people hesitant to join SHG because of they have lack of knowledge about the role of SHGs hence it is needed to changes the attitude of such types of women’s through appropriate programmes.

Rajasekar, D (1994) undertaken research on savings and credit system for the poor- some NGO experiences. The study pointed out that efficient SHGs are promoted by 13 NGOs in Karnataka, Andra Pradesh, Tamil Nadu, Orissa, Rajasthan and Gujrat. In view of since efforts of NGOs, many positive outcomes take place like adequate credit, quality services, high recovery rate, and reduction of dependence on money lenders get empowered. And Gupta and Namitha Gupta (2006) studied that the scholar pointed out that the government has to continue to allocate the resources and formulate the policies for women empowerment.

CONCLUSION

Hence, there is a significant shift in the developmental programmes and approaches that entail women to acquire control over themselves, their resources and take their own decisions. However, for effective implementation of this approach, the prerequisite is the realization by the women themselves, of their economic role and potential, and subsequently their economic self-reliance. In other words, women first of all must empower themselves. Therefore, efforts should be initiated to infuse confidence in them. Training programmes to enhance the skills, to have access to credit, educational inputs and improvement in the bargaining capacities, marketing skills etc., have to be conducted. The non-government organisations from India and from abroad, Government agencies and educational institutions have been putting all their collective and individual efforts.

Most of the study pointed out that SHGs are not working up to mark due to many constraints viz., lack of knowledge among SHGs members about selection of business, insufficient book keeping concept, illiterate, lack of self-confidence, lack of courage, lack of expressing opinion freely, lack of education, not in independency, less skills, less support from husband, members/relatives family etc., and lack of production skill, lack of awareness about supply of raw materials, problem of machine handling, less training, lack of knowledge about product planning, lack of knowledge about packages, less knowledge about product selling, lack of knowledge about technical know-how, problem of transportation, lack of access to credit sources, lack of loan arrangement, lack of knowledge about income generating activities, group management, not have of planning skills, not have organizing skills, not have co-ordination skills, lack of communication skills, lack of money management skills, lack of awareness about policies and programmes of Government, Banks and N.G.Os. From the overview of the existing literature, model and discussion on the SHGs(Self Help Groups) and empowerment of women, it is clearly visible that a comprehensive study on SHGs in Uttar Pradesh is very much required. This lacuna of the existing literatures on SHGs and

their role for women empowerment provides the basic importance of this study in Uttar Pradesh.

REFERENCE

LEXICAL FEATURES OF FOLKLORE

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ABSTRACT
In this article is discussed the lexical features of folklore. The history of the origin of folklore, famous figures and examples of their work are given. The stages of development of folklore are also discussed in detail. The term folklore or folklor, used in the scientific literature, includes examples of folklore that have been around for centuries. Folklore is closely connected with dialectology, history, ethnography, and archeology. The most important feature of fiction is the figurative depiction of human life in artistic form. Folklore, as an integral part of fiction, also expresses the centuries-old life, struggle and aspirations of the people.

KEY WORDS: folklore, art, oral, lexical features, dialectology, history, ethnography, archeology.

INTRODUCTION
One of the cultural heritage of the Uzbek people from ancient times to the present day is the oral creativity of the people. The term folklore or folklor as used in scholarly literature includes examples of folklore that have existed for centuries. The term folklore, first introduced into scientific literature by William Thomson in 1846, consists of two English words - "folk" and "lor", meaning the wisdom of folk wisdom.

Currently, it is called "Uzbek folklore" or "Uzbek folklor", and this term fully describes the content and purpose of this article. Folklore is the collective creativity of the people, which has evolved and continued for centuries. It vividly reflects the social life, history and struggle of the people. Indeed, the oral creativity of the people is an artistic reflection of the history of the people. Because the centuries-old history of creative people, their life experience, their attitude to natural phenomena, their attitude to social events are artistically expressed in the works of folklore.

MAIN PART
When talking about phraseology in folklore works, linguists distinguish the concepts of folklore phraseology and folklore phraseology as different concepts. In the first sense, phraseology is a limited collection of folklore that remains "only a means of artistic and linguistic expression."[2]

Folklore is closely connected with dialectology, history, ethnography, archeology. "Uzbek folklor" is engaged in the study and analysis of oral art that has developed among our people over many centuries; creativity of folk singers; ideological and artistic features of their works; system of images, means of artistic representation, problems of tradition and innovation in folklore, the influence of folklore on written literature. The most important feature of fiction is the figurative depiction of human life in artistic form. Folklore, as an integral part of fiction, also expresses the centuries-old life, struggle and aspirations of the people. However, folklore has its own specific features that distinguish it from written literature. Basically, they are: collective, oral, anonymous, variable, traditional.

Folklore is the product of a centuries-old creative process. The creative role of the collective in the development and polishing of works of oral creativity is great. Folklore works are created among the people by word artists. However, due to the fact that the creative process is closely connected with the folk (collective), their works have become collective. Secondly, each artist of the word made his own changes and additions to the works of folklore. As a result of the collective contribution, folklore works become the product of collective creativity.

Folklore works are created in the form of "badiha" by improvisation, passed from mouth to mouth, and spread. Badiha without special training, sudden words, poems, impromptu, folklore samples: folk songs, lapari are created using the badihi method. The eloquent statements of folk bakhshi are an example of improvisation. This feature of folklore is oral.

Folklore has been around for many centuries, and its original creator and performer is unknown. Since works of folklore are created orally, their original creator is often forgotten. In the process of oral creativity and as a result of the free attitude of the collective to the plot and content of a folklore work, many variants of this work arise. The variability of folklore works makes it possible to preserve these works for many centuries. Because the same plot is performed by different bakhshis in different places. Each performer is free to respond to one or another version of a folklore work, bringing the content of the work closer to the requirements of his time. As a result, dozens and even hundreds of variants of the same plot can appear in folklore. The diversity is clearly seen in the Alpomysh epic. This epic
has been used by professional and amateur performers for centuries.[4]

So, folklore is a product of collective creativity; passed from mouth to mouth, from generation to generation, new versions of it are created, each performer creatively approaches his work of folklore, makes various changes to the composition of the work, fills the plot with new images, visual aids, events, leads to images, events, visual aids which he doesn't like. New images, events, means of expression, which are included in the plot and composition of folklore, form a unique layer. Another characteristic of folklore is tradition. Folklore works preserve the elements of the living language of the people, the dialect features of the place of performance. A characteristic feature of many works of folklore is the presence in their compositional structure of some stereotyped sentences, similar to the model of poetry ("one is", “one is not”, “a bird named hawk” ...) images are often found (such as devas, ajina, efendi, yalmogiz), who move from job to job. Traditional folklore also preserves social events from different periods, political events and characteristics of social groups. In particular, the struggle of the Soviet people against the Nazi invaders was reflected in the works of folklore created during the Great Patriotic War, as well as in the works of XIV-XV fairy tales, gentlemen, anecdotes of Alisher Navoi, Amir Temur, Khoja Akhror.[3]

In the works of folklore, a wide range of folk fantasy is given, including the creation of artistic ideas, the idealization of heroes, universal ideas in the depiction of various magical miracles - patriotism, people's freedom, improvement, work experience, love and love, hatred of the enemy, the oppressor.

Due to the fact that folklore is inextricably linked with such types of folk art as music, games, dances, in the early years it was of a syncretic nature, and when performed it combined the skills of playing, music, and artistry. The oldest and richest history has developed into a variety of genres, such as epics, fairy tales, songs, proverbs, riddles, proverbs, askiya, folk oral drama, myth, anecdote. Folklore works were usually distributed not only among the peoples who created them, but also among neighboring peoples. For example, the Alpomishy epic is popular not only among Uzbeks, but also among Turkmen, Azerbaianis, Tajiks and Karakalpak. The image of the master is widespread in the folklore of the peoples of the East.[3]

Uzbek folklore had a great influence on the development of Uzbek classical literature. Some plots, images, means of artistic expression of folklore are somehow reflected in the Uzbek classical and modern literature. While there are features that distinguish folklore from written literature, they are both unique artistic expressions. Before the advent of written literature, folklore was known as the art of expression. As written literature began to take shape, folklore actively influenced its form and means of expression, its artistic features. That is why M. Gorky says that "the beginning of the art of speech is in folklore." Great poets and writers from ancient times made excellent use of folk art and created wonderful works of art. Classics of Russian literature A.S. Pushkin, L.N. Tolstoy, A.P. Chekhov, A.M. Gorky Classics of Uzbek literature A. Navoi, Z. M. Bobur, Gulkhani, H. Kh., A.Jami, H.Dehlavi and others love folklore, those who knew it, loved and successfully used examples of oral creativity; The creative influence of folklore in such works as "Shokhnoma" (Firdavsi), Haft Paykar (N. Ganjavi), "Khamsa" (A. Navoi), "Zarbulmasal" (Gulkhany), "Gul va Navruz" (Lutfiy) is clearly felt.[3]

Not only that, but written literature can have an effective influence on folklore. The role of poets, poets, storytellers, singers, clowns and humorists, storytellers, storytellers and anecdotes in the creation and preservation of folklore is enormous. Today in the development of Uzbek folklore such folk poets as Ergash Zhumanbulbul oglu, Islamic poet Nazar oglu, Muhammadkul Zhomrot oglu Polkan, Yusuf Gizik, Ismailov Jurahon Sultanov was very great.[5]

From the second half of the 19th century, the conquest of Central Asia by Tsarist Russia increased interest in local folklore. In this regard, it is enough to recall the collecting activities of H. Vamberi, N. P. Ostromoukh, A. A. Divaev, V. V. Radlov and others. They recorded some examples of Uzbek folk proverbs, fairy tales, anecdotes, songs and even epics. It should be noted that it is difficult to say that any of them did such a job with good intentions. Since the second half of the 19th century, interest in Uzbek folklore has intensified, and one can even say that it has acquired the character of internationalization. As a result, there is a connection between the collection and publication of samples of Uzbek folklore. In particular, due to the growing interest in the epic, some word artists began to rework folk epics, which led to the emergence of an intermediate phenomenon linking folklore with written literature - folk books. Dozens of folk books such as "Takhir and Zuhra", "Yusuf and Zulaikho", "Bakhrom and Gulandom", "Gulfarakh", "Sanobar", "Boz oglon", "Yusufbek and Ahmadbek" with such quality 2.0 Some branches of Uzbek folklore have gone through a long process of historical formation. In particular, M. Kashgari, the Greek historians Poliena ("Light") and Herodotus ("Tomaris"), Beruni did a great job of writing songs, legends and myths. In particular, the Uzbek proverb-paremigraphic has acquired such a historical tradition for almost a thousand years. In particular, the sphere of writing and publishing paremigraphic articles, which are an integral part of it, has developed and accumulated a lot of experience. Mahmud Kashgari, Abulkasim Mahmoud Zakamshkari, Muhammadsharif Gulkhani, Roji, Herman Vamberi and N.P. Ostromov played an important role in this. Therefore, we can say that Uzbek folklore as a science originates from the study of songs and proverbs. From the second half of the 19th century, a movement for composing and publishing Uzbek epics entered the field. This created the conditions for the emergence of epic studies in Uzbek folklore. Later, he began to collect and publish Uzbek folk tales, anecdotes and songs. As a result, Uzbek folklore emerged. Only at the end of the first quarter of the 20th century did Uzbek folklore become a real science: the collection, publication and study of folk art on a scientific basis. If earlier Uzbek folklore was mainly based on collection
and publication, now these processes are supplemented by research. In particular, since the 1930s, a combination of collection, publication and research began to play a significant role. Commission on Uzbek Knowledge of the State Academic Council of the People's Commissariat of Education of the Republic of Turkestan (1921-24), Commission for the Study of Uzbek Studies of the Scientific Center of the People's Commissariat of Education of Uzbekistan (1924-29), Uzbek State Research Institute (1929-30), Research Institute of Cultural Construction (1931-33) and finally. The Department of Folklore of the Institute of Language and Literature (1934-2009) played a special role. It is noteworthy that Uzbek folklorists paid special attention to the fact that such a rich example of folk art was recorded during direct performance. For example, in the summer of 1922, G. O. Yunusov, who was on a folklore expedition to the Tashkent, Syrdarya and Samarkand regions on behalf of the Uzbek Department of Education, read fairy tales, songs, proverbs, riddles from the Uzbeks living here, collected a lot of dialectological and etymological materials; For the first time in the history of Uzbek folklore, Fozil Yuldosh oglu and Khamrokul Bakhshi wrote an excerpt from the Alpomish epic. As a result of the expeditions of Gulom Zafari to the Ferghana Valley in 1921-22, and expeditions of Elbek to the Bostankyl district of the Tashkent region, many songs, proverbs, examples of oral drama, given to the 'plandi', were recorded. Some of these collected materials were published in 1925 in the form of the collection "Songs". In addition, Elbek "Laplarar" ("The Furnace of Knowledge", 1922, No. 1), Gulom Zafari "Chigatai-Uzbek Folk Theater" ("The Furnace of Knowledge", 1923, Bekjon Rakhmonov collected 564 proverbs and sayings from the Khorezm oasis and wrote "0'zbekcha otalar sozi" 1933) published a collection.[3]

Folklore plays an important role in the formation and development of the lexical system of the Uzbek language, embodying the features of folk speech and literary language, in addition to the direct meaning of the word, folklore contains figurative and emotional-evaluative tones, important for the life and history of the language at different times. The significance depends, first of all, on the lack of clear studies on the dictionary of Belarusian folklore; secondly, the question of its important role in the development of our normative language has not been sufficiently developed; thirdly, the originality of folklore is underestimated in relation to the dialect and normative language of its time. The study of folklore is also of scientific importance in terms of studying visual aids and identifying the features of folklore in relation to the dialect and literary language. The development of this problem became possible due to the identification and solution of the following tasks, including: The basis for the study was the texts of pre-revolutionary songs and fairy tales by some authors, as well as recently published collections of folklore in the series "Uzbek Folk Art", as well as their notes collected and systematized in the harsh conditions of that period. The lexical analysis of Uzbek folklore texts, on the one hand, made it possible to create the basis of their regional vernacular, on the other hand, from a linguistic point of view, the initial structure, which occupies a special place among vernacular and literary samples.[1] Uzbek language. In total, more than 100 lexical units were analyzed. At the same time, the comparison of the lexical nomenclature of folklore, dialect and literary language was carried out in a comparative way. The facts of the Uzbek language were used in the study of the relevant analyzed units, if necessary.

CONCLUSION

In Uzbek folklore, hexemes occupy a special place not only in terms of the semantic stability of dialect and normative use, but also in terms of the variability of meanings and their shades. Such an additional semantic dimension of many lexemes indicates that the folklore language preserves to a greater extent the local language flavor than other varieties of the Belarusian language, as well as regional features based on the traditions of earlier periods. As is known, the semantic structure of a word is determined by figurative and figurative usage. This variety of vocabulary is largely applicable to Uzbek texts. For example, the lexeme thin woman in folklore serves to designate "poor woman".

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HYBRID METHOD FOR IMAGE CLASSIFICATION

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INTRODUCTION
The work discusses regarding the performance ensemble based algorithms for image classification. Kather dataset were trained by machine learning techniques such as K-NearestNeighbour and deep learning algorithms by Xception models.

RELATED WORK
E.F.Ohata et.al(2021)[1] A novel transfer learning approach for the classification of histological images of colorectal cancer. The automatic identification of eight categories is proposed. tissues discovered during a CRC histological examination. The structures of CNNs to extract characteristics are discussed in this study. DenseNet169 with SVM was the one that got the greatest results (RBF). This method is capable of discriminating between tissues found in evaluation of the histopathology of a CRC.

Cascianelli et.al [2] proposed dimensionality reduction strategies for CNN based classification of histopathological Images. In this research paper, dimensionality reduction strategies for CNN-based features used in computer-assisted histopathological image categorization. Test two well-known methodologies (Principal Component Analysis and Gaussian Random Projection) and suggest a novel reduction strategy based on the cross-correlation between feature vector components. The results show that CNN-based characteristics can be reduced by a large factor with just a minor loss of accuracy when compared to the original values. In this paper, VGG-F, VGG-S, and VGG-VD-16 networks are employed, as well as feature selection methods such as Gaussian Random Projection, and Principal Component Analysis, and finally classification using a KNN classifier.

Wang et.al [3] proposed a novel BCNN-based technique for histopathological image classification that first decomposes histopathological pictures into hematoxylin and eosin stain components before applying BCNN to fuse and improve feature representation.

Pham [4] proposed a method in which Autoencoding has long been known in deep learning as a valuable approach for collecting picture features from several layers and then configuring them for classification by deep neural networks. The time required to train a large number of artificial neurons is a practical barrier to autoencoder implementation. This research examines the impacts of texture scaling in the histology of colorectal cancer, which can lead to a large reduction in training time, similar to that of an exponential function, and increased classification rates. For classification, the softmax classifier was utilised.

METHODOLOGY
1)Xception
Two convolutional layer blocks are followed by a ReLU activation in the input flow [5]. The number of filters, filter size (kernel size), and strides are all detailed in the diagram. Separable convolutional layers are also available. Max Pooling layers are also available. When there are more than one stride, the strides are mentioned as well. There are also Skip connections, where the two tensors are combined using 'ADD'. In each flow, it also shows the shape of the input tensor.

2)K-NN
Evelyn Fix and Joseph Hodges created K Nearest Neighbor in 1951. The outcome of the k-NN classification process is a class membership, which is based on the vote of neighbours. (The number k is a positive integer.) If k =1, the object's closest neighbours are one. The procedure is as follows:

1.Set k=n, where n refers to the number of neighbours. The number of neighbours here is one i.e, n=1.
2. Using a distance formula, calculate the distance between \( k \) neighbours. The distance formula can be Euclidean, Manhattan, or other.

3. Determine the closest neighbours based on the measured distance.

4. Count data points among \( k \) neighbours for each class.

5. Create new data points based on the most neighbours.

The features are retrieved using the Xception network, and the outputs are categorised using the \( k \)-nearest neighbour classifier with \( k=3 \).

RESULT

Evaluation metrics like precision, recall, f1-score are calculated and got an accuracy of 76 percentage.

<table>
<thead>
<tr>
<th></th>
<th>precision</th>
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<th>f1-score</th>
<th>support</th>
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**accuracy**

<table>
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<th>1000</th>
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</thead>
</table>

**macro avg**

<table>
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<th>0.78</th>
<th>0.76</th>
<th>0.76</th>
<th>1000</th>
</tr>
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</table>

**weighted avg**

|   | 0.77 | 0.76 | 0.76 | 1000 |
CONCLUSION
The image classification challenge was solved utilising the xception network for feature extraction and the k-nearest neighbour technique as a classifier. In the future, several hybrid techniques could be utilised for classification.

REFERENCES
TEXT VOCAL READER CLONING SYSTEM

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ABSTRACT
Voice cloning is the assignment of figuring out how to orchestrate the voice of a concealed speaker from a couple of tests. While current voice cloning techniques accomplish promising outcomes in Text-to-Speech (TTS) union for another voice, these methodologies come up short on the capacity to control the expressiveness of orchestrated sound. In this work, we propose a controllable voice cloning strategy that permits fine-grained authority over different style parts of the incorporated discourse for a concealed speaker. We accomplish this by expressly molding the discourse blend model on a speaker encoding, pitch form and inactive style tokens during preparing. Through both quantitative and subjective assessments, we show that our system can be utilized for different expressive voice cloning errands utilizing a couple of deciphered or untranscribed discourse tests for another speaker. These cloning errands incorporate style move from a reference discourse, combining discourse straightforwardly from text, and fine-grained style control by controlling the style molding factors during induction.

KEYWORDS: WaveNet, TTS, Vocoder, Spectogram.

I.INTRODUCTION
Ongoing examination efforts in voice cloning have zeroed in on combining an individual's voice from a couple of reference sound examples. While such a framework can create discourse from text for another speaker, it leaves out authority over different style parts of discourse. Unambiguous command over the style parts of cloned discourse is alluring for a few applications, for example, voice-overs in energized films, blending practical and expressive discourse for DeepFake recordings, interpreting discourse starting with one language then onto the next while protecting talking style and speaker character, promotion crusades with expressive discourse in numerous voices and dialects (and so forth) Expressive voice cloning frameworks can likewise help make customized discourse interfaces with voice aides in cell phones, vehicles, and home aides. Since discourse fills in as an essential correspondence interface between AI specialists and people, the capacity to talk expressively is a truly attractive quality for voice cloning frameworks. Moreover, such frameworks can possibly engage people who have lost their capacity.

II.LITERATURE SURVEY
The author describes Voice cloning is an exceptionally wanted element for customized discourse interfaces. We present a neural voice cloning framework that figures out how to incorporate an individual's voice from a couple of sound examples. We study two methodologies: speaker variation and speaker encoding. Speaker variation depends on fine-tuning a multi-speaker generative model. Speaker encoding depends on preparing a different model to straightforwardly surmise another speaker inserting, which will be applied to a multi-speaker generative model. Interms of naturalness of the speech and similarity to the original speaker, the two methodologies can accomplish great execution, even with a couple of cloning sounds. 2 While speaker At long last, we shouthis deduction with our system Transformation can accomplish somewhat better effortlessness and closeness, cloning time and required memory for the speaker encoding approach are significantly less, making it greater for low asset arrangement. [2] Voice cloning is the assignment of figuring out how to orchestrate the voice of a concealed speaker from a couple of tests. While current voice cloning strategies accomplish promising outcomes in Text-to-Speech (TTS) union for another voice, these methodologies come up short on the capacity to control the expressiveness of orchestrated sound. In this work, we propose a controllable voice cloning technique that permits fine-grained power over different style parts of the incorporated discourse for a concealed speaker. We accomplish this by unequivocally molding the discourse combination
model on a speaker encoding, pitch form and inert style tokens during preparing. Through both quantitative and subjective assessments, we show that our structure can be utilized for different expressive voice cloning errands utilizing a couple translated or untranscribed discourse tests for another speaker.

These cloning errands incorporate style move from a reference discourse, blending discourse straightforwardly from text, and fine-grained style control by controlling the style molding factors during deduction. [3] We present Deep Voice, a creation quality content to discourse framework developed altogether from profound neural organizations.

Profound Voice lays the preparation for really start to finish neural discourse amalgamation. The framework involves five significant structure obstructs: a division model for finding phoneme limits, a grapheme-to-phoneme transformation model, a phoneme term forecast model, a principal recurrence expectation model, and a sound amalgamation model. For the division model, we propose a novel method of performing phoneme limit identification with profound neural organizations utilizing connectionist fleeting classification (CTC) misfortune. For the sound combination model, we execute a variation of WaveNet that requires less boundaries and prepares quicker than the first. By utilizing a neural organization for every segment, our framework is simpler and more flexible than traditional text to speech frameworks, where every segment requires difficult component designing and broad area ability, can be performed faster than real time and portray streamlined WaveNet surmising kernel son both CPU and GPU that achieve 400x speed up over existing implementations.[4] In this work, we propose ParaNet, a non autoregressive seq2seq model that changes text over to spectrogram. It is completely convolutional and brings 46.7 occasions accelerate over the lightweight Deep Voice 3 at union, while acquiring sensibly great discourse quality. ParaNet additionally creates stable arrangement among text and discourse on the challenging test sentences by iteratively improving the consideration in a layer-by-layer way. Moreover, we assemble the equal content to discourse framework and test different equal neural vocoders, which can blend discourse from text through a solitary feed-forward pass. We additionally investigate a novel VAE-based way to deal with train the converse autoregressive flow (IAF) based equal vocoder without any preparation, which evades the requirement for refining from an independently prepared WaveNet as past work[5] We propose a neural book to discourse (TTS) model that can copy another speaker's voice utilizing just a limited quantity of discourse test. We exhibit voice impersonation utilizing just 6-seconds in length speech sample without any other information such as records. Our model likewise empowers voice impersonation immediately without extra preparing of the model. We executed the voice emulating TTS model by combining a speaker embedder network with a cutting-edge TTS model, Tacotron. The speaker embedder network takes another speaker's discourse test and returns a speaker inserting. The speaker inserting with objective sentence are taken care of to Tacotron, and discourse is produced with the new speaker's voice. We show that the speaker embeddings removed by the speaker embedder organization can address the dormant construction in different voices. The generated speech samples from our model have practically identical voice quality to the ones from existing multi-speaker TTS models. [6] This paper introduces WaveNet, a deep neural network for generating raw audio waveforms. The model is fully probabilistic and autoregressive, with the predictive distribution for each audio sample conditioned on all previous ones; nonetheless we show that it can be efficiently trained on data with tens of thousands of samples per second of audio, promising results for phoneme recognition.

III.WORKING METHODOLOGY
The three main components Speaker Encoder, Mel Spectrogram Synthesizer and Vocoder are all trained separately

WaveNet
WaveNet is a deep neural network for generating raw audio. It was created by researchers at London-based artificial intelligence firm DeepMind

Speaker Encoder
Speaker encoding is based on training a separate model to directly infer a new speaker embedding, which will be applied to a multi-speaker generative model. In terms of naturalness of the speech and similarity to the original speaker, both approaches can achieve good performance, even with a few cloning audios.
III. WORKING FLOW

**Figure 1: work Flow**

**Mel Spectrogram Synthesizer**
A spectrogram is a visual representation of the spectrum of frequencies of a signal as it varies with time. When applied to an audio signal, spectrograms are sometimes called sonographs, voiceprints, or voicegrams.

**Vocoder**
A vocoder combines a recording of a human voice with a synthesized waveform to produce a robot-like effect. The Audacity free, open-source audio editing program includes a vocoder plug-in that you can use to produce this effect. The vocoder then modulates the left-hand channel with the right-hand one.

IV. RESULT AND DISCUSSION

1. Given a small audio sample of the voice we wish to use, encode the voice waveform into a fixed dimensional vector representation.
2. Given a piece of text, also encode it into a vector representation. Combine the two vectors of speech and text, and decode them into a Spectrogram.
3. Use a Vocoder to transform the spectrogram into an audio waveform that we can listen to. Generative models of sound information that work straightforwardly at the waveform level, WaveNets are autoregressive and consolidate.

V. CONCLUSION

This paper has introduced WaveNet, a profound causal filters framework with expanded convolutions to permit their open fields to develop dramatically with profundity, which is critical to demonstrate the long-range transient conditions in sound signs. We have shown how WaveNets can be adapted to different contributions to a worldwide (for example speaker character) or nearby way (for example etymological highlights). At the point when applied to TTS, WaveNets delivered tests that beat the current best TTS frameworks in abstract effortlessness. At last, WaveNets showed exceptionally encouraging outcomes when applied to music sound displaying and discourse acknowledgment.
ACKNOWLEDGMENT

I should convey my real tendency and obligation to Dr MN Nachappa and Dr Murugan R and undertaking facilitators for their effective steerage and consistent inspirations all through my assessment work. Their ideal bearing, absolute co-action and second discernment have made my work gainful.

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PERMEABILITY STUDY OF HARD TISSUE FOR DIFFERENT TOOTH ANTISEPTICS ON THE STAGE OF DRUG TREATMENT DURING ENDODONTIC PREPARATION OF ROOT CANAL

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ABSTRACT
The problem of antiseptic processing root canal during endodontics for the treatment of periodontal disease is dealt with in the article. Perfusion activity of various antiseptics (hypochloran, chlorhexidine, dimephosphon) is studied, their comparative analysis is performed. According to the result dentin is the most permeable to dimephosphon and hypochloran, the least - for chlorhexidine. The author remarks the unevenness of dentin permeability in the mesial distal and vestibular oral direction.

KEYWORDS: antiseptics, endodontology, permeability, dentine, parodont.

INTRODUCTION
The basis of modern drug treatment of inflammatory periodontal diseases is the use of antibacterial drugs, in particular local usage antiseptics [5,10]. Neither one endodontic intervention is not complete without antiseptic treatment of the root canal [2]. Unfortunately, dentists use only 1-2 types of antiseptics. The most commonly used is chlorhexidine [3,9]. However, at the present stage of development of pharmacology, the group of antiseptic agents is widely represented. There are many agents that can be used for drug treatment of root canals: hypochloran, miramistin and others.

The problem of periodontal disease remains one of the leading ones in modern dentistry and general medicine [8]. In the structure of periodontal diseases, periodontitis is the most common and severe. According to epidemiological studies, this disease affects from 64% to 98% of the population of our country, being one of the main causes of tooth loss [7].

Currently, the importance of microbial and immune mechanisms in the development of periodontitis is most justified [5].

The current level of scientific knowledge about the etiopathogenesis of periodontitis determines the periodontal microflora as the dominant factor. Associations of opportunistic and pathogenic bacteria, developing in the periodontal pocket, contribute to the destruction of the periodontal apparatus and resorption of the alveolar bone.

Colonization of the gingival sulcus by a number of opportunistic and pathogenic bacteria greatly increases the likelihood of not only local pathological changes, but also serves as the cause of the formation of various somatic diseases [4]. Despite the obvious relevance, the problem of the spread of infection in periodontal diseases and under the conditions of the applied therapy remains insufficiently studied. Even less is known about the selection of methods for effectively influencing oral bacteria that are part of biofilms. Thus, the prevention of the spread of infection and the fight against colonization by bacteria that can cause periodontal disease remains extremely relevant.

In modern dentistry, the treatment of inflammatory periodontal diseases is carried out using therapeutic, surgical and physiotherapeutic methods, but their diversity does not always allow a positive result to be achieved, which, in turn, necessitates the development and improvement of new methods of treating this pathology [1,3].

THE PURPOSE OF THE STUDY was to evaluate the perfusion activity of various antiseptics through the hard tissues of the tooth at the stage of drug treatment of the root canal of the tooth in the treatment of periodontal diseases.

MATERIALS AND METHODS RESEARCH
To achieve this goal, the upper central incisors were selected with a diagnosis of chronic apical periodontitis (ICD 10-K04.5). The root canals of all freshly extracted teeth were hermetically sealed according to the rules of the Step technique. Back and divided into 4 groups for further work. The control group was treated with 0.9% sodium chloride solution, the second - Dimephosphon, the third - Chlorhexidine, the fourth - Hypochloran. Everything The teeth were hermetically sealed with a composite material of light polymerization (Ionoseel). In the future, the possibility of penetration of antiseptics beyond the tooth was determined (according to the method of
Artyunov S.D. 2006 G.), and degree penetration antiseptics v within solid tooth tissues (method of introducing antiseptics together with a dye).

RESULTS RESEARCH AND THEIR DISCUSSION

It was experimentally revealed that not a single substance penetrated the limits of the hard tissues of the tooth. The degree of penetration of antiseptics within the hard tissues of the tooth varies significantly. More pronounced dentine permeability was noted for two preparations: Dimephosphone solution and Hypochloran solution. These preparations were 1.2 times higher than that of sodium chloride solution. The lowest permeability was found for Chlorhexidine solution, which was 0.9 times that of the control group. As a result of the experiment, uneven dentin permeability for all studied preparations was revealed: 1.3 times more in the mesiodistal direction compared to the vestibulo-oral direction, which may be due to the peculiarities of the dentin structure (different density of the dentinal tubules) (Table and Fig.).

<table>
<thead>
<tr>
<th>Antiseptic</th>
<th>Mesio-Distal Direction</th>
<th>Vestibulo-Oral Direction</th>
<th>The Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solution chloride</td>
<td>53.3625</td>
<td>37.7625</td>
<td>45.5625</td>
</tr>
<tr>
<td>sodium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypochloran</td>
<td>64.275</td>
<td>47.475</td>
<td>55.875</td>
</tr>
<tr>
<td>Dimephosphone</td>
<td>65.3625</td>
<td>46.975</td>
<td>56.16875</td>
</tr>
<tr>
<td>Chlorhexidine</td>
<td>47.61667</td>
<td>40.25714</td>
<td>43.936905</td>
</tr>
</tbody>
</table>

CONCLUSIONS

1. The studied antiseptics do not have sufficient perfusion activity to penetrate beyond the limits of the hard tissues of the tooth.
2. The highest degree of penetration into the dentin was found in Dimephosphone and Hypochloran.
3. Solution Chlorhexidine marked how least aggressive a drug.
4. The permeability of dentin is uneven in different directions from the root canal: in the mesio-distal direction it is greater than in the vestibulo-oral direction.

LITERATURE

DEVELOPMENT OF EDUCATION IN THE TURKESTAN GENERAL PROVINCE AT THE END OF THE XIX - EARLY XX CENTURIES
(On the example of the Ferghana Valley)

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Andizhan State University, Republic of Uzbekistan

ABSTRACT
The article describes the changes in education at the end of the first decade of the twentieth century and their causes associated with the spread of Jadidism and new method Muslim schools. The latter, combining a modernized system of studying Islam and elements of secular education, began to be perceived by the authorities as a threat to the spread of pan-Islamism and pan-Turkism in the region. But despite the changes, the main sources of literacy and education of the population of the Ferghana Valley were traditional educational institutions, that is, maktabs and madrasahs, which existed not at the expense of the state budget, but from public funds.

KEYWORDS. Maktab, karykhana, madrasah, mosque, education, otin oyi, waqf, state, calligraphy, khujra, mudarris, mutavaliy, mullah, mufti, qaziy, usuli jadid, panislamism, panturkism.

INTRODUCTION
In the second half of the nineteenth - early twentieth centuries. traditional schools functioned on the territory of Turkestan - maktabs, kar-khana and madrasahs. There were many of them, and basically they were centers of education, providing primary, secondary and, in part, higher education. The Turkestan governor-general Mishchenko pointed out that a dense network of maktabs and madrasahs covered the entire territory of the region [1].

In the Ferghana Valley, as in all of Central Asia, traditional schools appeared with the spread of the Islamic religion here. They were in all cities and villages. In maktabs, girls and boys were taught separately. Boys studied in maktabs at the mosque, madrassas and karykhans, and girls studied with “otin oyi”, that is, with teachers.

METHODS
Maktabs for girls were located in the house of otin oyi or in the house of some rich person who had girls of school age. Girls were trained in approximately the same program as boys, but there were some differences. In women's maktabs, the works of Tajik and Turkic poets and writers were studied more, instead of the texts of the Koran. Their other originality was that in these schools girls were taught women's duties at home and behavior in society. In rural areas, there were very few such schools, unlike cities.

RESULTS AND DISCUSSIONS
Maktabs were not maintained at the expense of the state treasury, since they were opened not by the state, but by the public. Teachers received payment for their education from the parents of students or from public funds, that is, from waqf funds.

According to the ancient norms of Shariah, a certain tuition fee was not established, and teaching children to read and write was considered a charitable deed [2].

The number of students in rural maktabs at the mosque reached 10-20, and in urban - up to 50-60 people. In the Fergana region, there were 1143 such maktabs, there were still kar-khans - 312 and madrasas – 159 [3].

Classes were held from sunrise to 4-5 o'clock in the afternoon, except for Fridays and public holidays. There was a change twice a day. In the summer, the students went on vacation for two months. Classical maktabs did not have a classroom system, as classes were conducted individually. Pupils learned to write only when they fully learned to read [4].
The quality of education largely depended on the requirements of the founders and trustees of the educational institution, as well as on the professionalism of teachers. Muslim maktabs instilled in their students one good side - outward orderliness, accompanied by modesty and respect. Another good side of the Muslim maktab was that it did not destroy family rules and traditions in students, did not instill in them new habits and needs, and thus did not tear children away from the everyday environment, as a result of which those who did not complete the course in maktab returned home with unperturbed ideas. about life and calmly accepted for personal labor (agriculture, trade, handicraft), according to the living conditions of their own family [5].

The children of the poor completed their education in primary schools. Children from wealthy families continued to study for another 8 years. After graduation, some of the graduates used their knowledge in trade matters, some made calligraphy their profession, and the most capable entered the madrasah.

Those who graduated from this school had the right to continue their studies in the madrasah - the highest confessional school in the Muslim East.

The second stage of education was madrasah, or secondary or higher schools, which, as a rule, existed only in cities and large villages. The word "madrasah" (madrasah) in Arabic means "place for learning", "school" [6].

Madrasahs, in terms of construction and material support, were divided into khan, eshan and private, and due to the size of the waqf property and the number of hujras - into large, medium, small and mosque madrasahs. The maintenance of the buildings of such madrasas and the payment to teachers (mudarris - in Arabic "teacher") were carried out from the income of donated property - waqfs. Supervision of the economy was carried out by special people - mutawalivy.

The curriculum of the madrasah included the study of Arabic grammar, theological and legal literature, as well as books on metaphysics, cosmography, astrology, geography, history, medicine and mathematics.

The entire course of study in the madrasah lasted 10 years. Its graduates were mainly ministers of mosques and teachers (mullahs) of maktabs. But among them, the most capable and punchy occupied the position of mudarris - teacher of madrasah, qaziyy - judge-interpreter of Muslim law and mufti - the highest Muslim cleric who had the right to make decisions on religious and religious-legal issues. Those who wanted to receive a more complete theological education went to Turkey, Egypt or India [7].

Along with Muslim maktabs, Russian-native schools operated in parallel throughout the Turkestan region. Back in 1868, the first Turkestan Governor-General Kaufman proposed to take as the basis for raising children not religious difference, but the same rules, with the help of which both Orthodox and Muslims can be made equal useful citizens of Russia [8]. Thus, the task of public education in the region was defined. A special commission appointed in 1870 to discuss the issue of organizing an educational unit in the region, guided by the instructions of the chief commander of the region, expressed this idea in detail as follows: “The main provision of the task of public education in the region should be its development in the direction of Russian interests, which mainly in the development of the economic side of the life of the non-Russian population, its citizenship and the solidarity of its aspirations with the foundations of Russian state life, and the religious convictions of the natives must remain without any encroachment [9].

Governor-General Kaufman, for this purpose, chose the tactics of "ignoring" the traditional Muslim school (maktabs and madrasas) in the expectation that it would not withstand competition with the "more progressive" Russian school. However, M. G. Chernyaev, who replaced Kaufman, launched an offensive against the Islamic school, proposing to introduce the Russian language and other subjects into the program of the new madrasah.

N. O. von Rosenbach, who took over the post of the chief head of the Turkestan region in 1884, considered it necessary to exercise great caution in relation to religious schools. As an alternative to them, he proposed the idea of Russian-native schools. The Muslim schools themselves were nominally placed under the control of the administration. But the hopes of the Russian government were not justified, since the old Muslim school and Islam in general turned out to be much stronger than they expected. In remote rural areas, children usually studied in elementary Muslim maktabs, less often in madrasas. The tsarist government periodically tried to take steps to block the opening of new Muslim schools. However, despite all the restrictions, Muslim schools opened everywhere in the region. In the Fergana region in 1892 there were 120, and in 1911 - 204 madrasas, which indicated a doubling of the number of madrasahs after joining Russia. In remote areas, maktabs often functioned “illegally”, i.e. without the written permission of the authorities, and therefore, such establishments were not amenable to accurate accounting [10].

Russian policy towards traditional Muslim education in Central Asia from 1876 to 1907, changed drastically. If in 1876 it seemed that “Russian influence in the East presented an important and lofty task to break the mental fetters of Mohammedanism and introduce the natives to the life of mankind”[11], then in 1907 the Muslim school was compared with the ancient Russian Christian one, and the course of the madrasah was recognized as “very serious, considering the real needs of the people’s life” and subject not to a radical breakdown, but to a gradual and careful evolution in the sense of “streamlining the education system and updating the knowledge itself in such sciences that do not concern religious belief”[12]. For this reason, the Russian authorities in the Turkestan region, primarily in remote rural areas, taking into account the confessional situation in the newly conquered lands, did not take steps to spread Orthodoxy there. The activities of Orthodox missionaries in Central Asia were banned.

Although the Muslim education system covered a large part of the population, and each child received certain...
skills and knowledge, in general, the literacy rate in rural areas remained very low. Since the main population of the villages consisted of farmers who were not able to create conditions for their children to study because of the constant agricultural work, where children played an important role.

At the end of the nineteenth century, in Turkestan, new method schools began to emerge - “usuli zhavid”. The patrons of these schools were the Jadids - a group of enlightened Muslims of Turkestan who dreamed of reviving the national culture and political independence of their peoples, introducing them to modern life, to the achievements of world civilization and progress. New method schools appeared somewhat later than Russian-native schools, in the 1990s. Nineteenth century The first new method school in the Ferghana Valley opened in 1897 at a cotton gin in the vicinity of Andizhan. Then the same schools began to open in other cities and villages throughout the valley. In 1898, in Kokand - Salahiddin domla (teacher), in Tashkent - Mannon-kari, in Andijan - Shamsudin domla, Jadid schools were opened.

The number of Jadid schools grew rapidly. According to official data of 1908, there were 30 Jadid schools in the Turkestan region, in which 1300 students studied, by 1911 their number increased to 63 with 4106 students. The number of schools in reality was much greater, the tsarist government was not able to keep records of schools opened by private individuals. The main reason for the increase in new method schools was the economic factor: as a result of the development of industry and trade in Turkestan, especially cotton growing, the emergence of a new layer of society accelerated - wealthy entrepreneurs capable of conducting trading operations involving thousands, sometimes even millions of monetary units, having profitable shares, valuable paper and high-yield land. As a result, new economic relations appear and the need for competent personnel - accountants, translators, clerks, etc. For this reason, most of the new schools were opened in the territories of cotton mills and houses of large merchants. For example, the first Jadid school in Andijan, as noted above, was opened in the building of the Sultanmuradbay cotton gin plant with the personal money of Abdugafur Amin. In the surrounding villages of Andijan, there were 15 new method schools, 12 of which were opened in the homes of rich people, 2 in the mosque building and 1 in a special building [13].

The following tasks were set for the new method schools: 1) to provide the younger generation with the knowledge necessary in modern conditions; 2) be guided by modern teaching methods different from the old-method schools. One of the positive methods of these schools was the transition to lesson-class teaching. In the lessons, especially history, visual aids were used: that is, modern maps of the world, globes, etc. For the learning process, the cleanliness and illumination of classes, sitting at desks, and changes between lessons were of great importance. New method schools were also distinguished by the fact that in the first half of the day they studied subjects of religious content, and the second - secular sciences (that is, civil).

At the end of the first decade of the 20th century, the Turkestan administration was forced to pay the most serious attention and reconsider its assessment of traditional maktabs and madrasahs. This happened precisely in connection with the spread of Jadidism and new method Muslim schools. The latter, combining a modernized system of studying Islam and elements of secular education, began to be perceived by the authorities as a threat to the spread of pan-Islamism and pan-Turkism in the region. The reaction to this was the measures taken by the regional authorities (not officially supported by St. programs and textbooks from the authorities. All this was supposed to put the new method maktabs and madrasahs under the control of the Russian administration.

CONCLUSION

In conclusion, first of all, it can be noted that the main sources of literacy and education of the population of the Ferghana Valley were traditional educational institutions, that is, maktabs and madrasahs, which existed not at the expense of the state budget, but from public funds. The purpose of their curriculum was to educate students from a real intelligent person who possessed such high moral qualities as prudence and modesty, especially inherent in the eastern peoples.

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THE HISTORIOGRAPHIC REVIEW OF THE HISTORY OF FORMATION AND ACTIVITY OF TURKESTAN STATISTICAL SERVICE

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ABSTRACT
This article analyses research works devoted to the issue of studying of the history of formation and activities of the statistical service of Turkestan. Besides, in this research the main positions of modern source studies and historiography received scientific justification. Consider this on the example of the history of the creation and activities of the statistical service in Turkestan.
KEY WORDS: statistics, source, information, statistical materials, committee, research, colonial policy, science, review, history.

INTRODUCTION
The transformation of the scientific positions of historians towards an objective, truthful presentation of historical events, the disclosure of bypassed problems of source studies and historiography, has become a significant achievement of historical thought in post-Soviet society. As a result, the main positions of modern source studies and historiography received scientific justification. Consider this on the example of the history of the creation and activities of the statistical service in Turkestan.

RESEARCH METHODS
Our historiography does not yet contain a summary essay characterizing the activities of the statistical committees, although it is of undoubted interest to workers in the social sciences, since these committees paid much attention to the study of the economic life of the cultural history of the peoples of Central Asia.

RESULTS AND DISCUSSIONS
The whole layer of research, reflecting certain facets of the issue under study, is subdivided in the problem-chronological order into the following groups: 1) works published during the colonial period; 2) research literature of the Soviet period; 3) publications of the period of independence. The publications included in the first group contain primary information about the history of the formation and activities of statistical committees in Turkestan and allow you to create a personal idea of the era of the emergence and development of statistics and related processes. Of greatest interest in this respect are the works of A.V. Bunyakovsky, M.A. Terentiev, N.I. Malakhovskii. The most valuable and significant event is the publication of the book by A.V. Bunyakovsky [1]. (“On the space and population of the Turkestan region”). In the process of conquering Central Asia, the Russian authorities began a comprehensive study of the region, with the main attention being paid to issues of military strategic importance - geography and topography, the state of communications, description of roads, passes, bridges, collecting information for compiling maps of the region. These include the works of: N. Maev “Essays of the Bukhara Khanate” [2, 77-328]. A. Galkin “A brief military and statistical essay of an officer of the General Staff of the TVO in 1889 in the Bukhara Khanate and in the southern part of the Samarkand region” [3, 1-47]; “Materials for the statistical description of the Ferghana region. The results of land-tax works”, “Military-statistical description of the Turkestan military
district”, etc. The study of the historiography of the issue allows us to highlight the three-volume work of the military historian M.A. Terentyev [4]. The work was written on the basis of an analysis of documents on the history of aggressive actions and the political and administrative structure of Turkestan, documents of the Turkestan military district, the Office of the Turkestan Governor General and the Military Ministry of the Russian Empire. The work is supplied with applications - military topographic maps of the region, statistical materials and biographical information about people who collected information on statistics. During the colonial period, a number of studies appeared related to the coverage of the economic life of Turkestan, in particular, the Ferghana region, based on the materials of the regional statistical committees. The authors of these studies [5]: V.I. Masalsky, N.P. Fedorov, A. Stetkevich, A.I. Shakhnazarov, V.I. So, N.I. Malakhovsky in his work, based on the data of statistical committees, presented information about the wealth exported from the region [6]. This approach is also typical for the work of S.I. Gulishambarov [7].

On the basis of statistical materials, they analyzed: the economic state of the region, its productive forces, agriculture, domestic and foreign trade, the state of industry. The state of the cotton-cleaning industry is described in particular detail and forecasts are given regarding its further development. From the theoretical works of Russian statisticians of the second half of the XIX - early XX centuries, especially important were special courses and textbooks on the theory of statistics, developed by professors of universities and other higher educational institutions in Russia. They contributed to the formation of views on the statistics of more than one generation of practitioners in this field. The most prominent representative of Russian statistical science in the second half of the 19th century was Yu.E. Yanson, a professor at St. Petersburg University. The author of numerous works, he deserved special recognition of his contemporaries, thanks to his university course on the theory of statistics, published in 1885 and for many decades served as the main textbook in higher educational institutions [8]. Among the statisticians of the first group, professors A.I. Chuprov (1842-1908). They were directly involved in statistical surveys and in their work many questions of statistical theory were solved on the basis of the experience of statistical research. So, the statistical science of the second half of the XIX - early XX centuries. made significant progress in its development. Russian scientists contributed quite a lot of new things to the development of its theory, and the idea of statistics as a social science was not only recognized, but was also significantly developed in the works of its most prominent figures. The second group includes the historiography of the Soviet period, in which the “class” approach, based on Marxist-Leninist theory, reigned supreme. The class approach to the problem under study gave rise to a tendentious and one-sided coverage of it in Soviet historiography and led to the appearance of falsified statistical data on population, local and general censuses, on calculations of national income per capita, etc.

Nevertheless, the informational and scientific significance of literature Soviet period is ambiguous. For this work, the works of the famous economist A.P. Demidov [10], published in the 20s of the 20th century, were of great interest. Using the materials of the official reports of the colonial authorities, he highlighted issues related to the development of the cotton industry, cotton trade and industry in Turkestan. In the 1920s, a number of works were published: G. Safarov, T. Ryskulov, P. G. Galuzo, V. Lavrentiev [11]. They covered the situation of the indigenous population of Turkestan, the “bourgeois colonization” of the region, the socio-economic situation of the Turkestan village; gave a description of the colonial system of power, individual Russian institutions and government agencies and exposed the negative consequences of Russia’s colonial policy.

Since the mid-1930s, the leading trend in historiography over the period under study has been its total politicization, which has led to the fact that the social sciences have practically lost their original functions. Their relative revival began only in the mid-1950s, which was facilitated by the partial removal of the secrecy regime in the archives and the expansion of researchers’ access to documentary sources. From the standpoint of this concept in the 60s - 80s of the twentieth century, a number of fundamental works on the history of colonial Turkestan were published, which made a certain contribution to the enrichment of the source base of the problem. In the studies of A. Aminov, M. P. Vyatkin, A. P. Savitsky, A. S. Sadykov, A. Yuldashev, N. A. Khalfin, H. Z. Ziyaev, M. I. Vekselman and others, the key directions of the history of the tsarist colonization of Turkestan and Central Asia as a whole. Despite the new concept, they focused their attention on topical issues of the socio-economic situation in the region and the negative consequences of joining Central Asia to Russia. A detailed analysis of the most subordinate reports of the governors was carried out by B.G. Litvak [12].

A special place in the work of the researcher is occupied by the analysis of statistical applications to reports and the determination of the degree of reliability of this source. V.A. Berlinskikh studied the activities of provincial statistical committees in the context of the development of Russian historical science [13]. The author analyzed the phenomenon of provincial historiography and showed the participation of statistical committees in its formation. He paid special attention to the leading role of the secretary of the committee, as the organizer of scientific research in the province. In the studies of N.M. Balatskaya and L.I. Razdorsky [14], the history of creation, structure and
informative possibilities of the “Commemorative Books” published by provincial statistical committees are considered. A general review of publications of provincial statistical committees is presented in the work of A.P. Shpak [15, 38-40]. Particular attention is paid to the study of the development of book publishing in the Russian provinces and the role of provincial statistical committees in the development of cultural life in the provinces. The publishing activity of the statistical committees of the Turkestan region is described by B.V. Lunin [16, 30-39]. In the article “From the history of the activities of the statistical committees of the Turkestan region” the author showed the role of statistical committees in collecting and studying materials on the nature, economy, culture and history of Turkestan. Particular attention is paid to regional surveys with detailed information about the national economy, irrigation systems, communication routes, taxes and taxes, health care and education. Such aspects of local history activities of regional committees as archaeological research, protection of historical and cultural monuments and publishing were studied by I.I. Komarova [17, 11-12]. The study by I.I.Komarova is devoted to the characteristics of the main areas of activity of regional committees. The author pays special attention to such aspects of local lore activities of committees as archaeological research, protection of historical and cultural monuments, and publishing. I.I.Komarova, on the basis of a comprehensive analysis of various types of publications, showed the illegitimacy of the opinion established in historiography about the low quality of scientific works of committees. The article by A.Kh. Ayubzhanov [18, 52-60] examines the socio-economic activities of statistical committees. Information on the history of statistics is also reflected in the works of foreign researchers. So J.V. Nixon [19] studied the issues of international comparability of statistical data, the project of creating an international statistical organization (International Statistical Institute, ISI), and the role of Russian statisticians P.P. Yanson in the organization of the International Statistical Institute. The work of Corrado Gini [20] shows the process of development of statistical methodology; its application to various branches of the social sciences (demography, economics, trade). Decisive changes in the nature and methodology of scientific knowledge were determined in Uzbekistan after gaining independence, when it became possible to create works in a new conceptual key, based on scientific principles generally accepted in world historical science. Among the works of the third group, covering from new methodological positions the issues of the colonial and socio-economic policy of the Russian Empire, it is necessary to name the works of N.A. Abdurakhimova, D.A. Alimova, F.B. Ishakov, Sh.S. Gafforova, G.A. Akhmedzhanova and others [21]. The monograph by N.A. Abdurakhimova reflects the essence, characteristics and features of the colonial system of power in Turkestan, the specifics of the relationship between the system and Turkestan society, the history of state institutions, the role of Russian bureaucracy in pursuing colonial policy. F.B. Ishakov showed the imperial practice of implementing the national policy of the colonial power in Turkestan, including in the aspects of economic transformations aimed at exploiting the economy and the masses in the interests of the metropolis. Sh.S. Gaffarov, revealing in his monograph the problem of the resettlement policy of the Russian Empire in Turkestan, used the statistical data of the Samarkand, Syrdarya and Ferghana governments and conducted a comparative analysis using other types of sources. In the work of N.U. Musaev, from new methodological positions, the process of formation of industrial production in the regions of the Turkestan region, including the Ferghana region, is shown. In the second chapter of N.R. Makhkamova’s dissertation work, the transformation of the social stratification of society is analyzed in a historical retrospective, and the directions of the social composition of the society of the indigenous population of Turkestan after the conquest by the Russian Empire are identified [22]. All the above-mentioned works testify to the fact that a huge layer of publications has appeared, distinguished by the novelty of methodological approaches and a new reading of historical sources.

CONCLUSION

At the same time, the analysis of these works shows that with all the variety of problems raised by scientists of the republic, the topic of creating a statistical service in Turkestan and its activities in the late XIX - early XX centuries, remains little studied. Unfortunately, an integral study has not been created that would comprehensively study the history of the formation and activities of the statistical service in Turkestan with its characteristic general and special tendencies.

REFERENCES

OPTIMAL OPTIONS FOR DYEING ASTRAKHAN SKINS

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ANNOTATION
The article describes the improvement of the marketable appearance of karakul skins, the improvement of processing technology of karakul to improve the durability of the finished product to various physical and chemical effects, opinions on the best options for applying and coloring dyes are expressed.

KEYWORDS: karakul hide, fur dyeing, lightfast, dyeing solution, welding temperature, composition of dyeing solution, components, optimal options, hair cover, oxidizing dyes, chromium oxide.

Uzbekistan’s fur industry is one of the leading industries in the production of quality karakul leather. Our country is famous for karakul skins, especially Bukhara karakul. Processed skins are exported to developed countries.

Biological variability of the hair and skin of caracal fur skins depends on their habitat conditions, on the geographical distribution and climatic conditions, on the age and sex of the animal, on the manifestations of individual variability of animals, and so on [1].

Purebred Karakul is defined by GOST 9296-74 and sorted according to the following characteristics: the hair cover of different degrees of silkiness and shine, consisting of astrakhan curls of different shapes, covering the entire wool area; the neck is covered with astrakhan curls with hair length in a straightened state not exceeding 30 mm; the hair cover of the head and legs has moire pattern or curls. Oxidizing dyes are also used to dye furs. Although these dyes are not dyes themselves, they oxidize during the dyeing process to form true dyes [2].

The development of the chemical industry has created great opportunities for the production of new preservatives, antiseptics and other chemical reagents, and the development of equipment has created great opportunities for the mechanization of raw materials and more technological processes of leather and fur production[3].

Dyeing Karakul skins with oxidizing dyes was applied in two ways: by dipping and dipping. In practice, the dipping method is used. For scientific research, samples of black Karakul skins, 4×10 cm for asymmetrical fringe method were made.

When dyeing the samples of karakul skins with oxidative dyes, each dye was pre-dissolved in water (ratio 1:10) at 80-90°C. The prepared solution is sieved and one by one poured into special containers. Perhydrol is diluted with water 1:5 and added 30 minutes after sampling. This helps to even out the color. Liquid ratio (s.c.-11), temperature 35-38°C, the process is completed in 1 hour. Methods of rubbing, stenciling and reserving methods of karakul skins are not dyed, because these methods do not provide economic benefits for karakul skins.

Black aniline stains fur, but since aniline itself is a volatile toxin, it is very dangerous to work with, so this method is not used for dyeing astrakhan skins.

Although aniline dyeing is also characteristic of oxidizing dyes, it has a number of important features. Aniline dyeing is mainly used to produce a deep black color. However, due to the fact that this color is not lightfast and the dye deteriorates the fur tan fabric, this method can only be carried out by smearing. The finished dye was smeared on the fur coating, laid, dried and shaken; the second time the fur semi-finished product was smeared, laid, dried and shaken again.
Table №1
Component dye solution composition, g/l

<table>
<thead>
<tr>
<th>Component</th>
<th>Dye solution composition, g/l</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First anointing mixture</td>
</tr>
<tr>
<td>Aniline salt</td>
<td>60</td>
</tr>
<tr>
<td>Copper sulfate</td>
<td>15</td>
</tr>
<tr>
<td>Bartolethal salt</td>
<td>25</td>
</tr>
<tr>
<td>Ammonium chloride</td>
<td>7.5</td>
</tr>
<tr>
<td>Wetting agent</td>
<td>1</td>
</tr>
</tbody>
</table>

Two different dye solutions have been developed. The first consists of aniline salt and wetting agent, the other consists of copper sulfate, bartole salt and ammonium chloride. Dyeing is carried out at a temperature of 25°C. Both solutions were mixed and applied to the wool cover at 2/3 height.

After application of the solution, the woolen skin along the backbone was laid face inward and placed on racks. Process duration was 6-8 hours, temperature 25-30°C was laid in three zones.

Process parameters:
- zone 1 temperature 40°C, relative humidity 40%;
- zone 2 temperature 45°C, relative humidity 70-80%;
- zone 3 temperature 45°C, relative humidity 70-80%;
- zone 4 temperature 45°C, relative humidity 40%;

The aniline dyeing process is time-consuming, space-intensive and labor-intensive. Therefore, this method is not widely used.

Furs dyed with nylon dyes are more resistant to light and have a softer skin. This method did not produce the expected results with respect to samples of caracal skins. This is due to the fact that during dyeing with nylon dyes, the temperature of welding of tanning tissue is at least 70°C and the concentration of chromium oxide (Cr₂O₃) requires 2 g/l. It is known that the concentration of (Cr₂O₃) for Karakul skins is 0.9 g/l, and the welding temperature of the leather fabric is 63-65°C.

Due to the fact that the dyeing temperature of nitrogen dyes is 42-50°C, a lower temperature (42°C) is adopted for dyeing Karakul skins.

This is due to the fact that the use of high temperatures in the dyeing process deteriorates the properties of elasticity and plasticity. In addition, the difference between the temperature of the dye solution and the welding temperature of the tanning fabric should be within the range of 18-20°C. The alkaline environment is also low, which leads to uneven dyeing.

Although nile dyes impart lightfast, darker and deeper coloring to the fur semi-processed product than oxidizing dyes, this method did not give positive results when dyeing samples of karakul skins.[4]

Table №2
Parameters of dyeing of astrakhan skins with different dyes

<table>
<thead>
<tr>
<th>Character of leather coloring</th>
<th>Fluid coefficient</th>
<th>Temperature, °C</th>
<th>Process duration, hour</th>
<th>environment ph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyeing with etched dyes</td>
<td>10</td>
<td>55</td>
<td>2</td>
<td>subacid</td>
</tr>
<tr>
<td>Dyeing with oxidative dyes</td>
<td>11</td>
<td>35-38</td>
<td>3</td>
<td>slightly alkaline</td>
</tr>
<tr>
<td>Dyeing with nile dyes</td>
<td>12</td>
<td>42-50</td>
<td>2</td>
<td>strongly alkaline</td>
</tr>
<tr>
<td>Dyeing with oxidative dyes</td>
<td>12</td>
<td>55</td>
<td>2</td>
<td>Neutral</td>
</tr>
</tbody>
</table>

Dyeing with acidic azo dyestuffs is widely used in the textile industry as well as for dyeing fur.

Dyeing of karakul hides with oxidative dyes has a dark black color, but most of it remains in wastewater, i.e. about 50%, polluting it.

We know that oxidative dyes contain phenolic products, so their presence in wastewater can lead to many environmental problems. Nowadays, the environmental problem is one of the most pressing, so it is important to use dyes that are comfortable in all respects and do not pollute the environment. In scientific research, it is advisable to use acid dyes instead of oxidative dyes [5]. This is because the process of dyeing fur with 5 different shades of acid dyes currently being produced allows them to be absorbed from the fluid into the dermis and wool. These cases have been investigated and revealed in experimental tests. Several variations of dyeing caracul skins with acid dyes were used in the experimental trials. This is because the process of dyeing mex with 5...
different shades of acid dyes that are currently being produced allows them to be absorbed from the liquid into the dermis and wool fabric. These cases have been investigated and revealed in experimental tests. Several variants of dyeing the karakul skins with acid dyes are used in the experimental tests.

According to the results of the applied dyeing, the optimal variants were chosen. The composition of black dye composition for pure black karakul leather with acid dyes is as follows:

The increased content of chromium oxide in karakul skins and increased resistance to high-temperature cooking did not reduce the quality of karakul skins.

Chemical, physical, and mechanical properties of the dyed skins were determined by the improved dyeing process.

<table>
<thead>
<tr>
<th>№</th>
<th>Components</th>
<th>Reagent consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ammonia (25%)</td>
<td>1.2 ml/l</td>
</tr>
<tr>
<td>2.</td>
<td>Surface active substances, OP-10</td>
<td>1 g/l</td>
</tr>
<tr>
<td>3.</td>
<td>Acid dyes</td>
<td>3.4 g/l</td>
</tr>
<tr>
<td>4.</td>
<td>Sodium sulfate</td>
<td>3.4 g/l</td>
</tr>
<tr>
<td>5.</td>
<td>Acetic acid</td>
<td>3.4 g/l</td>
</tr>
</tbody>
</table>

It is noted that the fur coating of black karakul leather dyed with the developed composition has light and abrasion resistance.

According to the optimal variant of the process, the high concentration of the dye was 3-4 g/l, and pH 4.5-5.

Subsequent treatment of black and white skins dyed according to the optimal dyeing process was carried out on the basis of the existing technology.

The following parameters were achieved in determining the chemical, physical and mechanical properties of the finished product obtained using the advanced technology by existing experimental methods. Figures are given in the table.

The use of acid dyes for dyeing the black color of mink, fox and other valuable fur skins is associated with certain difficulties, the main reason for which is the heterogeneous structure of different categories of hair. Pinned hair, having a more closed structure, is less susceptible to dyes and painted much harder than down hair. This is especially obvious when dyeing black. In this case, it is more appropriate to use oxidative dyes, whose molecular weight is much lower, respectively, the diffusion into the closed structure of the fibers proceeds with less difficulty. Nevertheless, acidic black dyes are successfully used for dyeing sheepskin and karakul hair, as well as in cases where a darker tone is required in color dyeing.

Dyeing karakul skins with acidic dyes using the developed technology leads to improved sanitary and hygienic working conditions in production, reduction of dye losses and refusal to use oxidizing dyes when dyeing karakul skins.

In conclusion, the processing of karakul skins on the basis of advanced technology creates strong bonds between wool and dye. Dyeing with acid dyes has also improved the quality of the finished product, which means that the wool coating of the karakul leather has a high shine and elasticity.

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CONFLICT EXPERIENCES OF RURAL HOUSEHOLDS IN NASARAWA STATE, NIGERIA

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ABSTRACT
Conflict has been regarded as one of the major constraints to agricultural production in Nigeria. Farmers and cattle herdsmen conflict is one of the major conflicts that is predominant and it affect rural households in Nasarawa State. This study was therefore designed to identify the conflict experiences of farmers and how it affect farmers in the State.

Data used for this study were obtained from a total of 179 households through a three-stage sampling technique. The first stage was the purposive selection of 10 crisis prone local government areas. Second stage was the selection of one village each from each crises prone local government areas. The third stage was random selection of 25 households. Major tools of analysis for this study included descriptive statistics, correlation analysis.

Majority of the rural households have agriculture as their major source of income (96.09%). All the rural households have experienced conflict at one point in time during the time frame of the study. Farmers/herdsmen conflict was experienced by 94.41% of the households. Ethnoreligious was experienced by 36.31% of the respondent while communal clashes was experienced by 3.35% of the respondent thereby revealing that the mostly experienced conflict is the farmer/herdsmen conflict which occurred on an average of 3 times over a period of five years.

It is therefore recommended that farmers should be trained and supported on the use of improved varieties to increase yield without increasing the size of land so as to avoid negative effects of conflict on agricultural production. Besides, there is the need for herdsmen to adopt better ways of livestock management.

KEYWORDS: Conflict, Experiences, and Rural Households

BACKGROUND OF THE STUDY
Agriculture is an important sector in West Africa where it contributes up to 23% of the labour force. In Nigeria, agriculture is a key sector in the economy accounting for between 60-70% of the labour force and contributing between 30-40% of the GDP. Nigeria is a country with great potentials for agricultural production. Being a major element and component of national development, a vibrant agricultural sector has the potentials to build a prosperous economy and provide for the basic needs of the population through ensuring the supply of raw materials for the industrial sector as well as providing gainful employment for the teeming population (Ajetomobi, et.al., 2010).

Nigeria’s major problems of food and agricultural production include poverty, ignorance, illiteracy, use of manual farm tools, lack of food storage facilities, lack of scientific and technological knowhow, lack of good leadership and non-colonialism, industrialization and privatisation, global warming and insecurity due to conflict. Conflict situation including ethnic, religious, herder-farmer, communal, and indigene/settler which threatens farmers’ sustainable livelihood have become brazen characteristics of Nigeria.

Conflict has been one of the major problems confronting agriculture in Nigeria. The inability to make Nigeria a global power house in food through agriculture can be well related to conflict. Most conflicts, and especially the internal conflicts that have now become the dominant model of mass violence, mainly affect rural areas and their populations. They disrupt food production through physical destruction and plundering of crops and livestock, harvests and food reserves; they prevent and discourage farming; they interrupt the lines of transportation through which food exchanges, and even humanitarian relief, take place; they destroy farm capital, conscript young and able-bodied males, taking them away from farm work and suppress income earning occupations. While livelihood is a process by which people make a living through specific capabilities, assets and activities (Ellis, 2000), the impact of conflicts on livelihood often lasts long after the violence has subsided, because assets have been destroyed, people killed or maimed, populations displaced, the environment damaged, and health, education and social
services shattered; still more awesome are the landmines which litter agricultural land, kill and cripple people and deter them from farming for years -even decades- after all violence has ceased (World Food Summit – WFS, 2006).

Nigeria in the last four years has witnessed a dramatic increase in conflict across all the geopolitical zones of the country. The concomitant effect of the conflict which is a recurring disaster has been the distortion of the development prospect of the country. While it has been consuming human beings and properties like a tsunami disaster across the country, the North exhibited a high incidence of the conflicts than any other region in the country and has rendered the region highly unstable for effective farming (Olusola, 2004). Nassarawa in particular has experienced considerable episodes of agricultural and natural resources related clashes. Since the beginnings of the 1990s, clashes between farmers and pastoralists especially in rural areas where the dwellers are predominantly small scale farmers have become issues of particular concern in the state (Blench, 2004). The causes of farmer-herdsmen conflicts are often not farfetched. However, there appears to be no consensus among both groups on the causes of their mutual conflict. According to de Haan (2002), while farmers cite destruction of crops by cattle and other property by the pastoralists as the main direct causes for conflicts cited, burning of rangelands and fadama as well as blockage of stock routes and water points by crop encroachment are major direct reasons cited by the pastoralists.

Statement of the Problems

Three-quarters of the world’s poor and hungry are located in rural areas (USAID, 2005). Agricultural production in Nigeria is not sufficient for our need as a country; the people depend directly and indirectly on agriculture and agriculture-related activities for their livelihood. However, with rapid population increase and limited land area, available land per individual shrinks continuously. As such, access to land resources decreases for the rural dwellers. This may therefore be responsible for resource based conflicts especially over rights of access to land and land use which have been increasing in frequency and intensity (Yamano and Deininger, 2005).

Conflicts cause serious dislocations, suspend or destroy income opportunities, create food insecurity, damage the environment, and frequently result in the loss of lives and property. Poor households who dominate small scale agricultural production bear the heaviest burdens of land-related conflicts for the simple reason that their daily needs and livelihoods are directly tied to their property rights. Conflicts have not only heighted the level of insecurity, but have also demonstrated high potential to exacerbate the food crisis in Nigeria and other affected countries due to loss of farmer lives, animals, crops and valuable properties (Cotula, Toulmin and Hesse, 2004). Nigeria has also recently experienced severe episodes of internal conflict, which have negatively influenced agricultural productivity and investment (Kimenyi et al., 2014).

Fasona and Omojola (2005) found that conflicts over agricultural land use between farmers and herdsmen accounted for 35 percent of all reported crises. Another study of 27 communities in North Central Nigeria showed that over 40% of the households surveyed had experienced agricultural land related conflicts (Kneeing and Fiki, 2004).

Justification for the Study

Conflicts can result in a variety of undesirable social, economic, environmental and cultural impacts ranging from minor to significant, short term to long term, and micro to macro in scale (Leif, 2007). These impacts can include negative effects on individuals as a consequence of stress and anxiety; breakdown in communities; additional demands on government services; increased and costly demands on rural industries, degradation of the local environment, which can have flow-on effects for communities and businesses; and loss of culture and identity within communities.

In an attempt to increase food production in Nigeria, every effort should be made to assess the contribution of conflict to reduction in agricultural production. Therefore, effect of the conflict relating to the major rampaging agricultural problem is the point of focus of this study. Thus, the relevance will actively reflect the effect of the conflict on rural livelihood of small scale farmers. This will relatively interpose a remark into a conversational issue in various disciplinary levels and among other researchers for sustainable development.

METHODOLOGY

Study Area

This study was carried out in Nasarawa State. The state is situated in the Middle Belt region of Nigeria. Otherwise referred to as north-central Nigeria, the Middle Belt consists of Plateau, Nasarawa, Benue, Niger, Kogi, Taraba, Adamawa, Kwara, Abuja (Federal Capital Territory- FCT), and to some extent Southern Kaduna (Ayih, 2003). This geographical sphere coincides virtually, but not identically, with what is known as the North-Central zone in the contemporary Nigerian Federation. Nasarawa State was created on October 1st, 1996. It was severed from the old Plateau State. Nasarawa State is composed of thirteen (13) Local Government Areas. Its capital is Lafia, a fast-urbanizing town along the Northern Benue valley. Spread across these Local Government Areas are a number of chiefdoms and emirates. Nasarawa State is a home to an amalgam of ethnic nationalities. Prominent among these are the Eggon, Hausa-Fulani, Tiv, Jukun, Gbagyi, Egbura, Doma, Alago, Milgili, Kambari/Kanuri, and so on. There is also a pronounced presence of settlers (non-natives) from the different parts of the country in the state. Nasarawa State lies within the Savanna grassland region of central Nigeria (Ayih, 2003).
The predominant vegetation of the state is undulating grassland with sparse forests along the Tire river valleys. The topography of the state is largely low lying but for the high lands around Mada hills and NasarawaEggon mountains, which hosts NasarawaEggon, Akwanga and Wamba Local Government Areas. Agriculture is traditionally the main occupation of the people of Nasarawa State. Important food crops grown in the state include yam, maize, guinea corn, rice, sugarcane, beans, soya beans, groundnuts, and assorted fruits and vegetables. The state is also a harbour of important solid minerals, namely granite, limestone, salt and sundry precious stones. Fishing and herding are also flourishing agricultural activities in the state. Demographically, Nasarawa State is characterized by a mean but ‘prodigiously’ increasing population. According to the 2006 census, the state has a total population of 1,863,275 people, making it the smallest in the North-central geopolitical zone. It is, however, estimated that the population of the state has since geometrically increased to the figure of 2.6 million people at present (Adogi, 2013).

Nasarawa State lies in a geographical or ecological belt characterized by sparse habitation. In effect, the state’s population density is low and dispersed. This characteristic makes the state favourable to grazing and other agricultural activities. The vast arable land and relatively thin population which used to be a dominant attribute of the state, made struggle for farmland virtually unknown in the past. This advantage, however, has been overtaken in the recent years by the trend of massive agrarian migration into the state, which has resulted in stiff competition for the increasingly scarce land resources, leading to confrontations and violent conflicts (Ayih, 2003).

Nassarawa state is divided into three Zones. This classification is in consonance with agro-ecological and cultural characteristics of the areas. The zones comprise the following: Zone A: Karu, Keffi, Kokona, Nassarawa and Toto LGAs; Zone B: Akwanga, Nassarawa, Egon and Wamba LGAs; Zone C: Awe, Doma, Kaena, Lafia and Obi LGAs. The map of Nassarawa State is as shown in Figure 1.
Figure 1: Map of Nassarawa State, Nigeria
Sampling Technique

A three-stage simple random sampling technique was employed for this study. The first stage was purposive selection of crisis prone local government areas. Second stage was purposive selection of 1 village each from each crises prone local government and the third stage was random selection of 25 households. A total of 250 rural households were selected for this study out of which responses from only 179 household was valid for the analysis of this study.

Method of Data Collection

Data used for this study were collected over a period of two months. This ranges between March 2016 and April 2016. This enabled the researcher obtain information on the vulnerability of rural households to conflict. The main data for this study were generated through primary sources. This was obtained through the use of a structured questionnaire (Appendix 1) administered by trained enumerators. Data relating to the socio-economic and demographic characteristics of the rural households, effect of conflict on agricultural production, income, and food expenditure consumption was obtained.

Analytical Techniques

Descriptive statistics such as measures of central tendencies, which comprise mean, mode, standard deviation, frequency distribution and percentages, was used to describe the socio-economic and demographic characteristics of the rural households in the study area. Other tool employed for the study was Correlation analysis, $X_i$ is the vector of socioeconomic characteristics

Where:

- $X_1 = \text{Total household income}$
- $X_2 = \text{household size (number)}$
- $X_3 = \text{age of household head (years)}$
- $X_4 = \text{Education level of household head}$
- $d_1 = \text{Place of Agric as source of income}$
- $d_2 = \text{Sex of the household head}$

RESULTS AND DISCUSSIONS

This chapter deals with the presentation, analysis and interpretation of the data collected during the field survey of the study.

SOCIOECONOMIC CHARACTERISTICS OF RURAL HOUSEHOLD

This section presents the socioeconomic characteristics that express information such as religion, education, sex, age, marital status, farming as source of income, access to credit facility and the conflict experiences of farmers. These characteristics may in one way or the other influence vulnerability of rural household to conflict. Distribution of the socioeconomic characteristics of the rural households is as presented in Table 2.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 40</td>
<td>8</td>
<td>4.47</td>
<td>60.23</td>
</tr>
<tr>
<td>40 – 49</td>
<td>28</td>
<td>15.64</td>
<td></td>
</tr>
<tr>
<td>50 – 59</td>
<td>45</td>
<td>25.14</td>
<td></td>
</tr>
<tr>
<td>60 and above</td>
<td>98</td>
<td>54.74</td>
<td></td>
</tr>
<tr>
<td>Min</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>90</td>
<td>50.28</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>89</td>
<td>49.72</td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>170</td>
<td>94.97</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>4</td>
<td>2.23</td>
<td></td>
</tr>
<tr>
<td>Widow</td>
<td>3</td>
<td>1.68</td>
<td></td>
</tr>
<tr>
<td>Widower</td>
<td>2</td>
<td>1.12</td>
<td></td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Formal Education</td>
<td>11</td>
<td>6.15</td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>49</td>
<td>27.37</td>
<td></td>
</tr>
<tr>
<td>Secondary Education</td>
<td>78</td>
<td>43.58</td>
<td></td>
</tr>
<tr>
<td>Tertiary Education</td>
<td>41</td>
<td>22.91</td>
<td></td>
</tr>
</tbody>
</table>
Other sources of Income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trading</td>
<td>50</td>
<td>27.93</td>
</tr>
<tr>
<td>Labour hiring</td>
<td>26</td>
<td>14.53</td>
</tr>
<tr>
<td>No other Source</td>
<td>103</td>
<td>57.54</td>
</tr>
<tr>
<td>Total</td>
<td>179</td>
<td>100</td>
</tr>
</tbody>
</table>

Agric. as Major Source of Income

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>172</td>
<td>96.09</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>3.91</td>
</tr>
<tr>
<td>Total</td>
<td>179</td>
<td>100</td>
</tr>
</tbody>
</table>

Majority of the respondents have Agriculture as their major source of income (96.09%) in the study area. This shows that majority of the respondents have farming as their primary occupation. This could be because farming is the leading occupation of the people of Nassarawa State. It can be deduced that most of the population are highly vulnerable to conflict since farming is their major source of income and conflict has been of negative impact on agricultural production. On the other hand, some (42.46%) of the respondents are involved in other secondary occupation, which has assisted them to diversify their economy and may likely make them less vulnerable to conflict.

Access to credit eases the financial constraints faced by the rural household. Availability of credit is expected to reduce the level of vulnerability of rural household to conflict. 30.73% of the respondents have access to credit while 69.27% did not. It is therefore possible that the majority of the rural households are more vulnerable to conflict situation. To some extent the age of the rural household heads determines the ability to work and in turn the output. This variable is included to determine the vulnerability of the household to conflict through the output. Households with young household heads whose ages range between 30 – 59 constitute 45.25% of the respondents are likely to cope better during crisis because they are still agile and capable of coping in situation of crisis and becomes less vulnerable, while the aged 60 and above which have 54.75% of the respondents becomes more vulnerable and cope less during crisis. The result of the findings shows that male and female gender engage in farming in the rural household and all have to deal with conflict situation. However, the number of female (49.72%) and the male (50.38%).

Majority of the respondents are married (94.97). This likely implies that the respondents have family labour to assist in farming activities and thereby increases output and makes them less vulnerable to conflict. 2.23% of the respondents were singles and 1.68% was widows and 1.12% widower.

CONFLICT EXPERIENCES OF FARMERS

Table 3: Types and no of times conflict experienced

<table>
<thead>
<tr>
<th>Conflicts experienced</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Types of conflict</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farmer/herdsmen</td>
<td>169</td>
<td>94.41</td>
</tr>
<tr>
<td>Ethno-religious</td>
<td>65</td>
<td>36.31</td>
</tr>
<tr>
<td>Communal</td>
<td>6</td>
<td>3.35</td>
</tr>
<tr>
<td>Total</td>
<td>240</td>
<td>140</td>
</tr>
<tr>
<td>a. Types of conflict experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Farmers/herdsmen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less or equal to 2</td>
<td>76</td>
<td>42.46</td>
</tr>
<tr>
<td>3 to 4</td>
<td>86</td>
<td>48.05</td>
</tr>
<tr>
<td>Above 4</td>
<td>5</td>
<td>2.8</td>
</tr>
<tr>
<td>Not applicable</td>
<td>12</td>
<td>6.7</td>
</tr>
<tr>
<td>Total</td>
<td>179</td>
<td>100</td>
</tr>
<tr>
<td>ii. Ethnoreligious</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less or equal to 2</td>
<td>43</td>
<td>24.02</td>
</tr>
</tbody>
</table>
As shown in Table 3, the most prevalent of the conflict is the farmers/herdsmen which was experienced by 94.41%. Further analysis reveals that rural households who experienced farmer/herdsmen have it on the average of 3 times. The study further revealed that while ethno-religious conflict was experienced by 36.31% of the respondents, communal clashes was experienced by 3.35% of the respondent.

All the respondents have experienced conflict in one way or the other which likely suggest that all the respondents may be vulnerable to conflict. The conflict experiences of the household include the Farmers/herdsmen, Communal, Ethnoreligious and Political crisis. The more conflict experienced by rural household the higher the vulnerability. However this has led to some personal sufferings of farmers which include: loss of lives and properties, death of children, postharvest losses, discontinuation of education of the children, sickness and diseases and inadequate food to eat.

**CONCLUSION**

Conflict has adverse effect on the rural household in the country. Conflict is a major challenge in agricultural production in Nasarawa State. In view of the agricultural dependent economy of the rural household in the state, conflict has negative implication on agriculture. All the respondents have not only experienced conflict but have been undergone diverse personal sufferings due to conflict. They have come up with some coping strategies; most of the strategies used by the farmers can only be effective for a short period of time, some of which cannot effectively reduce the effect of the conflict. Descriptive evidences indicate that all the rural households experienced conflict at one point over a specified period of four years ranging between 2011 and 2015.

**RECOMMENDATIONS**

Based on the findings of this study, the following recommendations were made:

The government and the rural household should be provided with adequate basic amenities like water, good road and electricity.

Better way of livestock management which may include the use of grazing reserve and more awareness on stock route should be created.

Farmers should form association and campaign to draw the attention of government and stakeholder to the impact of conflict on agricultural production. Anything done to develop the environment will equally help build up their production and reduces their impact of conflict on agricultural production.

Finally, adequate security is paramount in crisis zones where there is a lot of farmers and herdsmen which most times engage in clashes like Nasarawa State. However this is the responsibility of both the community leaders’ household and the government.
REFERENCES

Biodiversity and Distribution of Crustaceans as Bioindicators of Human Impact in the River Nun Estuary Around Akassa, Niger Delta, Nigeria

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*Corresponding Author

ABSTRACT

A Research on the biodiversity and distribution of crustaceans in the River Nun estuary, Niger Delta, Nigeria was conducted from November, 2020 to April, 2021. This was done to imply monitor certain aspects of the environment, such as eutrophication, pollution warning trends and long-term changes which are signs of human induced environmental disturbance. Crustacean communities seem to be particularly useful for the evaluation of ecosystem status due to the presence of indicator taxa. Water Samples were collected from three sampling stations with collection bottles and taken to the laboratory for analysis. Crustacean samples were collected from four sampling stations. Different sampling techniques were employed in the collection of the crustaceans. Sampling was done with a quadrat of size 0.25 m² at the ebb of the spring tide in each of the stations. Pole seine nets, beach seine nets, visual counts, collections, and burrow counts techniques were also employed. The mean values of physico-chemical parameters ranged from 6.13 to 6.34 for pH, 3.70 to 5.57%o for salinity, 31.07 NTU to 37.92 NTU for turbidity, 3.57mg/L to 3.84mg/L for Total Dissolved Solids (TDS), 3.47mg/L to 3.79mg/L for Total Suspended Solids (TSS), 6.50mg/L to 23.04mg/L for HCO₃, 5.66mg/l to 6.33mg/l for Dissolved Oxygen (DO), 0.90mg/L to 1.55mg/L for Total Hydrocarbon Content (THC), 44.41mg/L to 72.07mg/L for Biochemical Oxygen Demand (BOD), 139.70mg/L to 169.45mg/L for Chemical Oxygen Demand (COD), and 0.58mg/L to 1.81mg/L for Total Organic Carbon (TOC) respectively. 27 species of crustaceans belonging to 4 orders, 15 families, and 18 genera were encountered during this study. Among these, the decapods crustaceans were the most abundant, having 24 species out of the 26 species of crustaceans that were identified. Also, the family Grapsoidea had the highest numbers of species (7 species), followed by the families Panaeidae (4 species), Portunidae (3 species), and Oecypodae (3 species), respectively. Most of the crustaceans, except Parapenaeus longirostris, Penaeus monodon, and Penaeus satiherus, are usually found either close to or around the fringes of the estuary or around mudflats. The abundance and preponderance of indicator crustaceans such as Decapods, Isopods, and copepods which are known to be negatively correlated to the density of solid waste, which in turn is affected by the presence of human activity reveals an unpolluted environment. It can be concluded that the fishery and environment is not under threat. However, environmental sustainability should be ensured or indeed improved upon.

KEY WORDS: biodiversity, distribution, crustaceans, River Nun, Akassa, Niger Delta

1.0 INTRODUCTION

Crustaceans are members of the sub-phylum crustacea. They are a group of invertebrate animals consisting of some 45,000 species distributed worldwide. They constitute one of the most morphologically diverse taxonomic groups on the planet [1]. They form a large diverse arthropod taxon which includes such animals as crab, lobsters, Crayfish, Shrimp, prawn, kill, Woodlice, and barnacles.

They constitute one of the most priced delicacies that are eaten worldwide for their high nutrient value and low cholesterol content. Apart from their role as priced protein sources, crustaceans play an important role in ecosystem stability. They are also converters of biomass and organic matter in the biogeochemical cycles [2]. Also, they can directly consume organic matter as deposit
feeders or feed on dead organisms like scavengers which in turn are transformed to higher trophic levels via their directions by the other higher animals and man [3, 4].

However, despite their seeming toughness and importance as environmental sanitizers, crustaceans are often affected by adverse environmental inputs such as heavy metals, petroleum and its bi-products and other anthropogenic inputs. Heavy metals for instance can affect molting and limb regeneration in crustaceans. Furthermore, certain crustaceans may totally disappear or leave environments that are far from ideal. These crustaceans are termed indicator species or taxa. They provide information about the state of the environment and its effects over time.

Therefore, there is an acute need to study crustaceans’ diversity in order to determine the ecological health status of water bodies. As River Nun at Akassa axis provides a veritable ground for the growth, survival and harvest of crustaceans, there is a need to study crustacean biodiversity and distribution in the river in order to determine its pollution status. This will provide information for assessing the status of crustaceans and diversity, water quality and ecological health of the water. The protection of our fishery and sustenance of the environment is sacrosanct.

2.0 MATERIALS AND METHODS

2.1 Description of Study Area

The study area is the River Nun estuary in Akassa kingdom in Brass Local Government Area in Bayelsa State situated in the Niger Delta Region of Nigeria. Akassa kingdom occupies an area of 120km² and is situated on both sides of the River Nun estuary. Akassa kingdom has a population of over 280,000 people who are inhabitants of 21 major towns and several fishing settlements that make up the kingdom. The mother tongue of the Akassa people is the Izon (Ijaw) language. The estuary is located on latitude of 4°: 20” E and 4°: 17” N longitude of 6°: 49” and 4°:55” E [5]. The wet season spans from April to November, while the short dry season spans from December to March.

The estuary is interconnected with several creeks, inlets, and canals which serve as navigational routes and drainages in the area. It is also connected to other estuaries through these channels. The River Nun estuary is bordered to the east by the Brass River estuary and to the west by the Sangana River estuary. It opens up into the Atlantic Ocean at its southern part (Figure 1).

![Figure 1: Map of the Nun River Estuary](http://www.pronatura-nigeria.org/OLD-WEBSITE/adf/akassa.html#amap)

The River Nun estuary (Akassa kingdom) has been reported to have the highest rainfall per annum in the whole of West Africa, with an annual rain fall of between 2,000mm to 3, 000mm [5]. Rain occurs virtually every month of the year with heavy downpour. The climate is tropical. The wet season is not less than 340 days. The mean monthly atmospheric temperature is in the range of 25°C to 31°C.

2.2 Description of Sample Stations

2.2.1 Station 1 (Near Buo- ama Creek)

This station is around the Buo- ama Creek. It is located on a latitude of N4°20’59.6472” and a longitude of E6°2’48.3036”. This station is characterized by the possession of mangrove vegetation and a relatively short intertidal zone. The vegetation consists mainly of red mangroves.
2.2.2 Station 2 (Akahapolo)
This station is around Akahapolo community and is located on a latitude of N$4^00'20.8552"$ and a longitude of E$6^00'2.56.4396"$. In this station, the low intertidal zone is muddy, middle intertidal zone is a mixture of sand and clay and the high intertidal zone is purely sandy. This station does not have mangrove vegetation. The fringes of this station are dominated by grasses.

2.2.3 Station 3 (Ogbokiri)
The station is situated on a mud flat and its GPS coordinates are N$4^00'19.846.8048"$ and E$6^00'3.49.3596"$. It has vegetation that is dominated by the white mangroves. The low intertidal zone is a mixture of sand and clay, the mid intertidal zone is sandy and the high intertidal zone is clay.

2.2.4 Station 4 (Tobukiri)
This station is a sandy beach close to the mouth of the River Nun estuary at Tobukiri, Akassa, where this estuary opens into the Atlantic Ocean. It is situated on a latitude of N$4^00'18.12.0996"$ and longitude of E$6^00'3.58.518"$. It has vegetation that is dominated by grass and shrubs. It has a sandy soil.

2.3 Field Sampling
2.3.1 Collection of Water Samples
Water Samples were collected in triplicates from three sampling stations with collection bottles and taken to the laboratory for analysis. The samples for total hydrocarbon content (THC) analysis were placed in pre-labelled glass containers and sealed with aluminum foil.

2.3.2 Sampling of Crustaceans
Crustacean samples were collected from four sampling stations. Different sampling techniques were employed in the collection of the crustaceans. Sampling was done with a quadart of size 0.25m$^2$ (50cm x 50cm) at the ebb of the spring tide in each of the stations. Pole seine nets, beach seine nets, Visual counts, collections and burrow counts techniques were also employed.

In quadrat sampling, the crustaceans covered by the quadart were excavated with the aid of a spade to the depth of about 20cm. Prior to the excavation, all juvenile crabs crawling within the quadart were hand-picked and put into a labeled wide mouthed bottle containing 10% formalin and 0.1% of the vital Rose Bengal Stain.

Pole seine and beach seine nets were also used. Samples were also collected from local fishers who used various fishing gears. The collected samples were later identified.

2.4 Laboratory analysis
2.4.1 Determination of pH, TDS, DO, Turbidity, BOD
Some water quality parameters were measured in-situ. The measured parameters included; pH, Total Dissolved Solids, and turbidity. The pH, Dissolved oxygen and Total Dissolved Solids (TDS) were determined in situ using portable digital meter (Extech-407510A). Winkler’s method was used for dissolved oxygen and BOD$_5$ (biological oxygen demand) analysis; while TSS (total suspended solids) was analyzed using gravimetric method. Hach’s turbidimeter model 2100P was used for the measurement of turbidity.

2.4.2 Determination of salinity
The conductivity meter has a salinity position so that as the probe is dipped into the water body, the control switch was turned to the salinity position and when a steady reading is obtained, it was recorded as the salinity of the water sample.

2.4.3 Total suspended solids
100ml of sample was filtered and the filter paper dried and weighed. The weight difference between filter paper before and after filtration was taken as the total suspended solid ppm or mg/L.

2.4.4 Hydrogen Carbonate (HCO$_3^-$)
2 drops of mixed indicator were added to the solution obtained from the hydroxide-acid filtration. The solution was titrated with 0.02m standard Hcl to the pink end point.
2.4.5 Determination of THC
The presence of hydrocarbons in water is detected by contacting the water samples with an adsorbent material to extract hydrocarbons from the water sample and then contacting the adsorbent material with a solvent for the hydrocarbons. A developer such as a miscible non-solvent liquid was mixed into the solvent to produce a test mixture. The turbidity of the test mixture is observed to determine the presence of hydrocarbons in the water sample. The non-solvent may contain 5% salt, and an emulsifier. Turbidity was measured quantitatively by measuring light scattered at 90° to a test light beam or by visual comparison to a reference scale that is determined spectrophotometrically at a wavelength of 420 nm using spectrometer model HACHDR3900.

2.4.6 Determination of COD in water
50.0 mL of sample was put in a 500 mL refluxing flask. Add 1g mercuric sulphate and a few glass beads. Add sulphuric acid to dissolve the mercuric sulphate and cool. Add 25.0 ml 0.25 N potassium dichromate solution and mix well. Attach the flask to the condenser and start the cooling water. Add the remaining acid reagent (70 mL) through the open end of condenser and mix well. Apply heat and reflux for 5 hours. Cool and wash down the condenser with distilled water. Dilute the mixture to about twice its volume and cool to room temperature. Titrate the excess dichromate with standard ferrous ammonium sulphate using ferroin indicator (2 to 3 drops). The colour change from blue green to reddish indicates the end point. Reflux in the same manner a blank consisting of distilled water of equal volume as that of the sample.

2.4.7 Determination of TOC
The sample is pipetted into the digestion cuvette and the open cuvette is positioned into the TOC-X5 shaker. The combination of the shaker and the fan drives the complete TIC out of up to eight samples within just five minutes. The cap is then screwed onto the indicator cuvette and the TOC digestion in the thermostat can begin. The shaker procedure saves time and is very easy and reliable from the point of view of handling. This involves two measurements, i.e., total carbon (TC) and total inorganic carbon (TIC). The TOC is then calculated as the difference between TC and TIC (TOC = TC – TIC). Total carbon (TC) and total inorganic carbon (TIC) are converted to carbon dioxide (CO2) by, respectively, oxidation and acidification. The CO2 passes from the digestion cuvette through a membrane and into the indicator cuvette. The change of colour of the indicator is photometrically evaluated.

3.0 RESULTS
The results of the analysis of the River Nun estuary in Akassa kingdom, Niger Delta are presented in Tables 1 - 5. The mean values of physico-chemical parameters ranged from 6.13 ± 0.02 to 6.34 ± 0.001 for pH, 3.70 ± 0.03 %o to 5.57 ± 0.08%o for Salinity, 31.07 to 37.92 for Turbidity, 3.57 to 3.84 for TDS, 3.47 to 3.79 for TSS, 6.50 to 23.04 for HCO₃, 5.66 ± 0.18mg/l to 6.33 ± 0.13mg/l for DO, 0.90 ± 0.30mg/l to 1.55 ± 0.20mg/l for THC, 44.41±1.01mg/l to 72.07 ± 1.47mg/l for BOD, 139.70 ± 0.90mg/L to 169.45 ± 1.05mg/L for COD, and 0.58 ± 0.04mg/l to 1.81±0.02mg/L for TOC, respectively.

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>STATION 1</th>
<th>STATION 2</th>
<th>STATION 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>6.13 ± 0.02</td>
<td>6.33 ± 0.01</td>
<td>6.34 ± 0.001</td>
</tr>
<tr>
<td>Salinity</td>
<td>3.70 ± 0.03</td>
<td>4.73 ± 0.09</td>
<td>5.57 ± 0.08</td>
</tr>
<tr>
<td>Turbidity</td>
<td>36.04 ± 0.67</td>
<td>37.92 ± 4.64</td>
<td>31.07 ± 0.42</td>
</tr>
<tr>
<td>TDS</td>
<td>3.57 ± 0.01</td>
<td>3.69 ± 0.01</td>
<td>3.84 ± 0.11</td>
</tr>
<tr>
<td>TSS</td>
<td>3.47 ± 0.13</td>
<td>3.79 ± 0.47</td>
<td>3.57 ± 0.08</td>
</tr>
<tr>
<td>HCO₃</td>
<td>6.50 ± 1.50</td>
<td>21.48 ± 1.09</td>
<td>23.04 ± 1.60</td>
</tr>
<tr>
<td>DO</td>
<td>6.33 ± 0.13</td>
<td>5.66 ± 0.18</td>
<td>5.90 ± 0.10</td>
</tr>
<tr>
<td>THC</td>
<td>1.15 ± 0.20</td>
<td>1.55 ± 0.20</td>
<td>0.90 ± 0.30</td>
</tr>
<tr>
<td>BOD</td>
<td>44.41 ± 1.01</td>
<td>68.54 ± 0.18</td>
<td>72.07 ± 1.47</td>
</tr>
<tr>
<td>COD</td>
<td>139.70 ± 0.90</td>
<td>158.75 ± 2.05</td>
<td>169.45 ± 1.05</td>
</tr>
<tr>
<td>TOC</td>
<td>0.58 ± 0.04</td>
<td>0.71 ± 0.15</td>
<td>1.81 ± 0.02</td>
</tr>
</tbody>
</table>
**Table 2: Pearson’s Correlation of the Physico-chemical Parameters of the Nun River Estuary**

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>pH</th>
<th>Sal</th>
<th>Turb</th>
<th>TDS</th>
<th>TSS</th>
<th>HCO₃⁻</th>
<th>DO</th>
<th>THC</th>
<th>BOD</th>
<th>COD</th>
<th>TOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>1</td>
<td>.915</td>
<td>-.284</td>
<td>.710</td>
<td>.200</td>
<td>-.095</td>
<td>-.849</td>
<td>.021</td>
<td>.984</td>
<td>.949</td>
<td>.625</td>
</tr>
<tr>
<td>Sal</td>
<td>.915</td>
<td>1</td>
<td>-.525</td>
<td>.886</td>
<td>.097</td>
<td>.175</td>
<td>-.619</td>
<td>-.318</td>
<td>.937</td>
<td>.994</td>
<td>.851</td>
</tr>
<tr>
<td>Turb</td>
<td>-.284</td>
<td>-.525</td>
<td>1</td>
<td>-.526</td>
<td>.741</td>
<td>-.416</td>
<td>.168</td>
<td>.865</td>
<td>-.257</td>
<td>-.490</td>
<td>-.390</td>
</tr>
<tr>
<td>TDS</td>
<td>.710</td>
<td>.886</td>
<td>-.526</td>
<td>1</td>
<td>.136</td>
<td>.567</td>
<td>-.346</td>
<td>-.374</td>
<td>.797</td>
<td>.862</td>
<td>.862</td>
</tr>
<tr>
<td>TSS</td>
<td>.200</td>
<td>.097</td>
<td>.741</td>
<td>.136</td>
<td>1</td>
<td>-.160</td>
<td>.027</td>
<td>.664</td>
<td>.300</td>
<td>.101</td>
<td>.312</td>
</tr>
<tr>
<td>HCO₃⁻</td>
<td>-.095</td>
<td>.175</td>
<td>-.416</td>
<td>.567</td>
<td>-.160</td>
<td>1</td>
<td>.251</td>
<td>-.530</td>
<td>.015</td>
<td>.134</td>
<td>.313</td>
</tr>
<tr>
<td>DO</td>
<td>-.849</td>
<td>-.619</td>
<td>.168</td>
<td>-.346</td>
<td>.027</td>
<td>.251</td>
<td>1</td>
<td>-.160</td>
<td>-.762</td>
<td>-.697</td>
<td>-.146</td>
</tr>
<tr>
<td>THC</td>
<td>.021</td>
<td>-.318</td>
<td>.865</td>
<td>-.374</td>
<td>.664</td>
<td>-.530</td>
<td>-.160</td>
<td>1</td>
<td>.022</td>
<td>-.254</td>
<td>-.389</td>
</tr>
<tr>
<td>BOD</td>
<td>.984</td>
<td>.937</td>
<td>-.257</td>
<td>.797</td>
<td>.300</td>
<td>.015</td>
<td>-.762</td>
<td>.022</td>
<td>1</td>
<td>.961</td>
<td>.715</td>
</tr>
<tr>
<td>COD</td>
<td>.949</td>
<td>.994</td>
<td>-.490</td>
<td>.862</td>
<td>.101</td>
<td>.134</td>
<td>-.697</td>
<td>-.254</td>
<td>.961</td>
<td>1</td>
<td>.797</td>
</tr>
<tr>
<td>TOC</td>
<td>.625</td>
<td>.851</td>
<td>-.390</td>
<td>.862</td>
<td>.312</td>
<td>.313</td>
<td>-.146</td>
<td>-.389</td>
<td>.715</td>
<td>.797</td>
<td>1</td>
</tr>
</tbody>
</table>

*Correlation is significant at 0.05 levels. ** Correlation is significant at 0.01 levels Crustaceans

The checklist of the crustaceans that were identified during the current study is presented in Table 3 while that of the ecology and distribution of these crustaceans are presented in Tables 4 and 5, respectively. Twenty-seven (27) species of crustaceans belonging to four orders, fifteen families and eighteen genera were encountered during the study (Tables 3, 4, and 5). Among these, the decapods crustaceans were the most abundant. Also, the family Grapsidae had the highest numbers of species (7 species) followed by the families Panaeidae (4 species), Portunidae (3 species), and Ocypodae (3 species), respectively.

**Table 3: Checklist of Crustaceans in the Nun River Estuary**

<table>
<thead>
<tr>
<th>S/N</th>
<th>CLASS</th>
<th>ORDER</th>
<th>FAMILY</th>
<th>GENUS &amp; SPECIES</th>
<th>COMMON NAME</th>
<th>LOCAL NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Malacostaca</td>
<td>Decapoda</td>
<td>Crangonidae</td>
<td>Exhippusysmata hastatoisides</td>
<td>Champion shrimp</td>
<td>Otoku</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>Palenonidae</td>
<td>Nematopalaemon hastatus</td>
<td>Estuarine shrimp</td>
<td>Opoli</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>Pandalidae</td>
<td>Parapandalus narval</td>
<td>Narval shrimp</td>
<td>Opoli</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>Aristidae</td>
<td>Aristeus varidens</td>
<td>Stripped red shrimp</td>
<td>Opoli</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>Panaeidae</td>
<td>Parapeneaus longirostris</td>
<td>Deep water rose shrimp</td>
<td>Opoli</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>Penaeus karathurus</td>
<td>Caramote shrimp</td>
<td>Opoli</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td>Penaeus monodon</td>
<td>Giant tiger prawn</td>
<td>Opu opoli</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>Penaeus satifierus</td>
<td>White prawn</td>
<td>Idumafu</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>Ocypodae</td>
<td>Ocypodae cursor</td>
<td>Tufted ghost crab</td>
<td>Abadi- akongho</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td>Ocypodae</td>
<td>Ocypodae Africana</td>
<td>Ghost crab</td>
<td>Abadi- akongho</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td>Uca tangeri</td>
<td>Akongho</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>Gecarcinidae</td>
<td>Cardisoma armatum</td>
<td>Land crab</td>
<td>Ilu</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td>Grapsidae</td>
<td>Sesarma huzardi</td>
<td>Mangrove crabs</td>
<td>Ito</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td>Sesarma elegans</td>
<td>Mangrove crabs</td>
<td>Ito</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td>Sesarma alberti</td>
<td>Mangrove crabs</td>
<td>Ito</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td>Sesarma angolense</td>
<td>Mangrove crabs</td>
<td>Ito</td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td>Pachygrapsus sp.</td>
<td>Mangrove crabs</td>
<td>Ito</td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td>Goniopsis pelii</td>
<td>Mangrove crabs</td>
<td>Ito</td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td>Portunidae</td>
<td>Callinectes amnicola</td>
<td>Blue crab</td>
<td>Ango</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td>Callinectes pallidus</td>
<td>Blue crab</td>
<td>Ango</td>
</tr>
<tr>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td>Callinectes marginatus</td>
<td>Blue crab</td>
<td>Ango</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td></td>
<td>Alpheidae</td>
<td>Alpheus pontederiae</td>
<td>Snapping shrimp</td>
<td>Ikpaikpai</td>
</tr>
<tr>
<td>23</td>
<td></td>
<td></td>
<td>Diogenidae</td>
<td>Clibanarius cooki</td>
<td>Hermit crab</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 4: Habitat and Ecology of Crustaceans in the Nun River Estuary

<table>
<thead>
<tr>
<th>S/N</th>
<th>Crustaceans</th>
<th>Habitat/ Ecology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>E. hastatoides</td>
<td>Muddy and sandy bottoms of the estuary.</td>
</tr>
<tr>
<td>2</td>
<td>N. hastatus</td>
<td>Sandy and muddy bottoms in estuarine and coastal marine waters</td>
</tr>
<tr>
<td>3</td>
<td>P. narval</td>
<td>Sandy and muddy bottoms, often near rocky areas</td>
</tr>
<tr>
<td>4</td>
<td>A. varidens</td>
<td>Muddy bottoms of the estuary.</td>
</tr>
<tr>
<td>5</td>
<td>P. longirostris</td>
<td>Muddy bottoms of the estuary.</td>
</tr>
<tr>
<td>6</td>
<td>P. karathura</td>
<td>Muddy bottoms of the estuary.</td>
</tr>
<tr>
<td>7</td>
<td>P. monodon</td>
<td>Muddy bottoms of the estuary.</td>
</tr>
<tr>
<td>8</td>
<td>P. satiferus</td>
<td>Muddy bottoms of the estuary.</td>
</tr>
<tr>
<td>9</td>
<td>O. cursor</td>
<td>Inhabits the high intertidal zones sandy beaches close to the ocean. It lives in</td>
</tr>
<tr>
<td>10</td>
<td>O. Africana</td>
<td>Burrows when the tide is high and comes out to feed and breed when the tide ebb.</td>
</tr>
<tr>
<td>11</td>
<td>U. tangeri</td>
<td>High and mid intertidal zones of swamps and mud flats. It resides in burrows when</td>
</tr>
<tr>
<td>12</td>
<td>C. armatum</td>
<td>The tide is high and comes out to feed and breed when the tide ebb.</td>
</tr>
<tr>
<td>13</td>
<td>S. huzardi</td>
<td>Found at the high intertidal zones, usually around mangroves. Can also be seen</td>
</tr>
<tr>
<td>14</td>
<td>S. elegans</td>
<td>Around mangrove pneumatopores.</td>
</tr>
<tr>
<td>15</td>
<td>S. alberti</td>
<td>Found at the high intertidal zones, usually around mangroves. Can also be seen</td>
</tr>
<tr>
<td>16</td>
<td>S. angolense</td>
<td>Around mangrove pneumatopores.</td>
</tr>
<tr>
<td>17</td>
<td>G. pelli.</td>
<td>Found at the high intertidal zones, usually around mangroves. They also inhabit</td>
</tr>
<tr>
<td>18</td>
<td>C. amnicola</td>
<td>The stems and branches of mangroves and on other areas such as boats, canoes,</td>
</tr>
<tr>
<td>20</td>
<td>C. pallidus</td>
<td>Piles of stones etc.</td>
</tr>
<tr>
<td>21</td>
<td>C. marginatus</td>
<td>Found at the low, mid, and high intertidal zones of estuaries. Usually inhabits</td>
</tr>
<tr>
<td>22</td>
<td>A. pontederiae</td>
<td>The empty shells of estuarine molluscs such as periwinkles.</td>
</tr>
<tr>
<td>23</td>
<td>C. cooki</td>
<td>Found at the low, mid, and high intertidal zones of estuaries. Usually inhabits</td>
</tr>
<tr>
<td>24</td>
<td>B. sp.</td>
<td>The shells of estuarine molluscs such as periwinkles.</td>
</tr>
<tr>
<td>25</td>
<td>L. oceanica</td>
<td>Commonly seen on the shores of the estuary especially on concrete jetties, piling</td>
</tr>
<tr>
<td>26</td>
<td>M. sp.</td>
<td>Stones, canoes, boats (abandoned ones). They are scavengers.</td>
</tr>
<tr>
<td>27</td>
<td>S. mantis</td>
<td>Found at the high intertidal zones in sandy areas of the estuary. Lives in moist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At the base of debris or leaves.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>They occur in coastal waters but are sometimes found in the estuary. Many species</td>
</tr>
<tr>
<td></td>
<td></td>
<td>They live in burrows. Both adults and larvae are excellent swimmers. They live on</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Muddy bottoms and among organic debris.</td>
</tr>
</tbody>
</table>
Table 5: Distribution/ Occurrence of Crustaceans in various parts of the River Nun estuary

<table>
<thead>
<tr>
<th>S/N</th>
<th>CRUSTACEANS</th>
<th>STN 1</th>
<th>STN 2</th>
<th>STN 3</th>
<th>STN 4</th>
<th>STL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>H</td>
<td>M</td>
<td>L</td>
<td>H</td>
<td>M</td>
</tr>
<tr>
<td>1</td>
<td>Exhippolysmata hastatoides</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Nematopecten hastatus</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Parapandalus narval</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Aristeus variens</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Parapenaeus longirostris</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Penaeus karahuricus</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Penaeus monodon</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Penaeus satiferus</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>Ocyopode cursor</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>Ocyopode Africana</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>Uca tangeri</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>12</td>
<td>Cardisoma armatum</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>13</td>
<td>Sesarma huzardi</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14</td>
<td>Sesarma elegans</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>15</td>
<td>Sesarma alberti</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>16</td>
<td>Sesarma angolense</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>17</td>
<td>Pachygrapsus sp.</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>18</td>
<td>Goniospis pelli.</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>19</td>
<td>Callinectes amnicola</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>20</td>
<td>Callinectes pallidus</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>21</td>
<td>Callinectes marginatus</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>22</td>
<td>Alpheus pontederiae</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>23</td>
<td>Chibarbus cooki</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>24</td>
<td>Balanus sp.</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>25</td>
<td>Ligia oceanica</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>26</td>
<td>Mesochra sp.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>27</td>
<td>Squilla mantis</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

STN= Station. H= High intertidal. M= Mid intertidal. L= Low intertidal. ST: Sub- tidal.
- = Absent. + = Present. ++ = Abundant

Plate 1: Ligia oceanica and Balanus sp.(white)
Plate 2: Balanus sp. on the carapace of C. amnicola.
Plate 4: Pachygrapsus sp. on concrete pilings
Plate 3: A. G. pelli on the mid intertidal zone of station 1; B. G. pelli on the high intertidal zone of station 1; C. Goniopsis pelli on mangrove root; D. Goniopsis pelli on concrete pilings
4.0 DISCUSSION

4.1 Physicochemical parameters

The physico-chemical parameters of the overlaying water of the River Nun estuary were measured to ascertain the level of environmental/ ecological parameters or variables that the crustaceans have adapted to. The ranges and fluctuations of values for physico-chemical parameters recorded in the River Nun estuary during the investigation were within the range of physico-chemical parameters values of natural and manmade water bodies for optimal growth and survival for aquatic life in tropical Africa [6, 7, 8, 9]. The pH of most natural waters falls in the range of 4.0 to 9.0 and much more often in the range of 6.0 to 8.0 [10]. The range of pH (6.13, to 6.34) obtained in this research work was adequate for aquatic life. pH range of 5.50 to 9.50 [11] is suitable for aquatic production. Similar range of pH was recorded by Eyo and Ekwonye [9], Attama [12] and Odo [13].

The dissolved oxygen (DO) content of water results from the photosynthetic and respiratory activities of the biota in the open waters. The significant decrease in DO in station 2 in the river-nun estuary is probably as a result of high organic load of the water mainly in form of leaf litter which causes increase oxidation. While the increase in DO content in station 1 would be due to the increased aeration during rainfall and increased wind speed experienced in that period.

The variation in salinity can be accounted for by the fluctuation in river discharge, precipitation and tidal currents. Salinity varied from 3.70 recorded at all three stations to 5.57 in river-nun estuary. The lowest mean value (3.70±0.03) was recorded for station 1, whereas station 2 returned the greatest mean, 5.57±0.09. The results of the present study emphasize the influence of salinity level on the distribution of crustaceans found in this region.
4.2 Crustaceans

The results of this research revealed that the River Nun estuary around Akassa kingdom is endowed with a high biodiversity of crustaceans. Twenty-seven (27) species of crustaceans belonging to four (4) orders, fifteen (15) families and eighteen (18) genera were encountered during this study. Among these, the decapods crustaceans were the most abundant, having 24 species out of the 26 species of crustaceans that were identified. Also, the family Grapsidae had the highest numbers of species (7 species), followed by the families Panaeidae (4 species), Portunidae (3 species), and Ocypodidae (3 species), respectively. Geetha and Bijoy [14] identified 34 species of crustaceans belonging to twenty-seven families and thirty-four genera in a similar study on the ecology, diversity, and abundance of Macro-benthic Crustaceans in Cochin estuary, India. They were comprised of seven groups represented by amphipods (80%), isopods (7%), tanaids (4%), mysids (2%), decapods (1%), acarids (3%) and dipterans (3%). Among these, the amphipods were the major group. In another related research on the biodiversity of Decapods associated with four different Seaweeds in Manakudy estuary India, Agneswari and Jansi [15] recorded 9 species of decapods.

In this study, the abundance and preponderance of indicator crustaceans such as Decapods, Isopods, and copepods which are known to be negatively correlated to the density of solid waste, which in turn is affected by the presence of human activity reveal an unpolluted environment. Therefore, these crustaceans are very abundant and most are consumed as food. Some are even exported to the cities and other communities where they are sold and form part of the enjoyable delicacies

4.3 Ecology and Distribution of Crustaceans in the River Nun Estuary

**Exhippolysmata hastataoides**, *Nematopalaemon hastatus*, and *Parapandalus narval* are usually associated with sandy and muddy bottoms in estuary while *Aristeus variens*, *Parapeneaus longirotius*, *Penaeus karathurias*, *Penaeus monodon*, and *Penaeus satiferus* prefer muddy bottoms. Most of the crustaceans, except *Parapeneaus longirotius*, *Penaeus monodon*, and *Penaeus satiferus*, are usually found either close to or around the fringes of the estuary or around mudflats.

*Ocypode cursor* and *Ocypode africana* were found at the high intertidal zone of a sandy beach close to the mouth of the River Nun estuary at Sampling station 4 (Tobukiri), where this estuary opens into the Atlantic Ocean. It lives in burrows when the tide is high and comes out to feed and breed when the tide ebbs.

*Uca tangeri* inhabits the sandy high and mid intertidal zones of swamps and mud flats. It resides in burrows when the tide is high and comes out to feed and breed when the tide ebbs. Also, *Cardisoma armatum* is an edible crab that inhabits the high intertidal zones of estuaries and moist muddy soils of islands. Some penetrate inland as far as 8 km (about 5 miles). It resides in burrows. They are typically terrestrial, square-bodied crabs that only occasionally, as adults, return to the sea. They feed on both animal and plant tissue.

*Sesarma huzardi*, *Sesarma alberti*, *Sesarma angolense*, *Pachygrapsus sp.*, and *Goniopsis pelii* are usually found at the high and mid intertidal intertidal zones, usually around mangrove swamps. It is also seen around mangrove pneumatophores. Furthermore, *Sesarma elegans* inhabits the high intertidal zones, usually around mangroves. They also inhabit the stems and branches of mangroves and other areas such as boats, canoes, piles of stones and so on. These mangrove crabs were found at the high and mid intertidal zones of stations 1 and 3. *Sesarma elegans* was found in station 2 also in canoes and abandoned boats.

The Blue Crabs (*Callinectes amnicola*, *C. pallidus*, and *C. marginatus*) and the snapping shrimp (*Alpheus pontederiae*) are usually found in sandy and muddy bottoms of the estuary, at less than 30cm depth. They are usually found around mudflats and sometimes left stranded on mud flats when the tide ebbs. They were found at the low intertidal zones of stations 1, 2, and 3 and in other parts of the estuary. The hermit crabs (*Clibanarius cooki*) inhabit the low, mid, and high intertidal zones of estuaries (mostly found at the mid intertidal zone). They usually inhabit the empty shells of estuarine molluscs such as periwinkles. They were found in stations 1, 2, and 3. The barnacles (*Balanus sp.*) are sessile crustaceans that are usually attached to the shells of periwinkles, blue crabs, concretes, and some plastics. They are filter feeders. They were found in stations 1, 2, and 3. The isopods (*Ligia sp.*) are seen on the shores of the estuary especially on concrete jetties, piling stones, canoes, boats (abandoned ones). They are scavengers. The copepods (*Mesochra sulfunensis*) inhabit the high intertidal zones in sandy areas of the estuary. They live in moisture at the base of debris or leaves. The isopods were found in stations 1, 2, 3, and 4 and copepods were found in station 2. Copepods (*Mesochra sp.*) are of great ecological importance, providing food for many species of fish. A few live-in moistures at the base of leaves, or in humus. The mantis shrimp (*Squilla mantis*) occur in coastal waters but are sometimes found in the estuary. Many species live in burrows. Both adults and larvae are excellent swimmers. They live on muddy bottoms and among organic debris.
5.0 CONCLUSION

The observed ranges and fluctuations of values for physico-chemical parameters recorded in the River Nun estuary during the investigation were within the range of physico-chemical parameter values of natural and manmade water bodies for optimal growth and survival of aquatic life in tropical Africa.

Most of the crustaceans that were encountered and identified during this study inhabit the intertidal benthic zones of the River Nun estuary. While some crustaceans are aquatic, some species have occupied almost every conceivable niche within the aquatic environment.

The abundance and preponderance of indicator crustaceans such as Decapods, Isopods, and Copelids which are known to be negatively correlated to the density of solid waste, which in turn is affected by the presence of human activity suggest an unpolluted environment. This explains the abundance of crustaceans in the River Nun in this study.

The crustaceans of most obvious importance to humans are the larger species, chiefly decapods. Fisheries in many parts of the world capture shrimps, prawns, and spiny lobsters. Many species of true crabs such as the blue crab are valuable sources of food. Many species have only local market value whereas some are even exported to the cities and other countries where they are sold and form part of the enjoyable delicacies. The River Nun is not under serious threat of pollution as observed in the diversity and distribution of crustaceans in the environment.

REFERENCES

SOCIOCULTURAL FUNCTION OF LANGUAGE AND ITS ROLE IN SPEECH FORMATION

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ABSTRACT
The present scientific article is devoted to analysis of social side of a language and its role in society, in human communication. Language has been investigated as historical document that preserves national culture and human experience. The main functions of language have been enumerated and analyzed in the article as well as the role of language in speech formation has been defined.

KEY WORDS: communication, language, social, pragmatic, speech, sociolinguistic, language function.

INTRODUCTION
Language is a historical document that allows to restore the "model of the world", the inner world of people of the past eras, even when there are no physical or written evidence left of them. The language inherited from our ancient ancestors allows us to make this reconstruction – up to the remote past, to the origins of prehistory, where human thinking and human language were born.

Modern linguistics is the result of the centuries-old development of the science of language. Brought to life by the practical needs of society, linguistics has been conceptualizing itself theoretically for centuries. The history of linguistics is the history of the formation and development of scientific logic, overcoming its own contradictions, deepening and expanding linguistic theory, mastering areas of practical application, improving techniques and methods of linguistic analysis. For thousands of years, a colossal amount of linguistic facts has been accumulated, the subject of science has been clarified, research methods have become more reliable. Studying the history of linguistics, it is necessary to take into account this fact: in different epochs and in different countries, the science of language has developed very unevenly. This is due to the level of development and practical needs of society, the social struggle, the dominance of certain philosophical and scientific principles, the logic of the development of science itself and its place in the knowledge system, national traditions, etc.

By the beginning of the third millennium, the relationship between language and ethnicity, on the other hand, and language and society, on the other, became particularly relevant, which caused the problem of this work.

Even ancient scientists were convinced that there is an interdependent relationship between human society and language. Thus, Aristotle wrote: "Of all living beings, only man is gifted with speech." At the same time, Aristotle and his followers proceeded from such a basic purpose of language as serving as a means of communication between people, clearly understanding that language is inherent in a public person, and not just an individual.

The concepts of language in modern general linguistics are represented primarily by the works of F. de Saussure, L. Elmsley, L. Bloomfield, N. Chomsky, the Prague School, etc. For the most part, these concepts exclude social and cultural factors from the concept of language and thereby greatly narrow the subject of their research, resulting in an inadequate description of it. Language appears as a static homogeneous formation, common to all members of this linguistic community, considered undifferentiated. The representative function of the language is investigated, first of all. At the same time, the speaker and the listener and the dynamics of their relationship are excluded from consideration. Thus, specific situations of language communication, varieties of language usage and their evolution also fall out of sight.

RESULTS AND DISCUSSION
The relevance of the research topic lies in the fact that sociolinguistics overcomes an abstract approach to language learning and shows the presence in one linguistic
community of various systems of rules for using language, based on specific usages caused by social and cultural-historical factors. The need to learn a language in close connection with diverse social factors has been universally recognized. The sociolinguistic approach to learning foreign languages is a new and important step in linguistics. The connection between language and society did not immediately become the subject of a special scientific study. However, many scientists have repeatedly expressed the idea of the urgent need to create a so-called "external linguistics", which usually meant the whole set of connections of language with extralinguistic phenomena. Here, first of all, we should mention such linguists as I.A. Baudouin de Courtenay, F.F. Fortunatov, A.A. Shakhmatov, etc.

The following factor is also relevant for language: the special role of language in society, its inseparable connection with thinking determine the variety of elements used in language, the complexity of the organization of language, in other words, determine the complexity and specificity of language as a system-structural education.

The uniqueness of language as a system of signs is associated with a special role, a special purpose of language in the life of human society, in which it acts as a leading means of communication. This is what determines the multiplicity and diversity of the language signs used, the inadmissibility of their arbitrary change, the relationship between the stability and variability of the language sign. The last circumstance drew the attention of the outstanding French linguist Charles Bally, who wrote: "... languages are constantly changing, but they can function only without changing" [Sh. Bally, 1961, p. 29]. Indeed, the language must be stable, because otherwise it will not be able to fulfill its main function - to serve as the most important means of communication.

Along with this, the language must change, because the development of society, the complication of all forms of human practical activity, the development of his thinking determine the urgent need for constant development and enrichment of the language.

Everything in the language is subject to change. Language is always changing, but at the same time it is extremely stable. In other words, at any historical moment, language is something permanent and immediately transitory. Each individual continuously influences the language. And each generation influences it - even if not always in the basic lexical fund and in the material of grammatical forms, but in the nature of their use - by all means. Hence language is a continuous creative process, a constant creative activity that turns sounding matter into an expression of thought. "Another Humboldt antimony of language is formulated here: language is as much an activity as a work. In other words: on the one hand, an individual creates language at the moment of speech and language is what is being produced at the moment, and on the other hand, language is what has already been produced, it is the result of the activities of previous generations, the product and property of the human collective" [V. Humboldt, 1984, p. 339].

Hence, there is a clear need to develop a theory that would link together the problems of language structure, language dynamics and the functioning of language in speech. And this requires attention to such areas as 1) language variation and language change, 2) semantics, 3) pragmatics. So, in the first area, "only taking into account non-linguistic factors makes it possible not only to describe, but also to explain language variation and language changes."

Language - as an exceptionally complex entity - can be defined from different points of view depending on which side or sides of the language stand out. In this case, definitions are possible:

1) From the point of view of the function of language (or the functions of language): language is a means of communicating people and, as such, is a means of forming, expressing and communicating thoughts;
2) From the point of view of the device (mechanism) of language: language is a set of some units and rules for using these units, i.e. combining units; these units are formed by speakers at the moment;
3) From the point of view of the existence of language: language is the result of a social, collective skill of forming units of sound matter by correlating some sounds with some meaning;
4) From a semiotic point of view, language is a system of signs, i.e. material objects (sounds) with the property of denoting something that exists outside of themselves;
5) From the point of view of information theory: language is a code by which semantic information is encoded.

As can be seen, it is impossible to give an exhaustive definition of the language in one definition. Therefore, usually in scientific usage, the most concise interpretation of such general content is used, as: "language is the most important means of human communication" with appropriate specification as needed.

For the first time in linguistics, V. Humboldt justified the need to distinguish between language and speech, who wrote: "Language, as a mass of everything produced by living speech, is not the same as this speech itself in the mouths of the people," i.e. language - as a whole - differs from individual sounds of speech activity [V. Humboldt, 1984, p. 58].

The relationship between the concepts of speech (la parole) and language (la langue) was already crucial at the beginning of the XX century for the formulation of the theoretical position of F. de Saussure. A description of these concepts is given in a number of places in his general linguistics course. Thus, F. de Saussure writes: "By separating language and speech, we thereby separate:

a) Social from individual;
b) Essential from collateral and more or less accidental" [F. de Saussure, 1977, p. 38].

Speech is the sum of everything that people say. It includes:

1) Individual combinations depending on the will of the speakers;
2) All kinds of acts of speaking, i.e. there is nothing collective here. Speech is individual and instantaneous.

Language, in contrast to speech, is a social element of speech activity in general. In relation to the individual, it is an external element. Moreover, any individual - by himself - is not able to create a language or change it. "Language is a treasure trove, accumulated by the practice of speech in all who belong to one social collective, it is a grammatical system that potentially exists in every brain, or better to say, in the brains of a whole set of individuals, because language does not exist completely in any of them, it exists fully only in the mass" [T.A. Bushuy, 2017, p. 91]. So, speech (speech act) and language are correlated, assuming each other. Language is necessary to ensure the understanding of speech and the scale of its implementation. Historically, speech precedes language, ensuring its installation.

Speech is a decisive factor in the genesis of culture, and it is also the main means used by people to communicate and form concepts. All forms of communication between people depend to some extent on speech. By the way, the difference between language communication and communication with the help of works of art lies primarily in the fact that these forms of communication "transcribe" reality in different ways: art conveys mainly sensory and emotional information, language – mainly conceptual and logical. Unlike all possible "languages" of art, the actual language has a level of metalanguage, developed grammar and logic, because it is the only means of communication that has a "double division". Language is primarily logical, whereas "languages" are aesthetic.

Along with the term "sociolinguistics", many researchers use the term "sociology of language". Some consider them synonyms, others insist on the need to differentiate the concepts behind them, considering sociolinguistics one of the directions of the sociology of language. At the same time, sometimes one or another author tries to theoretically differentiate these areas of research, but using their names in specific descriptions of the language from a social point of view, interchanges the terms "sociolinguistics" and "sociology of language" as complete synonyms. For example, the American scientist J. Fishman believes that sociolinguistics explores first of all the "socially conditioned variability of language use", the sociology of language considers socially conditioned language variants (what has already been established by sociolinguistics) "as goals, as obstacles and as stimulators" of social interaction, and the "language users themselves and the ways they use language variants - as aspects of more general social systems and processes" [J. Fishman, 1999, p. 8]. However, in a large work placed in the same volume as the quoted preface, J. Fishman does not distinguish between the terms sociolinguistics and sociology of language, using them as synonyms.

According to the opinion shared by many modern researchers, the main difference between the concepts discussed is that sociolinguistics is a field of linguistics, and it studies linguistic phenomena with the involvement of social factors (determining the development and functioning of these phenomena), and the sociology of language is an interdisciplinary, intermediate field of research combining sociological goals and research methods with linguistic material. Developing this view, it can be said that sociolinguistics studies linguistic relations and processes, involving social factors for their interpretation, and the sociology of language studies social relations and processes, paying attention to linguistic phenomena that are reflected in these relations and processes. Unlike sociolinguistics, which studies the variability of language depending on the social conditions of its existence, the sociology of language is interested in how language is distributed, in particular language variants in various social groups, and how these groups achieve their goals with the help of language.

Intercultural competence is formed in the process of teaching foreign language communication, taking into account the cultural and mental differences of native speakers and is a prerequisite for a successful dialogue of cultures [L. Cummings, 2005, p. 112-113]. What is the essence of the background vocabulary is that if we compare conceptually equivalent words in different languages, they will differ from each other due to the fact that each of them is associated with a certain set of knowledge. Therefore, the background vocabulary forms the most complex group, in terms of determining their national and cultural content. As already mentioned, the study of the problem of the existence of a special component in the meaning of the word, which at least to some extent contained information about the socio-historical reality in which a particular language exists and functions, has been conducted by Russian linguists for many years. However, the first fundamental monograph devoted to the study, description, and most importantly - proof of the linguistic nature of the new concept - "lexical background" - was devoted to the book by E.M. Vereshagin and V.G. Kostomarov "Linguistic theory of the word". In it, the authors investigate the significance of background knowledge for communication in meaningful communication, that is, a detailed sociolinguistic analysis of a word as a unit of language functioning in a certain social context is carried out [E.M. Vereshagin, V.G. Kostomarov, 1990, p. 156].

A linguistic norm is what is considered right as opposed to what is wrong (i.e., it is considered wrong and is perceived as a violation of the norm). Norm and violation of norm (= right and wrong) are correlative concepts: one is not only realized in opposition to the other, but also necessarily presupposes its presence. The language itself is social, because it is the essence of a set of norms.

The violation of the old norm and the emergence of a new one may also result from the influence of a foreign language or the influence of one dialect on another, the influence of a literary language on dialects. Together, there cannot be two norms within a language at the same time, although all kinds of fluctuations in individual indicators of the norm are quite typical. It is obvious that the formation of new norms and the elimination of old ones is a clear manifestation of the general dynamics of the language.
The term "linguistic situation" is most often defined as a set of functionally stratified linguistic formations (languages, territorial dialects, local dialects) serving communication in a given territory or within one state. The dynamics of the language situation is a change in the established, relatively stable correlation of functionally stratified language formations (languages and dialects). This process proceeds with varying degrees of intensity under the influence of a complex system of objective and subjective factors [R.A. Hudson, 2004, p. 67].

The language situation includes the following mandatory components:
1) Social conditions of language functioning;
2) Spheres and environments of its use;
3) The form of its existence.

The social conditions of the existence of a language include:
1) socio-economic formations;
2) Forms of ethnic community;
3) The level of sovereignty;
4) The form of state autonomy;
5) The level of cultural development;
6) The number of people and their territorial compactness;
7) Ethnic environment.

The areas of language use are the most important component of the language situation. They are determined by the topic of communication, the time and place of communication, the area of social activity.

The most important areas are:
1) Economic activity,
2) socio-political activity,
3) Everyday life,
4) organized training,
5) Fiction,
6) Mass media,
7) Aesthetic impact,
8) Oral folk art,
9) Science,
10) All types of office work,
11) Personal correspondence,
12) Religious cult.

The given list of spheres is not canonical and may decrease or increase in relation to a particular language.

Idioethnic features, apparently, are more strongly manifested in the sphere of everyday life, fiction, mass communication, aesthetic influence, oral folk art, personal correspondence and are smoothed out in the spheres of socio-political activity, organized education, science, all types of clerical work and religious worship.

The medium of language use is communication:
1) Within the family,
2) Inside the production team,
3) Within a social group,
4) Within a locality or region,
5) Inside a temporarily organized concentration of people,
6) Inside the whole nation,
7) International,
8) Universal.

CONCLUSION

The language of any nation keeps an exceptionally fascinating narrative about the centuries-old history of everyday creative efforts of people to know, comprehend and subjugate the objective reality surrounding them. Therefore, the importance of ethnonationalistic research is obvious, designed to penetrate into the secrets of the formation of designations of objects of the world around a person – concrete objects and abstract concepts.

However, the sociology of language is not limited to using the results obtained by sociolinguists for the linguistic characteristics of certain groups. Its tasks are much broader. Coming "from society", i.e. depending on the linguistic characteristics of society and its constituent social groups, the sociologist of language determines which languages and language subsystems a particular group uses, in which areas of communication and with what regularity, what are the numerical ratios of persons who own different communicative codes and subcodes, establishes quantitative indicators characterizing the use of language (languages, language subsystems) in the media, in science, in education, artistic creativity, etc. Such studies are especially relevant in multilingual societies, where important parameters of language situations are the distribution of languages in different social and ethnic groups, the characteristics of groups in terms of their use of these languages for various communicative purposes, public assessments of "their" and "foreign" languages, etc.

LITERATURE

A STUDY ON IMPACT AND CURRENT POSITION OF FOREIGN DIRECT INVESTMENT IN THE INDIAN RETAIL SECTOR

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ABSTRACT

In the current global economic situation, no country is self sufficient. Since Foreign Direct Investment (FDI) is a way of filling the gaps between domestic savings and investments, it is considered very essential for the development of a nation. Global investors and multinational companies have improved their outlook towards investment in India on seeing the liberalization of the FDI regime. According to UNCTAD’s 2021 World Investment Report, FDI inflows reached an all-time high of USD 64 billion in 2020, registering a 27% increase compared to USD 51 billion in 2019. India ranks 5th among the top 20 FDI host economies and the largest host in the sub-region; the country historically accounts for 70-80% of inflows into the region. During 2021, India has relaxed administrative regulations for foreign investors in some industrial sectors by abolishing the requirement for approval by the Reserve Bank of India under certain conditions. The overall growth of FDI in India is thanks to its many assets, especially its high degree of specialisation in services, with a skilled, English-speaking and inexpensive labour force and a potential market of one billion inhabitants. Singapore, Mauritius, the Netherlands, Japan, the U.S., the U.K., France and Germany are the main investing countries in India. Investments were mainly oriented towards services, computer software & hardware, telecommunications, trade, the automobile industry, construction and chemicals. The present paper attempts to portray the factors influencing FDI and the different sectors which are leading in FDI in India.


INTRODUCTION

Prior to 2014, India was unsuccessful in attracting Foreign Direct Investment (FDI) commensurate with India’s capital requirements. Policy paralysis, presence of multiple sectors under the government approval route, low FDI caps across sectors as well as onerous FDI linked performance conditions across sectors did not enthuse foreign investors. After 2014, India became an investment-friendly nation and attracted the attention of leading multinational organizations, such as Vodafone, Amazon, Unilever, Samsung, Adidas, Lotte, DHL, Mercedes-Benz, Toyota, Garnier, Panasonic, LG, Microsoft, IBM, Nestlé, Coca-Cola etc. According to the Ministry of Commerce and Industry, the country registered the highest ever annual FDI inflow of $81.97 billion (provisional figure) in the financial year 2020-21. The computer software and hardware sector attracted the largest share of FDI inflows at 19%, followed by the service sector at 15%. Trading saw FDI inflow of 8%, while the Telecommunications & Construction (Infrastructure) sector attracted FDI inflow of 7% each, during the same period in the last more than seven years.

FDI in retail sector - Following the government’s decision to open up the retail sector for FDI in Single Brand Retail Trade in 2006, the country has witnessed significant advancements in the sector throughout its value chain and due to the entry of several new players, the Indian retail industry has emerged as one of the most energetic and fast-paced industries. In this context, India’s retail market is estimated to reach $1.1-1.3 trillion by 2025, from $0.7 trillion in 2019, growing at a compound annual growth rate (CAGR) of 9-11%, driven by socio-demographic and economic factors such as urbanisation, income growth and rise in nuclear families. In terms of retail, India is the world’s fifth-largest destination. Further, due to significant investment in the sector and rapid growth in the number of internet users, India is expected to overtake the United States as the world’s fastest growing e-commerce market. From consumer view point, more Indian youth are exposed to international brands and the upper class has more money to spend on things, the luxury market in India is expected to grow.

REVIEW OF LITERATURE

Bhavya Malhotra (2014), Foreign Direct Investment: Impact on Indian Economy. In this paper the author examined the impact of FDI on the Indian economy and analysed its
favorable global competition. It was observed that liberalized policy and market potential have made India a suitable place for foreign investors.

Mahdi Naqdi Bahar (2015), Foreign Direct Investment (FDI) in Indian Retail Sector. India has huge potential for attracting FDI. But retail sector faces lot of difficulties too. The paper portrays that Indian retailing has been slower as compared to other countries. It was suggested that this gloomy situation is to be concentrated and reasons identified.

Dr. Priyanka Kochhar Saran and Madhulika Singh (2018), Inflow of FDI in Indian Retail Industry: An Overview. This paper aims to reveal the slow growth of Indian retail sector. It also throws light on the various initiatives taken by the government in FDI policies.

OBJECTIVES OF THE STUDY
1. To analyze the growth of retail industry in India.
2. To Study the FDI turnover towards retail industry in India.
3. To identify the impact of FDI towards retail sectors in India.

SCOPE OF THE STUDY
FDI into India is a system for facilitating people to invest in India. India is a good financial nurturing ground for all foreign investors since it never felt the pressure as their class of investment has always been set free for the purpose of steering high capital within the country.

FACTORS INFLUENCING FOREIGN DIRECT INVESTMENT IN A COUNTRY
Foreign Direct Investors look into various factors before making investment decision in a country. According to experts, foreign direct investors specifically look for factors such as:

- A stable government and flexibility in the government policy.
- Pro-active measure of the Government to promote investment such as expansion of ports, captive power, development of highways etc.
- Exchange rate stability.
- Tax policies & concessions and scope of the market.
- Locational factors including logistics & labour.

- Return on investment and existence of other favourable investment decision making factors.

SECTORS WHICH ARE LEADING IN FDI IN INDIA
India remains an attractive destination for foreign direct investment. FDI were mainly oriented towards services, computer software and hardware, telecommunications, trade, the automobile industry, construction and chemicals. Deloitte Touche Tohmatsu India LLP on 14.09.2021 has come out with a press release on India’s FDI opportunity after surveying 1200 business leaders of multinational corporations in the US, UK, Japan and Singapore. In this, it observed that India remains an attractive destination for investments, scoring highly for its skilled workforce and prospects for economic growth. Key findings of the survey are “Continued upward FDI trend, Access to domestic market more important than as a hub for export, Perception of India strongest in the US and UK, Foreign investors rate India’s growth, stability and skills, Reforms to improve ease of doing business not widely known amongst investors”.

In the concluding part of the Deloitte research, it said that India can target attracting greater FDI into seven capital-intensive sectors - Textile & Apparels, Food Processing Industry, Electronic Goods, Pharmaceuticals, Vehicles & Parts, Chemicals and Capital Goods that have contributed US$181 billion of merchandise exports in FY2020-21. It further added that India can target an additional US$1 trillion of merchandise exports in the next five years by attracting higher FDI into capital investment-led focus sectors through schemes such as Product Linked Incentives. These seven sectors have the necessary potential (meaningful size and growth of exports), opportunity (large MNCs seeking alternative manufacturing hubs) and capability (adequate existing investments as proofs of concept) to show quick results and set a global precedent. These sectors are potentially high employment generating sectors in cities outside Tier 1 (Tier 2 and 3 cities as well as in the rural areas) as well as for semi or low skilled workers.

FOREIGN DIRECT INVESTMENT AT A GLANCE
As per Reserve Bank of India handbook of statistics, India’s net foreign direct investment in 2000-2001 stood at Rs.14924 crores. In a decade’s time it touched a high of Rs.304820 crores in 2019-20 and it will touch Rs.325382 crores (provisional) in 2020-2021.

<table>
<thead>
<tr>
<th>Year</th>
<th>(Rs.crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-2017</td>
<td>238913</td>
</tr>
<tr>
<td>2017-2018</td>
<td>195052</td>
</tr>
<tr>
<td>2018-2019</td>
<td>214036</td>
</tr>
<tr>
<td>2019-2020</td>
<td>304820</td>
</tr>
<tr>
<td>2020-2021 (provl)</td>
<td>325382</td>
</tr>
</tbody>
</table>

Source: RBI Handbook of Statistics
GROWTH OF INDIAN RETAIL INDUSTRY

Deloitte in its January 2020 research report on retail FDI in India underscored that improvement in India’s ranking in terms of “ease of doing business” had laid the foundation for a continuous increase in investments in the retail sector. The rise in internet penetration, smart phone user base and use of social media has made consumers more connected than ever. It further observed that in India, favourable demographics, a strong macroeconomic environment and a stable government have provided the necessary push to the retail sector. The increased proliferation of technology and organised retail has led to a rise in e-commerce sales more specifically.

Since 2000, the entire market size is expected to reach around $600 billion by 2015, representing a compound annual growth rate (CAGR) of 7.45 percent. India’s retail market is estimated to reach $1.1-$1.3 trillion by 2025, from $0.7 trillion in 2019, growing at a compound annual growth rate (CAGR) of 9-11%, driven by socio-demographic and economic factors such as urbanisation, income growth and rise in nuclear families.

**Table - 2 - Indian Retail Industry Growth 2000 to 2020**

<table>
<thead>
<tr>
<th>Year</th>
<th>(USD billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>204</td>
</tr>
<tr>
<td>2002</td>
<td>238</td>
</tr>
<tr>
<td>2004</td>
<td>278</td>
</tr>
<tr>
<td>2006</td>
<td>321</td>
</tr>
<tr>
<td>2008</td>
<td>368</td>
</tr>
<tr>
<td>2010</td>
<td>424</td>
</tr>
<tr>
<td>2012</td>
<td>518</td>
</tr>
<tr>
<td>2013</td>
<td>490</td>
</tr>
<tr>
<td>2014</td>
<td>534</td>
</tr>
<tr>
<td>2015</td>
<td>600</td>
</tr>
<tr>
<td>2020</td>
<td>1300</td>
</tr>
</tbody>
</table>

Source: India Brand Equity Foundation

**Table - 3 - Current turnover of Retailing in India (Rs.crores)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Retailing Turnovers</th>
<th>Organised Sector Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>23,55,000</td>
<td>1,75,000</td>
</tr>
<tr>
<td>2012</td>
<td>26,40,000</td>
<td>2,20,000</td>
</tr>
<tr>
<td>2013</td>
<td>29,50,000</td>
<td>2,75,000</td>
</tr>
<tr>
<td>2014</td>
<td>32,65,000</td>
<td>3,45,000</td>
</tr>
<tr>
<td>2015</td>
<td>36,25,000</td>
<td>4,25,000</td>
</tr>
<tr>
<td>2016</td>
<td>39,95,000</td>
<td>5,30,000</td>
</tr>
<tr>
<td>2017</td>
<td>44,95,000</td>
<td>6,70,000</td>
</tr>
<tr>
<td>2018</td>
<td>50,35,000</td>
<td>8,40,000</td>
</tr>
<tr>
<td>2019</td>
<td>56,15,000</td>
<td>10,50,000</td>
</tr>
<tr>
<td>2020</td>
<td>62,40,000</td>
<td>13,10,000</td>
</tr>
</tbody>
</table>

Source: India Brand Equity Foundation

IMPACT OF FDI IN INDIAN RETAIL SECTOR

FDI in the retail market will influence the industry in a number of ways. Some of them are as follows:

- With multinational retailers like Wal-Mart, IKEA, Tesco, Abercrombie & Fitch, Amazon, and others entering the Indian market, current retail agreements are anticipated to be streamlined.
- The Indian supply chain is anticipated to profit as a result of the terms and conditions of FDI investments, which include a minimum investment ceiling of USD 100 million and a requirement to invest 50% in backend infrastructure.
- The demand for agricultural products is expected to rise as new companies enter the retail market.
- The number of new international merchants entering the Indian retail market is projected to rise.
- Unorganized retail is expected to develop as well, albeit at a slower rate. In the retail sector, the quality and variety of items are also predicted to increase.
- Consumers in India would have easier access to a wider selection of international brands.
- Due to increased competition, Indian shops would be forced to improve the quality of their items.
As per IBEF, Singapore is the largest foreign investor in India in 2019, with 5.33 billion dollars and is followed by Mauritius, the Netherlands, the United States of America and Japan. In terms of industries, the nations listed above have invested in vehicles, chemicals, financial services, outsourcing, research & development among other areas.

CONCLUSION

The Foreign Direct Investment (FDI) that India receives is critical to its economic development. India has recorded great development through FDI such as employment prospects in many sectors, increased production and output. The investment has also made a rapid acceleration in the strengthening of the Indian economy through banking and insurance sectors. FDI is currently being attracted to the pharmaceutical industry as well. It follows that foreign direct investment helps to create jobs and expand small-scale enterprises while also assisting in the pursuit of making a distinctive imprint on the international economy.

REFERENCE

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Source: India Brand Equity Foundation