INTERRELATIONSHIP AMONG EDUCATION, GENDER AND MIGRATION IN CONTEXT OF SOCIAL TRANSFORMATION

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ABSTRACT

Aims: this study aims towards elucidating various paradigms of social transforms and interrelated aspects like gender, migration and education. Design: this study follows qualitative settings in terms of data analysis and interpretation Method: In terms of methodological alignment, this study has followed a primary data analysis technique. Survey data on the predetermined questions are analysed within a qualitative boundary. Results: The survey report has affirmed that education and migration with gender equity are all related in social transformational context. Current social trends observed in terms of various key social drivers such as genders, migration and education. Conclusion: The improvement in education system can support the society to adopt social transformation. The correlation among gender, education and migration has been established in this research.

Keywords: *Education, migration, gender, societal transformation*

Introduction

Education, gender and migration are three of the social dynamics that have a major impact on the comprehensive transformation of the values and belief system. As opined by Kivel(2017), education has been perceived as the key determinant for a better life. It is quite evident in the current knowledge-based societal settings that in order to compete in the ever-demanding industrial requirements, it is necessary to obtain formal academic training. Moreover, having academic competencies influences an individual's social, cultural and economic behaviours up to a great extent. On the other hand, intensification, as well as acceleration in gender equality, refers that the influence of gender in the social transformation is quite important also. As suggested by Tankard and Paluck(2016), social power and inequality in the economic, political and societal environment are making a detrimental impact on the sustainable change of the social order. In such a case, education within an adequate gender-equal framework should be maintaining diversity in the overall transformation process.

Moreover, migration is another key driver that is making significant construction to the social transformation process. Therefore, in this study, an analysis of the various migration trends alongside the impact of gender and education on social transformation has been presented. With the help of critical observation on the various dynamics of the three key drivers of social transition, a projection of interdimensional relation has been done. Therefore, the specific aim of this study is to demystify the social transformation drivers in context to gender, migration and education. Similarly, the objective of this study is to analyse interdimensional relationships among these three variables and whether they have a critical impact on the comprehensive transformation process.

Background

The relationship between human development and human mobility is one of the subjects of major academic controversy. The argument over migration and human development depicts several aspects, such as whether social development leads towards migration or not. As suggested by Amelina and Horvath (2017), the perception towards migration as social development failure has made critical adjustments to many country's policy settings. In addition to this, it is also quite arguable whether gender orientation influences migration trends. In the below figure, it can be observed that there are 272 million migrant populations around the globe which contributes to 3.5% of the world's population. Along with this, 52% of the migrant population are male, and 48% are females (We Forum, 2020). Moreover, most of the international migrants are under working age.

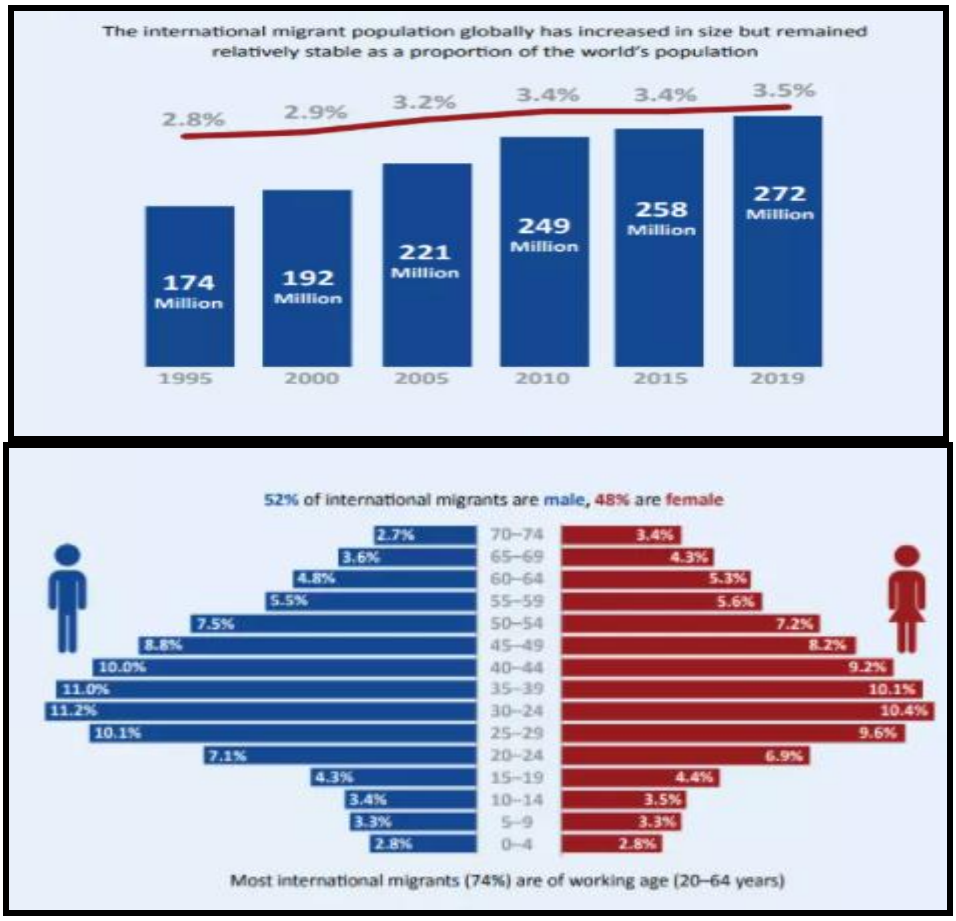


Figure 1: Migration statistics as per the gender orientation
(Source: We Forum, 2020)

This only implies while assigning about the migration behaviour of a general population, 'gender' should be a critical variable for consideration. Now, as the figure projected, the majority of the migration is associated with working-class people. Therefore, it can be said that employment should be considered as the prime human mobility factor. In context to the present development in the world order, gender features of the society play a critical role in the comprehensive upliftment. As per the views of Stephan *et al*. (2016), it does not matter what the socio-political context is; there should always be some emancipatory practices in context to gender discrimination. Similarly, after the transformation of the eastern European countries into more progressive and gender-equal societal norms, changes in the development was quite visible. As per the evaluation of Oyibo *et al.* (2017), gender equality in the cultural context has a bounteous effect on the overall development process. In precise, a balance of power between males and females in the social order has given more evidence on social transformation than the existing male-dominated social orders.

On the other hand, education's role in social transformation is undoubtedly the most critical one due to several aspects. As mentioned by Tankard and Paluck(2016), education with evidence-based practices can bring significant changes within an individual's attitude and perspectives on social orders. Simply put, differences between relevant and redundant social and cultural practices can only be witnessed through proper education backgrounds. Education acts as an instrument of change with the help of scientific and logical reasoning, training, skills and progressive thoughts. As per the analysis of Weinschenk *et al.*(2018), many of the developing countries' limited social practices and cultural dogmas can be traced back to the lack of education in the majority of the citizens. In precise, education is the specific bridge that fills the gaps of social inequalities through reforms and transformations.

However, it should be noted that education and gender have an interwoven relationship that has influenced the societal transformation process. As demonstrated by Rocha and Van (2020), education shapes ***"individuals' gender role attitudes"***also influences the overall participation of women in different social changes. As the current world order suggests, education is now used as the leveraging tool that can help society to achieve gender equality within a given cultural setting. Moreover, gender equality and development has always been part of the transformation agendas for global leadership. ***"Education 2030"*** agenda recognizes that the ***"gender equality action plan"*** primarily focuses on a ***"system-wide transformation"*** for the benefit of all the social layers (UNESCO, 2021).Hence, it is evident global leadership's philosophical alignment with gender and education is very much associated with social order transformations.

Now migration is within a comprehensive framework associated with the transmission of cultural values and cumulative societal practices. Based on the study of Schewel and Bahir (2019), the impact of migration on the livelihood of people is quite diverse. Moreover, migration can result in a change in culture, education, environment, gender-specific roles and many other aspects due to certain key variables like the host country's culture, economic attributes and increased income. Similarly, migration has also been correlated with various larger social phenomena such as democratic institutions, environmental degradation and transformation of gender norms. In precise, there are interrelated behavioural dynamics among education, migration and gender that influences socio-cultural development and transformation.

Method

This study has followed a primary data collection methodology in order to collect relevant data on the selected problem area. As per the observation of Mohajan(2018), primary data collection can be quite beneficial while evaluating demographic and societal dynamics. In such a case, this study followed a primary survey data collection and analysis technique. In regarding this survey, 20 random people have been asked ten predetermined questions on the chosen research area. These questions each have the capability to enlighten a specific context such as gender equality and discrimination, education and social changes, migration and social-environmental benefits. Responses are evaluated within a qualitative manner, and relevant literature supports are provided in terms of justifying context. As opined by Taherdoost(2016), qualitative and analysis of the survey data is quite beneficial in terms of incorporating human interests into the research. Therefore, analysis of the survey responses is done within a very detailed structure and evaluates any changing attitude, trends within a specific target group. In order to make the justification more aligned with a research objective, a flexible approach is taken in data interpretation***[refer to appendix]***.

Results and discussion

Relation between education and migration in society transformation

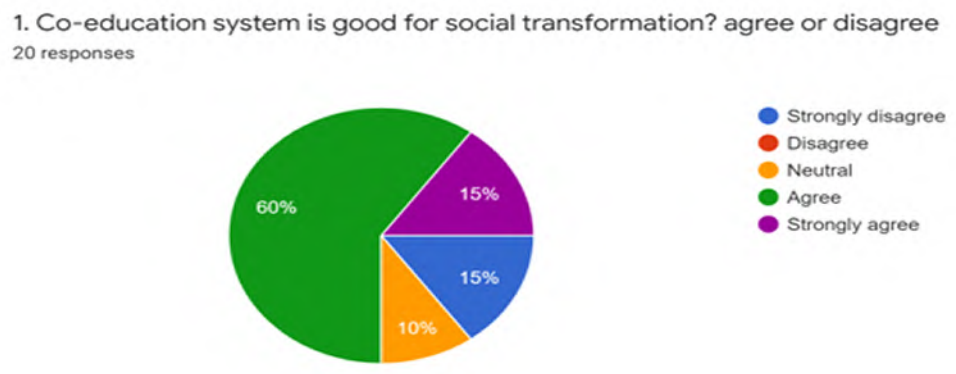


Figure 2: Co-education system and society transformation
(Source: Survey report)

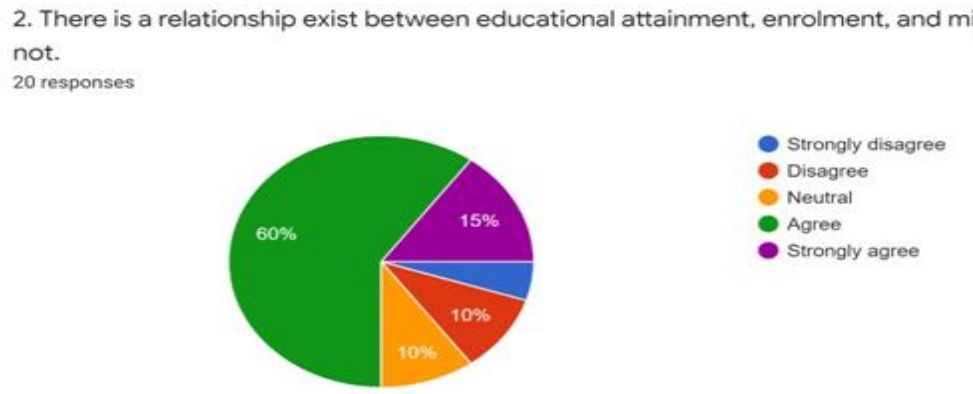


Figure 3: Educational attainment and migration
(Source: Survey report)

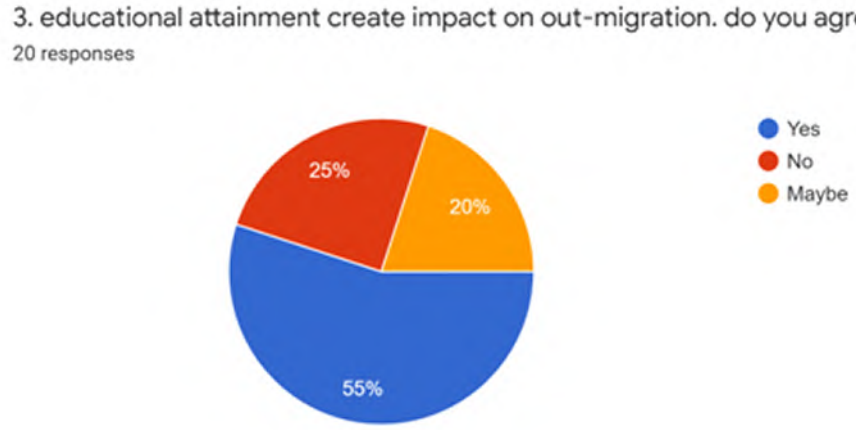


Figure 4: Educational attainment and migration
(Source: Survey report)

Co-education systems support the society to accept gender equality where every person, irrespective of gender, will respect each other. Through the Co-education system, children get brought up with a mind that men and females are equal in society, supporting social transformation (Bernard and Bell, 2018). Most of the respondents agreed that a strong relationship exists between educational attainment, enrolment, and migration. Educational attainment has a strong influence on out-migration, and a survey report has confirmed it.

Role of gender equity on migration rate and social transformation

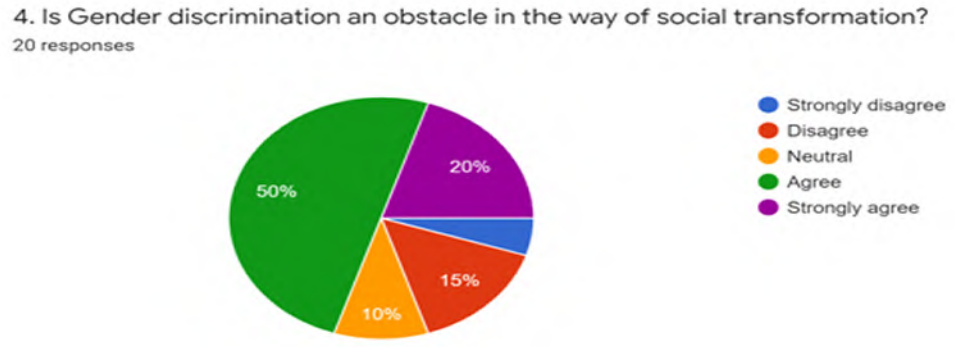


Figure 5: Gender discrimination in a social transformation context
(Source: Survey report)

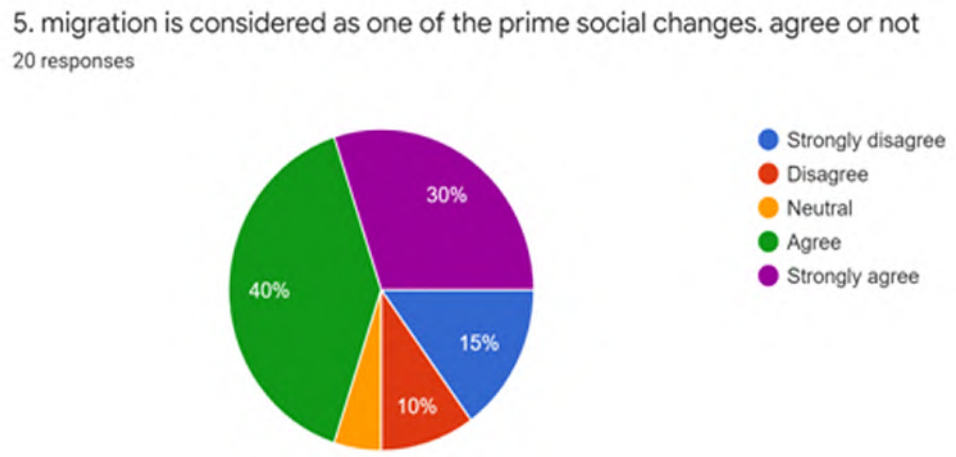


Figure 6: Role of migration in social changes
(Source: Survey report)

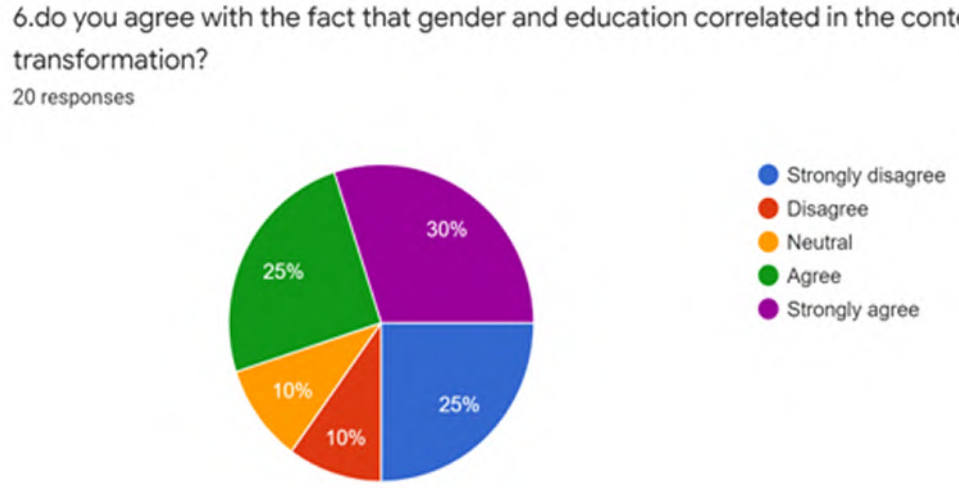


Figure 7: Gender and education correlation
(Source: Survey report)

The survey report has strongly agreed that gender and education are highly correlated in social transformation. Education supports society to have a better understanding of gender equality. The brief knowledge on the human equity Act of UK 2010, gender discrimination negative impact on society can be gained through learning the human resource management book (Cattaneo*et al.* 2019). Hence education provides the light of knowledge to society, which is the first step of social development. It can be stated that the gender discrimination issue from society will decrease if the literacy rate of the society increases. Moreover, the report affirms that migration brings prime social changes. Migration helps society to get more talent and improve the standard of its financial situation. On the other hand, the maximum respondent agreed with that point. Migration is one of the pillars of social transformation. Since migration supports talent exchange and knowledge exchange, it helps society get an economically advanced society with cultural diversity (Horvath *et al.* 2017). Moreover, gender discrimination is considered an obstacle in the social development process. Gender discrimination, the prevalence of males over females, and low opportunity to females increases domestic violence that is harmful to society.

Relation between gender, education and migrant in the context of social transformation

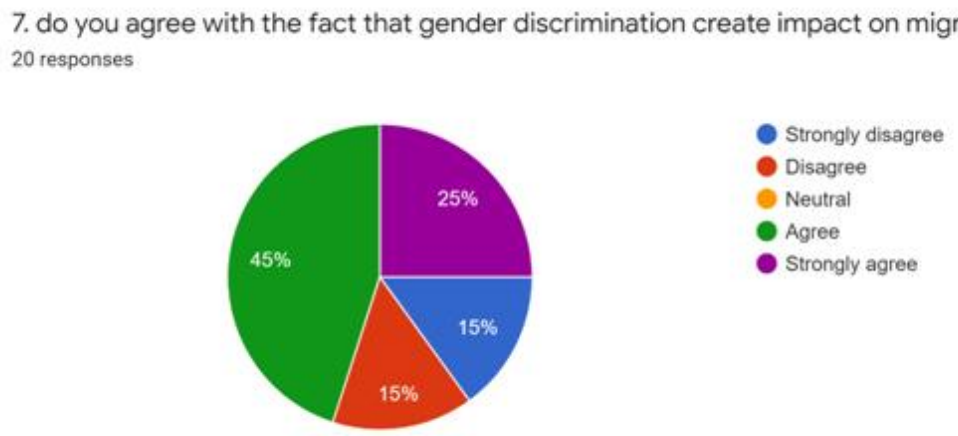


Figure 8: Impact of gender discrimination on migration
(Source: Survey report)

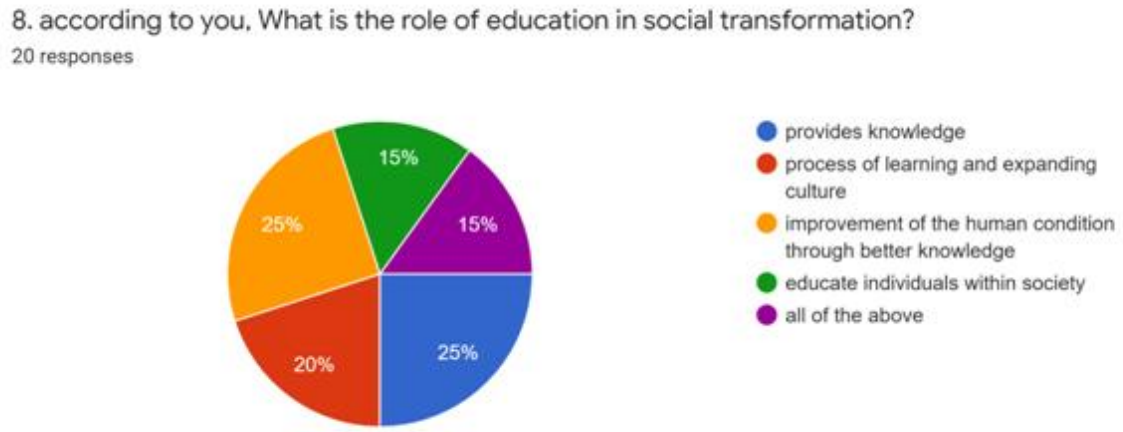


Figure 9: Role of education in social transformation
(Source: Survey report)

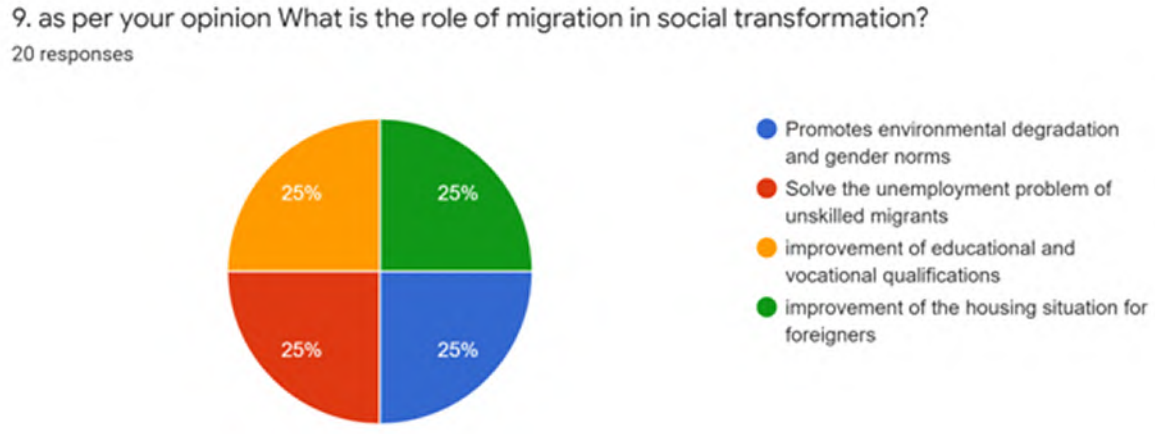


Figure 10: Role of migration in social transformation
(Source: Survey report)

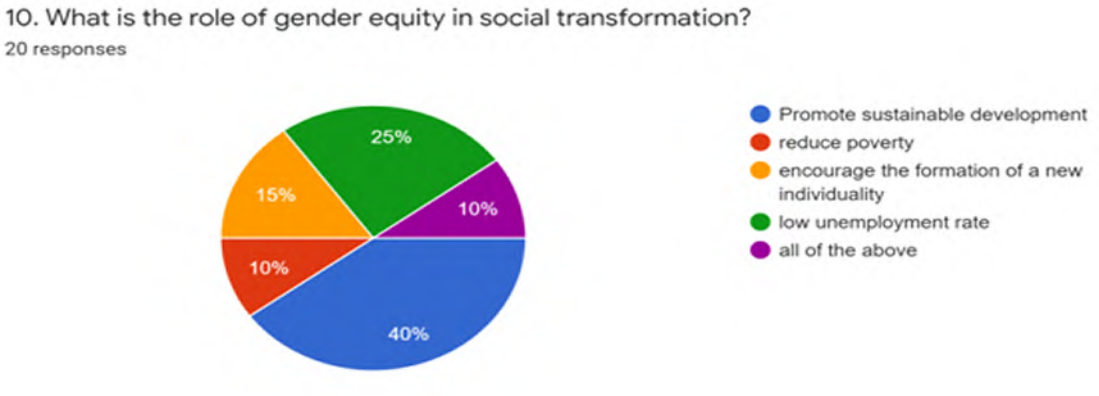


Figure 11: Role of gender equity in social transformation
(Source: Survey report)

The survey report supports that gender equality promotes sustainable development. However, gender equality has a strong role in reducing the poverty rate of the society, encouraging the formation of a new individuality, and lowering the unemployment rate. Gender equity allows the society to create equal education opportunities and migrant opportunities for all people, and social equity develops as a part of social transformation (Webb *et al.* 2017). By lowering society's unemployment rate by providing equal educational scope to the individual, gender equality improves society's financial condition. On the other hand, the survey report implies that migration solves the unemployment issue, improves the number of educational and vocational professionals, and improves the housing situation for foreigners. The development of balanced society culture, an improved education system, and a stable and welcoming environment accepting new cultures contribute to migration in social transformation.

Moreover, education educates the individual of society and provides cultural knowledge to accept a new culture and develop a diverse culture in the society (Eastin, 2018). The ability to accept a new culture is the contribution of education in social development. Through increasing the literacy rate, education guides the society to develop a stable economic situation that improves the wellbeing of the society. Moreover, knowledge sharing is the part of education that supports the society from getting rid of prejudice, stereotype ideas. On the other hand, from the survey report, it has been seen that gender discrimination creates a negative impact on migration by lowering the job opportunity for female employees and female candidates (Hynie, 2018). On the other hand, gender discrimination lowers the job flexibility, job reaction for females and it the curb in the way of social development. Briefly, it can be stated that gender equity, migration opportunities, and the nation's education standards are interrelated.

Discussion

Gender equity can be considered as a very primary step of social transformation. A positive social transformation indicates caste discrimination-free and gender discrimination-free society culture. Gender equality leads to removing societal discrimination that has a high role in migration (Laliberte Rudman *et al.* 2019). The developed and advanced education supports the nation to be technically updated and utilize its human resource. As a result, due to having a high job prospect, the people do not get interested in migration, and brain damage of the country decreases.

On the other hand, Ivanchev*aet al.* (2019) mentioned that migration improves social interaction by developing a diverse society. The children of the society learn to welcome different cultural people. It supports them to get engaged in international business in coming days when the company has employed people from different cultures. Migration reduces the unemployment rate of society and improves the quality of peoples' life. As Erel and Ryan (2019) illustrated, migration offers the people to learn about new customs, languages, and culture that supports improving the brotherhood among the people. On the other hand, brotherhood improvement reduces the

violence from the society and develops a peaceful society. The intercultural transformation between two countries through the exchange of migrants allows the nation to bring social development (Schewel, 2020). On the other hand, since migration influences the education of a nation, the society develops through obtaining traditional education. On the other hand, the low scope for the migrant student to get educational opportunities in foreign countries can harm the society development process and violate the law of human rights.

The social transformation will be implemented if the maximum citizens of the nation get out of poverty, and through providing job opportunities, migrants are allowed to cross the poverty line (Pavlovskaya, 2018). On the other hand, disagreements between different religions and cultures are the negative result of migrants that can be harmful to society (Robertson, 2019). Greater occupational specialization, a better-educated workforce, innovation adoption and economic productivity are the positive impact of migration and education on society. Hence as a brief, it can be stated that gender, migrants and education are all interrelated in the social transformation context.

Conclusion

Migration creates an impact on phenomena such as environmental degradation, democratic institutions, and gender norms through the resources provided by remittances or transmission of values and knowledge. Migration can change the skill composition in both origin countries and destination countries. Educational investments and enrolment rates are highly affected by the migration and encouragement to society in knowledge sharing to promote the country's economic development. Multicultural Societies are the typical result of migration, and multicultural society encourages the education system to cover up the multiculturalism that enhances the cultural sense of the students. Lack of services, lack of safety, high crime, crop failure, drought, flooding, poverty, and war are the social causes of migration. Diverse culture is the form of social development, and migration promotes diverse cultures.

On the other hand, if the nation does not have a standard education system, citizens migrate to other countries with high employment rates. Migration supports society to mitigate the labour cruise issue and be the cause of overcrowding. Migration and education are considered the engine of social change. People generally migrate for getting a better education, economic opportunities and escaping violence. The education of the children decides how much the student will be able to contribute to his or her nation or community. Hence the migrant children must have equal opportunity and the right to education.

Gender equality indicates the equal human right for each one, including migrants and natives. In social transformation, gender has a strong and influencing role in abolishing the discrimination between men and women. The development of equal rights for individuals is the sign of social transformation, and the gender gap of the nation may resist the social and government to implement that social transformation. It has been seen that male people have a high tendency to migrate compared to female candidates. Hence it can be stated that social transformation will be implemented only when each man and woman will have an equal job opportunity and opportunity to migrate as per their wish. The educational culture of the nation has a strong role in its migration rate and social transformation growth.

Gender equality will support to prevents violence against women, developing equal human rights, to make society safe for women, and it is a strong sign of social transformation. In present days the poverty rate of women is more than men, and the aim of social transformation is to decrease the poverty rate of women by creating equality and merit based on the opportunity for each. By creating equal education enrolment for each gender, society is transforming in a positive direction. The poor educational opportunity and gender-based opportunity influence people to migrate to other locations, and this is detrimental to the social transformation process. The higher priority to male students than female students can lead to social development degradation, and it can harm the society's balance. Educational attainment for women has been

changed with the change of labour force participation and the role of gender. The role of gender or influence of gender gap in education, employment, and marriage may lead the society to degradation.

Future scope

In future days how education and migration are creating an impact on transformational change in different communities can be analysed. Moreover, discussing the process of social transformation with considering the factor of migration, gender equality, and education can be made in the future study. The study is based on only survey reports, and in the future secondary research on this topic can be done to highlight the different perceptions of different authors regarding social transformation and education, migration and gender's role in it (Arifin, 2018). Additionally, the impact of social transformation on the economy and social development of a nation can be another discussion point in future research.

Ethical consideration

While conducting the survey process, some major considerations are taken in the data collection methodological settings. As per the views of Arifin (2018), consent of the participants needs to be obtained before conducting a primary survey; in such a case, all the participants are provided with informed consent forms. Entire data collection and analysis has followed the participant's anonymity policy which depicted no individual harm should be brought upon by information protocol breach. Similarly, data has been stored within a cloud storage facility with maximum encryption. Moreover, no data has been used for any kind of business purpose. The use of the data is strictly valued within a given academic context, and after completion of the study, they will be destroyed. Moreover, data protection guidelines provided by the GDPR have been followed throughout the study progress. Along with that, for avoiding the ethical issues related to primary research, it is also highlighted that respondents are not bound to answer every questions.

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Appendix: Survey questions

1. Is coeducation system is good for social transformation?
2. Is there any relationship exist between educational attainment, enrolment, and migration?
3. Does educational attainment create impact on out-migration?
4. Is Gender discrimination an obstacle in the way of social transformation?
5. Is migration a social change?
6. Are gender and education correlated in the context of social transformation?
7. Does gender discrimination create impact on migration?
8. What is the role of education in social transformation?
9. What is the role of migration in social transformation?
10. What is the role of gender equity in social transformation?

AN EMPIRICAL STUDY FOR ASSESSING READING SKILL – A CASE STUDY WITH REFERENCE TO ENGINEERING GRADUATES OF ERODE REGION

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ABSTRACT

Reading is an important part of any learner's life. In this competitive environment, it is necessary to be informed in order to attain one's objectives. Reading is a common academic skill that is linked to writing. Reading is a pleasurable language ability that plays an important role in the growth of one's life and society. It is a plausible statement that a person who can read and write can lead humanity. This vital linguistic talent is incorporated into the educational system, and it becomes the educational system's equivalent. As a result, the ability to read has become a must for kids who want to achieve great success in life and in school. This ability to respond inspires readers.This research paper sheds light on significance of reading, its strategies and assessment of B.E. Mechanical Engineering students and B.E Electronics and Communication engineering students through a questionnaire. The questionnaire is divided into two phases. The first phase deals with common habits of selected learners and the second phase with five types of reading assessment connected to their academic study. The researcher has followed qualitative and quantitative methods for the assessment.

Keywords: *responsive skill, critical thinking, assessment, dynamic role, language skill, competitive scenario and reading strategies*

Introduction

A well-structured attempt to share one's experiences, thoughts, ideas, and information is referred to as communication. It is always evaluating itself through words. In any language, there are four major modalities of information communication. Listening, Speaking, Reading, and Writing are the methods. These abilities are divided into two categories: receptive and productive abilities. Reading and listening skills belong to the first group, while writing and speaking skills belong to the second. Prescribed curricula of NCERT, SCERT, Central or State Universities are used to teach communication in English from elementary to collegiate levels. Engineering is one of the education streams in India that produces good technocrats in various engineering divisions every year. Engineering students, without a doubt, require English communication in order to meet the expectations of today's corporate world. Engineers must also efficiently correlate and communicate with a diverse team, as well as express impede concepts to non-technical groups. During this research programme, expository text structures were taught. To investigate the effectiveness of the training programme, data was analysed using independent sample t-tests and paired t-tests. The results clearly showed that participants in the experimental group who received text structure training outperformed participants in the control group when teaching reading using the traditional method.

Review of related Literature

Reading holds a very dignified position and plays a very dynamic role in the development of humanity and global society. It is critical for the students' academic success and achievement. In today's world, reading is a fundamental language function. It is important to master reading because it is a part of one's daily activities such as reading instructions from a manual, warnings on a medicine bottle, reading sign boards, directions while travelling, or reading pamphlets, etc. Books, magazines, journals, and the internet, which is an excellent learning tool, necessitate the ability to read and comprehend the content or context. According to Hermida, J. (2009), "We are heading towards a digital nation where we are overflowing with information, but reading is the primary way to take advantage of it." Reading aids in the discovery of new things, the development of creativity, and the

development of imagination power."It is more important and difficult to transition from reading in a conventional classroom to reading in an authentic classroom. According to Muthaiyan M.D.K. (2016), non-readers are at a significant disadvantage. 'Reading maketh a full man, conference a ready man, and writing an exact man,' said Francis Bacon.

Reading English is a fundamental skill for acquiring professional knowledge in one's academic background and future career because many authentic textbooks and information about advanced technology are published in English. Another important consideration is that English reading comprehension ability is required to deepen their professional knowledge at their workplaces, and engineering students must read English fluently. Furthermore, it is believed that a person who can read and write is capable of leading humanity. The printed word has the power to change the way people think and live. As we live in a postmodern era of rapid technological advancement, we must contend with the conditions of "information explosion" and "information overload". Though some information comes from electronic media such as television or radio, we do not require much reading skill; however, the majority of the information we require to fulfil or cope with our daily needs comes from written sources such as newspapers, books, magazines, and computers. This necessitates reading abilities. This necessitates reading abilities. In this day and age of computers and technology, the world has shrunk to the size of a village, and it is now possible to obtain any needed information right at your doorstep by using the internet. According to Harvey and Goudris (2000), reading strategies are essential tools for effective comprehension because they assist the reader in understanding written tasks. Levine Fernez & Reeves conducted another study on reading ability and its role in university students in 2000. They indicate that one of the most important skills that university students of English as a second and foreign language ESL/ESL must acquire is the ability to read academic text (Levine, Ferenz, & Reeves, 2000).According to Koda, (2005) "Comprehension occurs when the reader extracts and integrates various information from the text and combines it with what is already known". Urquahrt & Weir(1998) pointed out that 'Reading is the process of receiving and interpreting information encoded in language form via the medium of print'. Reading comprehension is the result of an interaction between the reader, the reader's strategies, the material being read, and the context in which reading occurs (Edwards & Turner, 2009). In the research of Prtichard and Nasr (2004) "English was an important international language for engineering students. in other words, acquiring proficient reading skill in English for technology is required in their workplaces in future. Tompkins (2007) mentioned that students can identify the expository text structure implemented in the reading passage, its helps them to discover the main ideas. Reading directly correlates with a student's ability to summarize the information after identifying the main ideas. There are two related strategies that makes impact in the reader's ability to comprehend text.

Hypothesis:

1. To investigate the effectiveness training on students' improvement of reading skill.

2. To identify the vocabulary level of the students' in Reading comprehension

Teaching Reading is essential in school and colleges

Reading is an important tool for academic success because it allows students to access more useful information (Alderson, 2000). Reading is an important part of every learner's life. Reading keeps one up to date on current events. It is a skill that the slow learner can easily acquire. The majority of students read using one of two methods: reading aloud or silently. The former allows for the correction of pronunciation and spelling. When a learner progresses from school to collegiate education, silent reading becomes more useful. Students can practise their reading skills after they have been equipped with them through comprehension exercises and faster reading textual matters. Once the reading skill has been strengthened through comprehension exercises and faster reading textual matters, students can practise it independently for self-study. In teaching, students are given the opportunity to read aloud in front of their peers, which leads

to them understanding context, enjoying reading, obeying instructions, and discovering facts and information on their own. It's another chance for him to correct his mistakes and improve his reading skills. In “Techniques of Teaching English", Dr. Shaik Mowla emphasises that ‘silent reading is a useful skill in the later stages of learning a language." The senior student must read a large number of reference and other books and understand the gist of them in order to use them. He should learn to read good literature both for pleasure and for profit. Reading ability is a necessary tool for students to achieve academic success. Effective reading comprehension appears to be possible only if readers actively interact with and are interested in reading the text. (Flowers, 2010).

Reading instils the habits of paying attention and discovering facts and information. It has something to do with the habit of working in a limited amount of time. It is associated with the learner's intense curiosity. Reading assessment through reading habits of Engineering Students of Velalar College of Engineering and Technology, Erode, Tamil Nadu were considered. Students who enrolled in Engineering finish their +2 and enter this technical science course through counselling. Many students believe they have gained new independence. It is difficult for faculty members to motivate students to follow the new curriculum. At this point, the reading habit helps students gain knowledge in core subjects as well as English. According to Grabe (2009), "Reading fluency is the ability to read quickly with exact ease and accuracy and to read with appropriate phrasing." It is a long process of incremental learning, and text comprehension is an expected outcome of fluent reading". Effective teachers help students develop their vocabulary by modelling the use of precise words in conversations, instruction, and discussions about texts or content. Words in context provide clues to meaning; isolated words do not. New, interesting, or critical words for understanding a text must be thoroughly investigated. Before beginning to read, the teacher selects a few new or difficult words — those for which context are insufficient to deduce meaning from content clues (i.e., words around the unknown word).

When students develop their reading skills through books, they focus on a specific area of reading. They are

- Organizing reading
- A routine establishment in reading
- Planning the working week
- Preparing a timetable
- Having ideal time in terms of use of time etc.

Some books are intended to be used with checklists or grids to prompt students to question themselves. On the other hand, some books assist in posing questions to raise self-awareness, which then leads to discussions and comparisons with peers or family members. A questionnaire is a good example of a primary awareness raising activity. It encourages students to be ideal, and it is part of a unit on 'How realistically are students using time?'

The researcher has developed a few assessment parameters for testing the reading ability of selected Engineering College students. To assess their reading skills, 500 students were chosen from five disciplines: Computer Science and Engineering, Mechanical Engineering, Electronics and Communication Engineering, Electrical and Electronics Engineering, and Civil Engineering. Initially, students are instructed to complete a questionnaire consisting of five questions designed to assess the amount of time they devote to reading in their daily activities.

Methodology

In order to answer the research question posed in the current research, combination of quantitative and qualitative design was selected and the efficacy of the strategy instruction had been measured through quantitative method applying strategy use questionnaire and reading comprehension tests; and the researcher’s observation and note taking triangulated the source of data collection and data analysis. It is selected as quantitative method helps the researcher to involve considerable number of samples from final year engineering students from selected branches. The qualitative method makes room for the study and analyzes responses of the sample in detail.

The researcher has selected a survey-questionnaire method. It is chosen for the following reasons.

- Data provided based on real world observations
- Primary sources are clearly available
- Able to manage with big population
- Analysis becomes simple and easier
- Outcome can be obtained faster.

Tools used for the research

In this current study, two instruments were used: a strategy questionnaire and a reading comprehension test. Questionnaires on strategy use are used as a means of increasing students' strategy awareness and assessing their strategy use. The data collection instruments used in this study are based on the Socio-demographic Performa, which includes questions about their parental background and academics.

- Questionnaire on reading assessment
- A technical passage for reading chosen by students
- An academic related passage.

Answer the following questions about yourself carefully. If your reply is truthful you will have an opportunity to learn facts about your work rhythm which will be useful when you plan a study timetable for a week.

1. How often in an hour do you generally like to get up and stretch your legs while reading a text book?
    a. For every ten minutes
    b. For every five minutes
    c. For every twenty minutes
    d. I don't feel to get up and stretch my legs
2. At what time do you feel the best to study?
    a. Early Morning
    b. Afternoon
    c. Evening
    d. Late at night
3. Mention the hours you study at the same time every day in the week. (exclude meal and travel times)
    a. Between 5.00 a.m to 7.00 a.m
    b. Between 2.00 p.m to 5.00 p.m
    c. Between 7.00 p.m to 10.00 p.m
    d. Between 11.00 p.m to 1.00 p.m
4. How long does it take for you to read ten pages of text book /Novel?
    a. 25 minutes
    b. 30 minutes
    c. 45 minutes
    d. 60 minutes
5. How long does it take for you to read ten pages of novel?
    a. 20 minutes
    b. 30 minutes
    c. 45 minutes
    d. 60 minutes

For the above general questions given by the researcher is used to select students of five hundred from all the five mentioned branchesand obtained mixed responses.

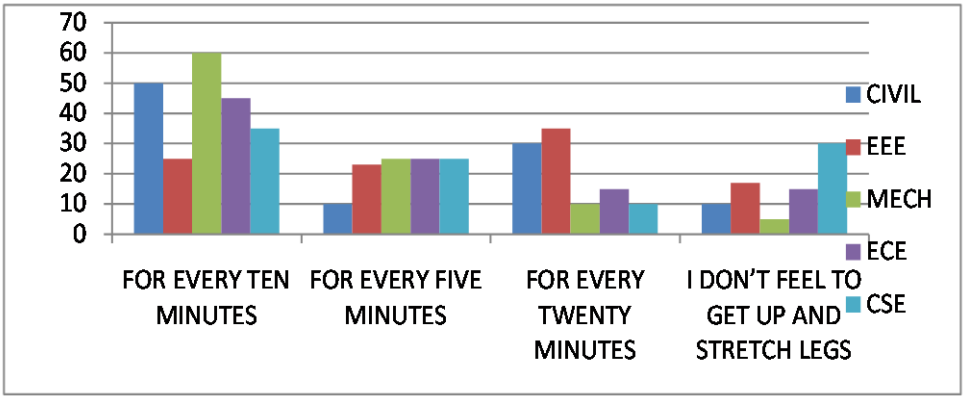


Fig 1. Stretch level of the students of allfive branches

From the above Fig1. non-circuit and circuits branch students the concentration level seems to be increased by providing a lot of technical inputs while reading. It is identified that the non-circuits branch students need a support mechanism for the better reading.

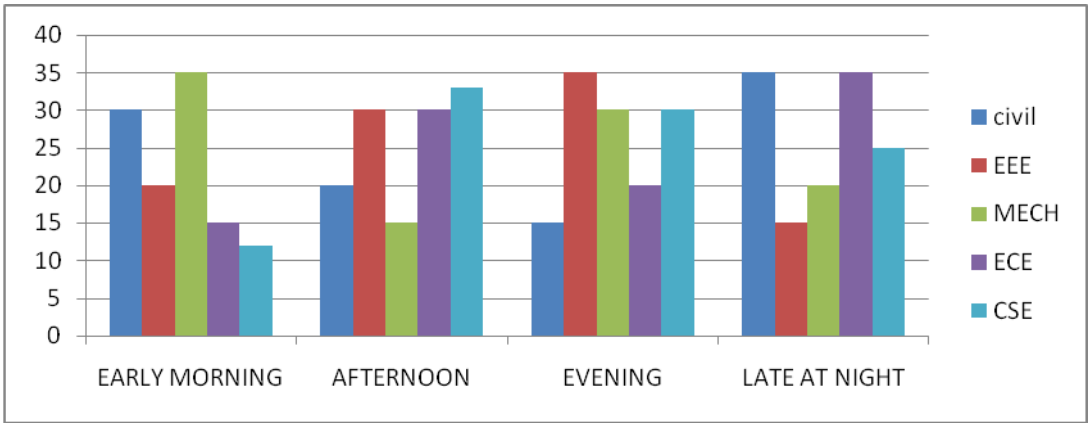


Fig.2 Study Time preference of all branches

From Fig. 2 most of the students from Mechanical engineering have preferred to study early in the morning whereas number of CSE students are least interested in studying at this time. Civil engineering students are also similarly interested to read at this time. most of the CSE students have preferred to study at afternoon whereas students of Mechanical engineering have showed least interest. Both ECE and EEE students have shown equal interest in studying at afternoon. Students of EEE are more enthusiastic to study in the evening whereas civil students are least interested in studying. Both ECE and CSE students are equally shown interest in studying at late night than other times. The researcher has come to know that the interest of the student might have concerned on factors like environment, surroundings and their day to day activities schedule.

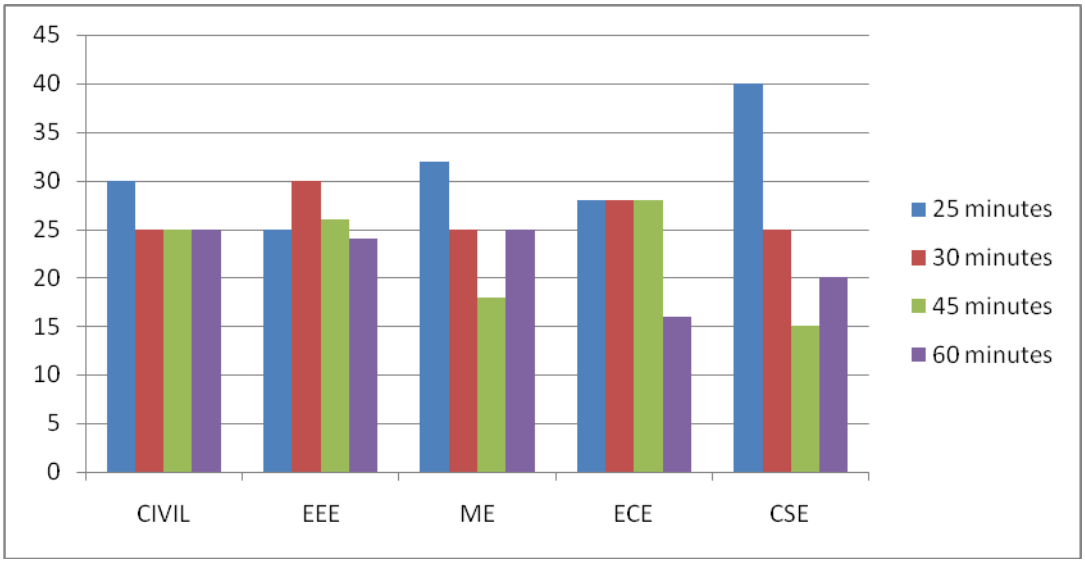


Fig. 3 Time taken by the students of various branches to read the text book

From the Fig.3 the selected students are asked to answer how much time they would take to read ten pages from their text book. Civil students have quickly responded and answered that they take only 25 minutes to read as the content is taught by their teachers in the class room. Remaining three branches of the students have answered that they take 30 minutes to complete it. EEE students take 3 minutes to read 10pages from their text book whereas ME students take 45 minutes to read and CSE students mostly take 25 minutes to study 10 pages from their text books. ECE students' ratio is almost equal with students who have preferred 20, 30, 45 minutes reading.

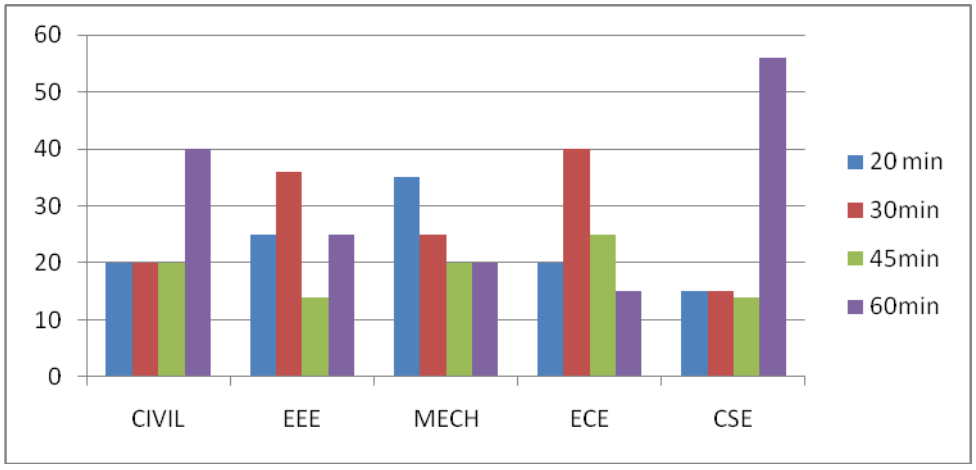


Fig.4 Time taken for reading Novels

From the Fig. 4 represents the time allocated for reading a novel by selected engineering students for the study. Many engineering students have answered that they show less interest in reading novels as they hardly find time to read nonacademic books. Most of the CSE students take 60 minutes to read ten pages of a novel. ECE students take 30 minutes to read 10 pages from a novel. ME students 20 minutes to read whereas Civil students also take 60 minutes to read 10 pages from a novel due to the above responses the researcher has understood that nonacademic reading is depended upon interest of the students as it is not compulsory to read a novel. Yet some of the students are active to improve their reading skills through reading novels.

The second phase of questionnaire for selected engineering students.

The research is conducted to extract the strength and areas of development (weakness) of selected students in their levels of reading. They are also assessed as per their interest, previous knowledge regarding language and impact of vernacular language. Selected students from five branches are given a two passages text for assessing their reading in the following variables.

1. Identification of vocabulary in the context
2. Recognizing Main idea
3. Identification of supporting details
4. Recognizing implied main idea and the central point
5. Understanding relationships of the words and difference between facts and opinions

Identification of vocabulary in context.

Two reading practices are given to selected students and instructed to concentrate on the two types of context clues and multiple choice questions.

Out of 500 students who have taken up the tests 160 students have scored full marks (10/10) whereas 66 students have secured 9/10 marks and the majority of the students and 59 students scored 8/10 remaining 29 students have got 7/10. The researcher has found 54 students have got 6/10 and 17 students have scored 5/10. 45 have got 4/10 and 5 students have secured 3/10 and 10 have secured 2/10. 36 students have got 1/10 and 23 students have got 0 marks.

Identification of vocabulary in the context

Branch	10/10	9/10	8/10	7/10	6/10	5/10	4/10	3/10	2/10	1/10	0/10
Civil	30	23	10	2	10	6	10	5	4	10	10
EEE	20	15	10	3	20	10	5	0	3	10	2
ME	30	6	12	4	10	0	10	0	2	10	6
ECE	40	12	13	10	4	0	20	0	1	4	3
CSE	40	10	14	10	10	1	0	0	0	2	2

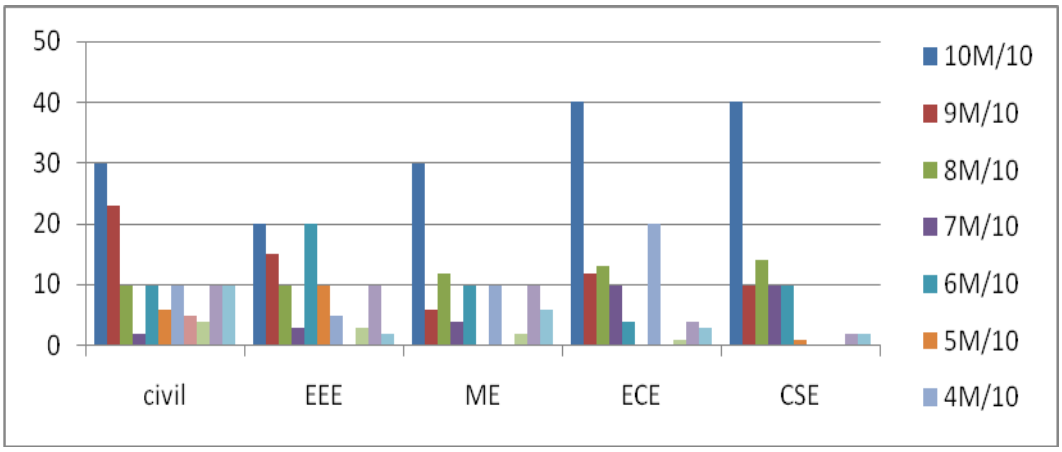


Fig.5 Identification of vocabulary in the context

According to the Fig. 5, the identification of vocabulary in context is tested through a reading practise for selected Engineering students. Most of the students from ECE and CSE students secured 10/10 marks. Most of the civil students have got 9/10 as well 0 marks have been recorded by 10 students from civil branch. So the researcher has understood that students need to read other books to improve their vocabulary skills.

Recognizing Main Idea

Branch	10/10	9/10	8/10	7/10	6/10	5/10	4/10	3/10	2/10	1/10	0/10
Civil	4	23	2	10	6	10	10	5	30	10	10
EEE	3	15	3	10	20	10	5	0	20	10	2
ME	2	6	4	12	10	0	10	0	30	10	6
ECE	1	12	10	13	4	0	20	0	40	4	3
CSE	10	0	10	14	10	1	0	0	40	2	2

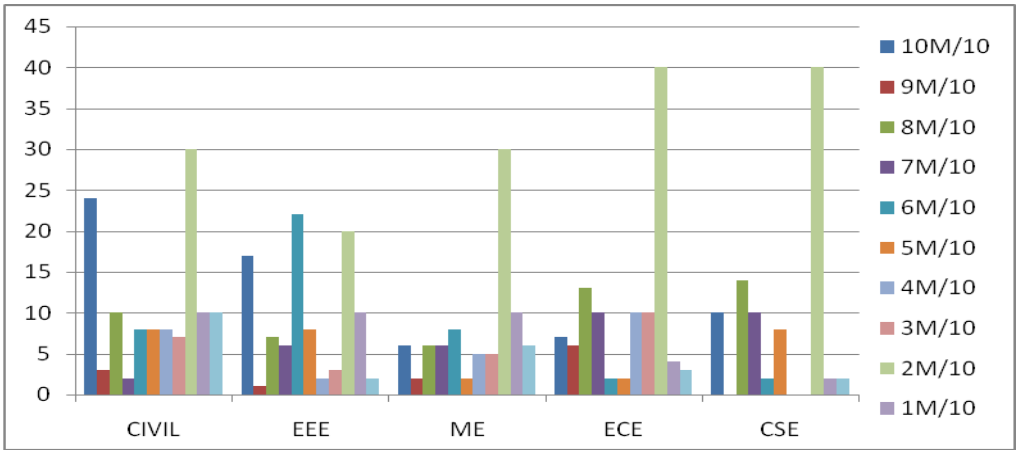


Fig.6 Recognizing Main Idea

According to Fig. 6, the selected students took the test administered by the researcher in order to assess their ability to recognise the main idea of the test. Least number of students have secured 2/10 marks. Out of 500 students 23 students from civil branch have secured 9/10 and 23 students have got 0/10. The researcher has understood that students need to practice reading texts as they are not good at recognizing the main idea of the text. They might not have concentrated on reading and focused on academics.

Identification of supporting details

Branch	10/10	9/10	8/10	7/10	6/10	5/10	4/10	3/10	2/10	1/10	0/10
Civil	24	3	10	2	8	8	8	7	30	10	10
EEE	17	1	7	6	22	8	2	3	20	10	2
ME	6	2	6	6	8	2	5	5	30	10	6
ECE	7	6	13	10	2	2	10	10	40	4	3
CSE	10	0	14	10	2	8	0	0	40	2	2

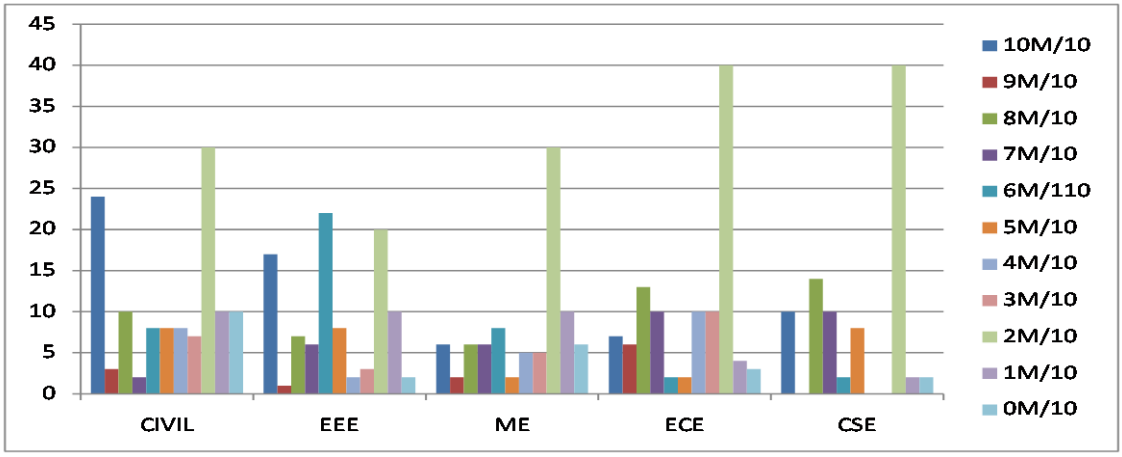


Fig.7 Identification of supporting details

According to Fig.7, the selected students are tested on identifying support details in the given text. Only 24 students out of 500 received a 2/10, and 160 students received a 1/10. 23 students received a 0/10. According to the researcher, students must learn to skim and scan when reading.

Recognizing implied main idea and the central point

Branch	10/10	9/10	8/10	7/10	6/10	5/10	4/10	3/10	2/10	1/10	0/10
Civil	2	23	4	10	6	10	10	5	30	10	10
EEE	3	15	3	10	20	10	5	0	20	10	2
ME	4	6	2	12	10	0	10	0	30	10	6
ECE	8	5	10	13	4	0	20	0	40	4	3
CSE	10	0	10	14	10	1	0	0	40	2	2

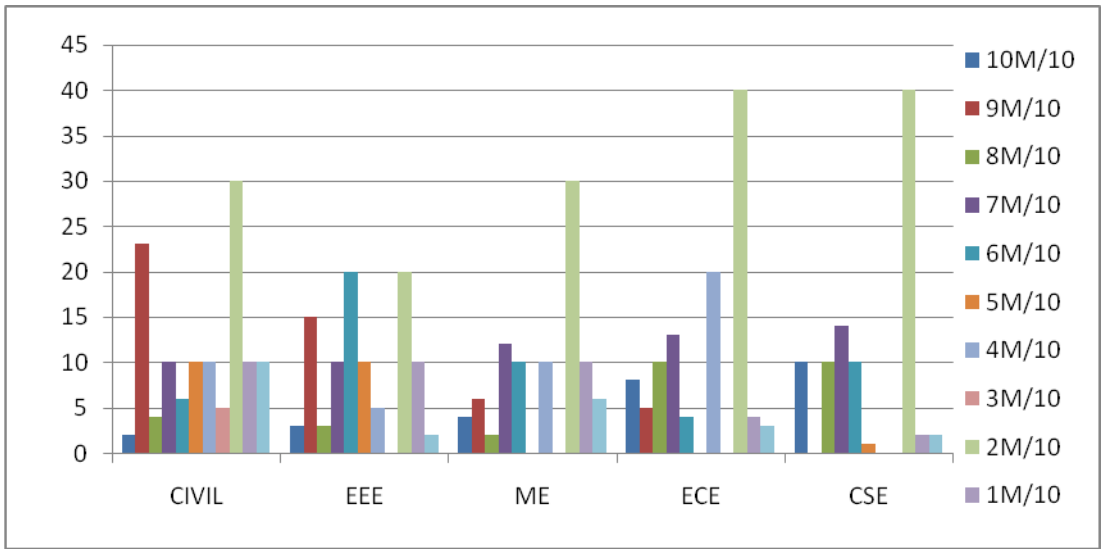


Fig.8 Recognizing implied main idea and the central point

Figure 8 depicts that the selected students were tested on their ability to recognise and infer the main idea to the central point through second reading practise. Only 27 students out of 500 received a perfect score. Only 160 out of 500 students received a 2/10. The researcher looked into whether students needed training to improve their reading skills.

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Understanding relationships of the words and difference between facts and opinions

Branch	10/10	9/10	8/10	7/10	6/10	5/10	4/10	3/10	2/10	1/10	0/10
Civil	3	15	10	4	8	6	5	10	20	10	10
EEE	2	23	10	10	25	5	3	2	30	10	2
ME	8	6	9	11	5	5	5	5	40	10	6
ECE	4	5	13	10	4	0	10	10	30	4	3
CSE	5	5	14	10	5	6	0	0	40	2	2

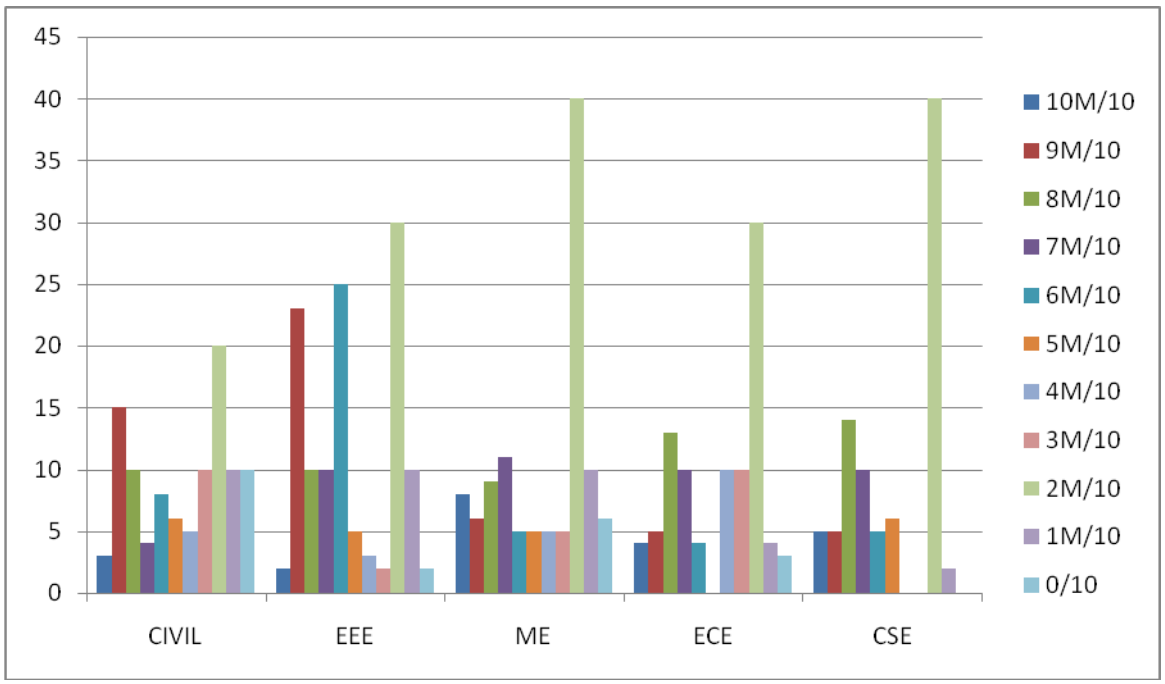


Fig. 9 Relationships of the words and difference between facts and opinions

The chart represents that the chosen students were tested to determine their understanding of word relationships and the distinction between facts and opinions. The students are assigned a task for this assessment. Only 22 students received 10/10, while the remaining 23 students received 0/10. 160 students received 2/10. The researcher discovered that students need to be trained in reading equipment.

Conclusion

The above study was conducted at Velalar College of Engineering and Technology with 500 selected students from five branches, and their reading skills were assessed using two phases of a questionnaire. All of the students responded well, and teachers also helped the researcher by allowing them to complete the questionnaire. Through reading assessments, the researcher discovered that students must concentrate on improving their reading skills. They should emphasise the importance of reading because it is directly related to their academic performance. They should be able to keep up academically as well as with language skills, particularly reading. It is a skill that is linked to listening, writing, and speaking. If a person is good at reading, they can master these three language skills. According to the researcher, students should be cared for in areas of development where they are lacking through this assessment.

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CASH, INVENTORY AND RECEIVABLES MANAGEMENT IN CONSUMER COOPERATIVE WHOLESALE STORES IN TAMILNADU

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ABSTRACT

Cash ratio plays a crucial role in consumer society operations. The cash is most commonly used as a measure of a company's liquidity. If the company is forced to pay all current liabilities immediately, this metric shows the company's ability to do so without having to sell or liquidate other assets. The secondary data collected from consumer cooperatives in Tamilnadu region. Further, ratio analysis is applied for analysis. It is found that the consumer cooperative wholesale stores in Tamilnadu Accounts Receivable ratio have increased from 62.53 per cent in 2009-10 to 99.05 per cent in 2018-19.

Keywords: *Cash, Inventory, Receivables and Consumer Cooperative stores*

Introduction

Cash is considered as vital asset and its proper management support company development and financial strength. An effective cash management program designed by companies can help to realize this growth and strength. Marketable securities also come under near cash, serve as back pool of liquidity which provides quick cash when needed.

Abuzayed, B. (2012) Inventory management is basically related to task of controlling the assets that are produced to be sold in the normal course of the firm's procedures. The operational objective is to uphold enough inventories, to meet demand for product by efficiently organizing the firm's production and sales operations

Accounts receivable typically comprise more than 25 percent of a firm's assets. The term receivables are described as debt owed to the firm by the customers resulting from the sale of goods or services in the ordinary course of business. Receivables are forms of investment in any enterprise manufacturing and selling goods on credit basis, large sums of funds are tied up in trade debtors.

Research Need and Problem

The cash is required to be kept aside to overcome the period expected as the period of cash shortage. A firm conducts credit sales to shield its sales from the rivals and to entice the potential clienteles to buy its products at favourable terms. It is for these receivables are regarded as a connection for the movement of goods from production to distributions among the ultimate consumer.

Methodology

The present study explores to identify funds management of Consumer Cooperative in Tamil Nadu Region. Descriptive technique method is applied for this study. In Tamil Nadu, Consumer Cooperatives are functioning with a three-tier structure with the Tamil Nadu Consumers' Cooperative Federation at the apex level, 34 Consumer Cooperative Wholesale Stores at the district level and 370 Primary Cooperative Stores at the field level. The secondary data collected from consumer cooperatives in Tamilnadu region. Further, ratio analysis is applied for analysis.

Frame Work of the Variables

Cash Ratio

The cash ratio is a measurement of a company's liquidity, specifically the ratio of a company's total cash and cash equivalents to its current liabilities. The metric calculates a company's ability to repay its short-term debt with cash or near-cash resources, such as easily marketable securities.

This ratio computed as follows:

$$\text{Cash Ratio} = \frac{\text{Cash and Bank Balances}}{\text{Current Liability}} \text{ X100}$$

Liquid Assets Ratio

Liquid assets ratio is an important liquidity management tool to assess the extent liquid assets can support to total asset. The proportion of liquid assets to total assets indicates the overall liquidity position of the TNCCWS. This ratio is calculated as follows:

$$\text{Liquid Assets Ratio} = \frac{\text{Liquid Assets}}{\text{Total Assets}} \times 100$$

Inventory Turnover ratio

Inventory is the account of all the goods a company has in its stock, including raw materials, work-in-progress materials, and finished goods that will ultimately be sold.

$$\text{Inventory Turnover ratio} = \frac{\text{Inventory}}{\text{Total Sales}} \times 100$$

Accounts Receivable Turnover Ratio

The receivables turnover ratio is an accounting measure used to quantify a company's effectiveness in collecting its accounts receivable, or the money owed by customers or clients.

$$\text{Accounts Receivable Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}} \times 100$$

Analysis and Interpretation

Table 1 Cash Ratio (Rupees in lakhs)

S.No	Year	Cash and Bank Balances Rs.	Current Liability Rs.	Ratio (In percentage)
1	2009-10	1099.09	24583.32	4.47
2	2010-11	1019.21	23460.02	4.34
3	2011-12	1060.39	24055.24	4.41
4	2012-13	1060.08	30476.25	3.48
5	2013-14	1555.52	39083.26	3.98
6	2014-15	1632.09	42363.68	3.85
7	2015-16	1867.65	41776.84	4.47
8	2016-17	2063.86	47797.84	4.32
9	2017-18	3426.60	60897.85	5.63
10	2018-19	3901.45	73994.35	5.27
Average		--	--	**4.42**

Source: Annual reports of TNCCWS from 2009-10 to 2018-19.

Table 1 explains the cash of the consumer cooperative society. The cash ratio on average was 4.42 per cent was healthy. There is no ideal figure, but a ratio of at least 0.5 to 1 is usually preferred. It is helpful to note the factors that determine critical cash ratio and tries to maintain. The cash ratio can be measuring a company's ability to pay off short-term liabilities with highly liquid assets.

Table 2 Liquid Assets Ratio (Rupees in lakhs)

S.No	Year	Liquid AssetsRs.	Total AssetsRs.	Ratio (In percentage)
1	2009-10	1099.09	46554.07	2.36
2	2010-11	1019.21	52039.38	1.96
3	2011-12	1060.39	50037.58	2.12
4	2012-13	1060.08	61683.77	1.72
5	2013-14	1555.52	71499.68	2.18
6	2014-15	1632.09	81339.05	2.01
7	2015-16	1867.65	104677.32	1.78
8	2016-17	2063.86	112514.02	1.83
9	2017-18	3426.60	136754.86	2.51
10	2018-19	3901.45	145888.23	2.67
Average		--	--	**2.11**

Source: Annual reports of TNCCWS from 2009-10 to 2018-19

Table 2 explains the liquidity of the consumer cooperative society. During the years, 2009-10 (2.36), 2011-12 (2.12), 2013-14 (2.18), 2014-15 (2.01), 2017-18 (2.51) and 2018-19 (2.67) are high level liquidity ratio indicated by cooperative society in Tamilnadu although, 2010-11 (1.96) and 2011-12 (1.72) are moderate level of ratio indicated by cooperative society in Tamilnadu. Hence, the satisfied liquidity ratio level is 1:1. Hence, the consumer cooperative societies have maintaining optimum ratio.

Table 3 Inventory Turnover Ratio (Rupees in lakhs)

S.No	Year	Inventory Rs.	Total Sales Rs.	Ratio (In percentage)
1	2009-10	835.15	5700.90	14.65
2	2010-11	754.68	7376.33	10.23
3	2011-12	723.08	7707.79	9.38
4	2012-13	687.49	8517.56	8.07
5	2013-14	834.19	9880.67	8.44
6	2014-15	1102.99	9500.20	11.61
7	2015-16	930.60	10145.61	9.17
8	2016-17	901.43	11738.56	7.68
9	2017-18	847.30	13747.74	6.16
10	2018-19	1415.43	16096.05	8.79
Average		--	--	**9.42**

Source: Annual reports of TNCCWS from 2009-10 to 2018-19

Table 3 explains the Inventory of the consumer cooperative society. During the years, 2009-10 (14.65), 2011-12 (10.23), 2013-14 (8.44), 2014-15 (11.61), 2017-18 (6.16) and 2018-19 (8.79) are high level Inventory ratio indicated by cooperative society in Tamilnadu Hence, the satisfied Inventory ratio level is 5 to 10. Hence, the consumer cooperative societies have maintaining optimum ratio.

Table 4 Accounts Receivable Turnover Ratio (Rupees in lakhs)

S.No	Year	Net Credit SalesRs.	Average Accounts ReceivableRs.	Ratio (In percentage)
1	2009-10	3974.93	6357.32	62.53
2	2010-11	3931.03	6115.13	64.28
3	2011-12	3786.02	5808.61	65.18
4	2012-13	3565.08	4358.01	81.81
5	2013-14	6197.24	6340.11	97.75
6	2014-15	7046.34	7900.48	89.19
7	2015-16	7942.23	8112.16	97.91
8	2016-17	9623.92	9831.09	97.89
9	2017-18	11529.69	11640.72	99.05
10	2018-19	13672.21	14062.87	97.22
Average		--	--	**85.28**

Source: Annual reports of TNCCWS from 2009-10 to 2018-19

The consumer cooperative wholesale stores in Tamilnadu Accounts Receivable ratio have increased from 62.53 per cent in 2009-10 to 99.05 per cent in 2018-19. A company's receivables turnover ratio should be monitored and tracked to determine if a trend or pattern is developing over time.

Conclusion

Cash management provides an easy cash to pay its current liabilities. It is more pure liquid than quick and current ratio and the capability of strong and need not to borrow from others. The companies' receivables can track and correlate the collection of receivables to earnings to measure the impact the company's credit practices have on profitability.

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CROWDFUNDING AND ENTREPRENEURSHIP DEVELOPMENT FOR INCLUSIVE GROWTH

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ABSTRACT

Innovation is pre-requisite for survival, growth and a weapon to escape discontinuity. Innovation follows creativity which is not limited to few, whereas it flows from everywhere. Most of the creativity dies its own death for scarcity of funds. Crowdfunding is a novel way of funding such innovative and creative projects by enabling crowd to be part of the innovation they like and democratizing the access of funds to the project creators. The small scale and novice entrepreneurs with a creative business idea but no past business records can give wings to her dreams by opting crowdfunding. The paper attempts to aware the fund- seeker as to how this phenomenon can raise funds through crowdfunding platforms as an intermediary. The crowdfunding platforms' perception towards crowdfunding is also analyzed to check on its viability and preparedness of people to accept this disruptive mechanism of funding. The article also studies various successful crowdfunding campaigns based on different criteria of projects on select crowdfunding platforms. Crowdfunding is seen as complementing the efforts of entrepreneurial promotion and inclusive growth particularly in developing and emerging economies.

Executive Summary

***Objective**: The research focuses on apprising the fund seekers who have been struggling to have access to funds to kickstart their ideas. Crowdfunding has come as a rescue to help such campaign take off the ground and realize its dream. The research aims to study the various crowdfunding platforms running in India and the business model they run on. The study aims at analyzing the various types of crowdfunded projects and their success rate. The questionnaire was sent to 20 crowdfunding platforms and researcher could get response from seven platforms (58.33% response rate). These platforms were surveyed to assess the present scenario of the crowdfunding and the preparedness of people in accepting crowdfunding as a means of raising funds. The successful crowdfunded projects of three different platforms were analyzed to critically evaluate the success determinants through various parameters viz. nature of the project, funds required, funding target period, number of friends, and business model of the platform. The successful projects were picked up from the period starting from June 2018 to 20th June 2019. The first part of the study required collecting data from secondary sources to know about crowdfunding and crowdfunding platforms' business models. The second part of the study required primary data collection from the identified crowdfunding platforms. The questionnaire initially had basic nominal scale variables and later the perception of these platforms was measured through a Likert 5 point rating scale. The researcher also communicated with the platforms with the aim to conduct an informal interview about status of crowdfunding. Since the number of sample is small, the simple statistics like mean and mode was used with judgement of the researcher based on qualitative information gathered from these platforms. The third part of the study called for secondary sources of data collection to assess the successful crowdfunding campaigns run on different crowdfunding platforms with context to fund raised and the number of backers. The research concludes that not many people are aware of crowdfunding in its fullest. Reward based crowdfunding models are popular after donation based crowdfunding. Since there are no laws drafted exclusively for crowdfunding, people are skeptical and not very confident of crowdfunding investments due to absence of respite and redressal mechanism. It is advised to have an active social media profile and good number of contacts to enhance the chances of success of the campaign.*

***Keywords:** Crowdfunding, Crowdfunding Platforms, Innovation, AON/KWYG, Inclusive Growth*

Introduction

The novice business entrepreneurs with fresh ideas struggle to raise initial funds for the business **(Hormiga, E., et al. 2011).** Even though a novice entrepreneur has a concrete and viable idea, his project for fund requirement may be rejected by the banks in view of risk and other uncertainties and also lack of sufficient papers backing the project. The two key reasons most of the entrepreneurs fail to raise funds from the traditional sources have been identified as: first the entrepreneurs cannot scale fast enough nor have the capability for a large exit and second the

people who need money is too large in comparison to venture capitalists who can provide money **(Tomczak, A., & Brem, A. 2013).**

Certain segments of the society were ignored and deprived of some of the privileges like easy access to funds and other kind of support which were normally available to others with ease. The above stumbling blocks had to be addressed to let projects creators realize their dreams. It's the beginning of the 21st century which witnessed the disruption in the field of finance. There was so much focus on financial inclusion and inclusive growth which brought the stride of crowdfunding along. Crowdfunding is an arrangement where the fund seeker known as campaign owner presents the idea in the most convincing manner on the crowdfunding platform wherein many like-minded people navigate through the portal and subscribe to the project idea which appeals him by contributing the funds **(Agrawal, A., et al. 2013; Belleflamme, P., et al. 2013; Mollick, E. 2014; Ordanini, A., et al. 2011).** The campaigns are posted on crowdfunding platforms who act as an intermediary between the fund raiser and the investor. Each crowdfunding platform has its own business model which necessitates the fund seeker to go through the platforms' model to decide on which platform he/she should be opting for a successful raise of funds **(Hemer, J. 2011).**

Many critics also considered crowdfunding as fad and at the same time there were viewpoints that crowdfunding would go a long way and bring about revolution in the field of finance **(Assenova, V., et. al. 2016)**. Crowdfunding has come as an evolutionary response to the era of fast moving web technologies. It has taken over the drawbacks of conventional means of funding the project. The financial crisis of 2008 led the emergence of crowdfunding in US and UK to promote the small scale businesses and start-ups **(Beck, T. 2017).** There have been different campaigns in varied fields like technology, social, medical, art, music, films & entrepreneurial projects **(Meyskens, M., & Bird, L. 2015).** What makes crowdfunding different from traditional sources of funding is its unique mechanism which entertains different projects with same enthusiasm and with the same protocols.

Crowdfunding can effectively contribute towards financial inclusion by democratizing the access of funds to anyone who were excluded and considered as undeserved against a convincing idea. Crowdfunding has come as an alternative source of funding and may be expected to come as a boon to micro, small and medium enterprises, start up entrepreneurs and individuals with no past records of business success or credit history **(Jenik, I., Lyman, T., & Nava, A. 2017).**

Research Question

1. To study the crowdfunding platforms operating in India and their respective business model
2. To assess the perception of the crowdfunding platforms regarding preparedness/willingness of Indian investors to consider crowdfunding as an alternative source of funding or investment
3. To analyze the successful projects with respect to different categories of select crowdfunding platforms

Research Method

To achieve first objective four crowdfunding platforms were selected; Wishberry, FairCent, Ketto and Impact Guru. Each crowdfunding platform is different from the other one to help include all the present models in the country to enable investors and fundraisers to have an easy and quick understanding of the concept. The source of the data has been secondary.

The sample size to meet second objective 2 was seven. Since the population for the understudy is not too big, the sample size is small. Their perception regarding various factors which would determine the current status of crowdfunding in India was taken on a 5 rating Likert scale through primary data. The sample size and the response rate have been presented in the exhibit1.

To assess the success rate of the crowdfunding platforms with respect to different categories of project, secondary data was collected from various articles, journals, internet, and from the respective crowdfunding platforms. A careful observation and analysis was made in the light of information available. A simple statistical analysis was done to analyze the success rate

and the lending patterns of the contributors with respect to different categories of project.

Data Analysis of Objective 1

To study the crowdfunding platforms operating in India and their respective business model

Crowdfunding Platforms in India

Crowdfunding is not a well-known concept in the country. The awareness is spreading at a low pace and whatever the little, people have known about the concept is all raising funds for medical cause in the form of donations. There are four basic models of crowdfunding; donation based, reward based, loan based and equity based. Out of these, the last one is not yet prevalent in the country due to some legal implications and also because of absence of any law with regard to crowdfunding.

The *donation based models* are predominantly used for medical cause, education purpose or for some community benefits. The contributors get nothing in return except for tax deduction. The person who needs money has to have a genuine cause which could emotionally appeal the people to donate **(Beaulieu, T., Sarker, S., & Sarker, S. 2015).** Under *reward based models*, the fund raiser raises money for some creative projects or products and the contributor gets something in return which is not monetary in nature. The fund seeker has to make sure that he has the most convincing and saleable idea which people would subscribe to **(Bi, S., Liu, Z., & Usman, K. 2017).**

The third model as mentioned earlier is the *loan/debt based* where the fund raiser raises money from people and pays then back along with interest. The model is just like a traditional borrowing system where people borrow and repay it periodically with interest. It offers good interest rate to lender which is way higher than what bank offers and for borrowers it lends at somewhat cheaper rates. Technically, this has come to be known as peer-to-peer lending **(Morse, A. 2015).**

The *equity based* model needs the fund seeker to give a certain amount of stake to the investor in the company based on the contribution he has made. In developed countries, there are laws relating to equity crowdfunding thereby making it more popular and investor friendly. India is yet to bring this model into its aegis of crowdfunding. This would democratize the whole funding system, the privilege of which is currently enjoyed by high net worth individuals or institutional investors **(Catalini, C., Fazio, C., & Murray, F. 2016).**

Apart from knowing these four basic models of crowdfunding, there are other things which are crowdfunding platform specific. The crowdfunding platform has its own business model which would impact the decision of the fund raiser in choosing the platform for his campaign. Some platforms have Aon model (All or Nothing) while others have KWYG (Keep What You Get). AON lets the fund raiser keep money raised only if the campaign hits the fund target within stipulated time period which is usually 60 days, failing which the money is returned back to the contributors. KWYG lets the fund raiser to keep the entire money whatever has been raised during the campaign **(Cumming, D. J., Leboeuf, G., & Schwienbacher, A. 2015).**

Secondly, the crowdfunding platform may not run all the three models of crowdfunding. Some of them may have just donation and while others may have reward or both and some may have P2P lending. The campaigner has to see as to which platform is most congenial for his campaign and give the maximum visibility to his campaign. Thirdly, the charges and other fees involving the campaign are different across crowdfunding platforms. The economics of crowdfunding has to be worked out to see if the benefits accruing would justify the cost incurred to run the campaign through crowdfunding.

Fourthly, some crowdfunding platforms do not accept contributions in foreign currency, which would limit the campaign to its own national boundary. The campaign if substantial enough should be taken across national boundary to let people know about it and be part of it. The wider the reach, the bigger and brighter the chance is for projects' success. Lastly, the crowdfunding platform does not just act as an intermediary between the fund seeker and the investor, but also provide various other add-on services which could be saviors for the campaign. If the campaigner is novice and has no prior experience of raising funds through crowdfunding, he or she may end up seeing the failure.

About Wishberry

This platform runs on reward based model, where people raise money for their creative projects and give some non-monetary return like exclusive copy of their music albums or any special creations to the contributors. The contribution could be as small as Rs. 500 and can go up till Rs. 10000. The project creator first submits the project and once the project is approved by the platform, he is further contacted by the team to help him prepare for the crowdfunding campaign. The campaign once ready goes live for 60 days. If the project hits the goal amount, it becomes successful else the money is returned back to the contributors, which in other words called as *All or Nothing*. This could be disheartening for projects who fail by hardly any amount. But, despite the fact it has been well accepted in the research studies that AON is best suited for crowdfunding since it enhances the trust level of the backers/contributors because they know for sure that if project does not appeal the crowd for social validation, their money would be returned back. The fees vary according to the amount one raises from the campaign **(Cumming, D. J., Leboeuf, G., & Schwienbacher, A. 2015).**The fees and other charges details is presented in the exhibit 2.

Wishberry has so far raised 13 crores for 500 projects with 22000 backers supporting the projects. It suggests initiating the funding from nearby people like family and friends and then reaching other people through building network. The project catches fire if it is awesome and able to appeal the emotions of the people or strike the like-minded people.

About Faircent

It is the country's first peer-to-peer lending crowdfunding platform. The founder & CEO of Faircent is Mr. Rajat Gandhi. It is registered with Reserve Bank of India as an NBFC-P2P. P2P lending is just like conventional lending system where the borrower borrows money from the lender and returns the money with interest. The borrowers' credit profile is checked and the interest rates vary in the range of 12%-28% as per his/her credit history and the duration varies between 6 to 36 months. All the information about the borrower and the lender is duly verified by the portal. Lender can diversify and lend to multiple borrowers but cannot lend more than 20% to a single borrower, thereby decreasing the risk. The lender could be an individual (an Indian citizen of more than 18 years of age having a valid identity proof) and also an institutional lender registered under RBI finance companies. The NPA amounted to just 4% in the financial year 2018. The loan performance for females was better than males by 3%. Out of the total loan disbursal, 40% amounted to business funding, 19% to debt consolidation, 16% for home improvement, 14% for family event, 9% for wedding and 2% for vehicle purchase. Most of the borrowers fall in the age bracket of 30-34 and 75% of the borrowers are married with 84% of them being males. 65% of the borrowers are salaried and the rest of them are self-employed. The listing fee for borrower and lender & other charges for pre-closure of loan is discussed in the exhibit 3.

About Ketto

It is a crowdfunding platform which has a donation based model, the team comprises of Mr. Varun Sheth as the CEO & the founder & Mr. Kunal Kapoor as the co- founder. The fund seeker seeks for donations for causes like medical, education or other social causes. The campaign starts with a fund target and it is kept open for donations for some stipulated period with some flexibility. Whatever money is contributed gets transferred to the needy's account, thereby calling it as *keep what you get* funding model. This comes as a big respite to those who feel that they would not be able to hit the funding goal. But it narrows the scope of campaigns restricting it to only donations and is not suitable for creative ideas. It accepts donation in multiple currencies and hence widens the chances of getting donations from all across.

The platform so far has raised 300 crores and has 25 lacs donors from various parts of the world and has benefitted 1.5 lacs fund raisers. The fees and other charges are as presented in the exhibit 4.

Impact Guru

It is a donation & reward based platform providing solution to individual needs, NGOs and social entrepreneurs who raise money for community benefits, personal needs or any creative projects. It receives donations from all across the globe and provides tax benefits.

Piyush Jain is the Co-Founder & CEO of the group. The details of fee and other charges has been presented in the exhibit 5. The international remittance invites other charges and a fee of 15% is charged extra for giving tax benefits to the US and UK donors. It has raised 400 crores so far and has 2 lacs donors with 150 countries contributing to the cause. It has a KPWG model which let the fund raisers to keep whatever amount has been raised during the campaign.

Data Analysis of Objective 2

The data was collected from seven of the renowned crowdfunding platforms in India. The platforms were BitGiving, Wishberry, Rang De, Faircent, FuelADream, Ketto, and Impact Guru. Except for one crowdfunding platform (Rang De) none of the platforms were older than six years which manifests that crowdfunding is still in its nascent stage and could take pretty good time to catch up with the momentum.

The peer-to-peer crowdfunding did not seem to be very popular since only one such platform could was identified in the sample. Most of them who were surveyed had reward and donation based crowdfunding models. The reward and donation based models are the ones which find its acceptance easily because of their simplicity. A brief analysis of the crowdfunding platforms as to when they were established, what crowdfunding model they run and their fundraising criteria is presented in the exhibit 6.

The survey led to following interpretations:

a. All the crowdfunding platforms see crowdfunding as one of the prominent options of fundraising and are also of same opinion that proper laws and regulations should be framed to regulate crowdfunding in India. Since the laws are silent towards most of the aspects of crowdfunding, people are skeptical and are not yet very comfortable with crowdfunding investments. The absence of grievance redressal worsens the problem even more.
b. Almost 80% of the crowdfunding platforms opined that the success rate is highly influenced by the number of friends one has on social media platforms or otherwise. Since crowdfunding is all about sharing and inviting people to donate or support for the cause, the reach matters a lot.
c. The survey conducted in the research also revealed that 66% of the people are not even aware of what crowdfunding is. The same thing was confirmed by the crowdfunding platforms when they said that they don't see people ready for accepting the concept of crowdfunding as of now. And this may need some good amount of time for Indian crowd to accept crowdfunding and understand its full potential.
d. The P2P lending is also seemed to be running on number of people one knows and how they connect to each other on trust aspect. The FFF seems to be the best thing working in P2P lending. The FFF stands for family, friends and fools.
e. The crowdfunding investors don't behave the same way as a normal investor does. The motivation factors behind crowdfunding investments are not the same as under traditional form of investments. People think differently for crowdfunding projects and have a different perspective for other normal financial products.
f. Almost all the crowdfunding platforms are of the opinion that equity based crowdfunding should be legalized to bring the financial innovation in the market. This would democratize the way funding is done and the crowd would also get an opportunity to be part of innovative projects by contributing a small amount of money. Crowdfunding allows inclusive growth by letting all people who are interested in making investments to be part of it
g. There's a mixed opinion on whether the crowdfunding projects are the ones whose loan request have been let down by the banks or other funding agencies. The number is more towards disagreement, hence was considered that crowdfunding projects are not the ones who could not raise money from outside but because they are altogether a different type of projects which are not generally considered by the professional investors.
h. 85% of the crowdfunding platforms believe that it's important to have technical

knowledge and an active social media profile to run the crowdfunding campaign successfully. The tech savvy and a good number of followers are one of successful ingredient of crowdfunding campaigns. It makes one spread the word about the project just like the viral marketing.

i. Number of friends and active social media profile seem to be an important success determinant in view of crowdfunding platforms. This creates a snowball effect which spread the word about the campaign.

Data Analysis of Objective 3

Three different crowdfunding platforms were studied in terms of various categories of projects they run, amount of funds raised and the number of supporters who backed the projects. This was an attempt to assess the status of crowdfunding platforms with view to projects they run. One of the crowdfunding platform was reward based and had AON Model, the second crowdfunding platform was donation based and had KWYG model whereas the third crowdfunding was both reward and donation based with KWYG model. .All the successful projects between the periods of 1st June 2018 to 20th June 2019 were picked from these three platforms. The data has been presented in the diagram as under.

Interpretation

Exhibit 7 depicts the data of reward based crowdfunding platform, AON model. There are total seven different categories of projects ranging from the most popular category (films) to the less known ones like environment and dance category projects. During the period of survey i.e. from 1st June 2018 to 20th June 2019 there were total 39 successful projects as shown on the portals' website. Out of 39, there were 18 projects of films, 8 projects of films, 7 projects of sports and others projects. On an average, the amount raised was the highest in environmental related project followed by projects under film category. Rest all other projects seem to have raised more than 2.5 lacs on an average. The maximum number of supporters is in games category followed by film category.

Exhibit 8 represents the data of donation based, KWYG model crowdfunding platform. Out of total 28 successful projects, the maximum number of hits falls in the medical category projects with the maximum number of backers as well as the maximum amount of raised.

Exhibit 9 shows the data relating to reward/donation based crowdfunding platform which has KWYG. The maximum number of projects falls into social category (56%) followed by medical category projects (19.5%). On an average it is social related projects which have raised the maximum amount with roughly 438 followers for each project. The music related projects on an average raises 20.68 lacs with 234 backers. The film category project has raised the minimum amount in comparison to other projects.

Conclusion

Each platform has its unique business model with different packages of services to the fud raisers which is user friendly even for the novice fund seeker and with different fees structure. It's important to know the crowdfunding platform and its background before initiating the campaign on its portal as it has a significant influence on the campaign and its success. The crowdfunding platforms are positive about crowdfunding and its impact on people to meet their fund needs and give wings to their dreams. But they also feel that the awareness should be spread among people to make them consider crowdfunding as one of viable options of fund raising. The rules and regulation regarding crowdfunding if built would help having a more congenial environment for investor to consider such investments fearlessly. Crowdfunding platform is known for its business models which impacts the success of the campaign partially. Projects falling into films and music must go with suitable reward to impress the audience and projects which are connected to social aspect seem to raise the maximum funds through donation based crowdfunding. Projects related to medical or personal illness also seem to be equally popular under donation based crowdfunding. The campaigner must assess her needs and the type of campaign she wishes to run and then take a call on which type of crowdfunding platform she would be opting for. Crowdfunding has undoubtedly evolved as inclusive finance and has all the potential to prove itself as a boon to an emerging economy

like India. It has witnessed an unprecedented success stories which basically started as non-profit and gradually moving towards equity crowdfunding with lot to unfold yet.

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UNCOVERING THE IMPACT OF SUPPLY CHAIN PERFORMANCE ON HORTICULTURAL APPLE PRODUCTS IN JAMMU AND KASHMIR

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ABSTRACT

Supply Chain Management refers to a network of facilities that generate raw materials, convert them into intermediate items, and then distribute finished products to consumers through a distribution system. The supply chain is managed differently, as are the many players' responsibilities, from one industry to the next and from one business to the next. As a consequence, Supply Chain Management (SCM) has become more critical. J&k is India's biggest apple grower, accounting for about 75% of total production. J & K generated 16.72 lakh tones in 2016-17, whereas Himachal Pradesh contributed 4.92 lakh tonnes. The central apple-producing regions in the Kashmir valley are Baramulla, Kupwara, Shopian, and Kulgam. At present, the apple distribution network is inefficient, with multiple intermediary levels and challenges with packaging material supplies. In J&K, the problem may have worsened because the classifying and grading system is unsophisticated compared to the rest of the country.

Keywords: *Supply Chain management, distribution network*

Introduction

J&K is the largest producer of horticultural crops in India. It offers a wide variety of crops such as apples, pears, peach, almonds, and tropical fruits. Horticulture's growing importance has been evidenced by its contribution to the Gross Domestic Product and its agricultural sector share. The apple-producing region of Jammu and Kashmir is known to produce over 1.3 million tons of apples annually. The entire production is done in various districts of the valley. Its agricultural share is approximately 19.35 per cent of the state's gross domestic product. Horticulture has emerged as a significant component of agriculture. It offers a wide variety of crops to the farmers.In terms of area under cultivation, India has gained 100% coverage and a 121% increase in the production of apples. This is mainly due to the massive area under cultivation in the country. Among the fruits grown in India, apples have the third largest area under production. They are relatively hard to transport and have a low shelf life. Supply chain management is a system model that talks about the various stages of a supply chain. It involves the multiple players involved in the value chain, such as manufacturers, service providers, and consumers**. (Peter Singe, 2010).** This study analyzed the impact of the various supply chain risks on the goals of the different actors involved in the supply chain. The importance of the risk measurement system in optimizing the supply chain was also highlighted. It also focuses on the factors that will determine the competitive position of these products in the market. In addition, the impact of each actor's objectives and the overall supply chain objective on risk was assessed. For supply chain network optimization, a risk measurement system is a must-have approach. Consequently, a supply chain risk identification risk in horticultural products that is optimal for each of the supply chain's participants is required. The trouble will be assessed regarding planning, supplying, processing, product delivery, and returns.Kashmir region is inhabited by wonderful varieties **(Ghosh, 2001).** Intensive agriculture in apple orchards results in the development of different diseases among the plants. Because all plants in a monoculture are genetically identical, diseases to which they are immune may wipe out whole populations of plants. Adding variety in planting various kinds of trees in the same area has been proven to help fight illnesses in studies (**Zhu & Youyong, 2000).** Orchards are often planted with a range of cultivars to improve disease resistance. The extremely disease-resistant apple cultivar, Maharaji apple, has been discovered to be hardly noticeable in orchards. Apple trees with fewer varieties are more susceptible to illnesses and rodent infestations. Farmers are unaware of the issue, and they have little understanding of orchard diversity or the significance of pollination. Due to ripe

apples' perishable nature, farmers were put in danger due to a lack of apple boxes during peak harvest season. Delayed harvesting causes over-matured fruit. When apples are harvested later in their maturation cycle, they have a shorter shelf life and don't travel well **(Murray et al., 1998)**. In the Kashmir valley, traditional, informal, and unregulated methods of sorting and grading are still in use. Ample light dispersion affects apple production and fruit quality parameters, including size and colour **(Wagenmakers & Callesen, 1995).** In China, solar reflectors are used. Covering apple orchards with hail netting in Australia has become common practice to keep fruit safe during hail storms **(Proctor & Lougheed, 1976).** Japan has been protecting apple fruit in protective bags throughout the development process for many decades (Ibid). There is no such technology available for Kashmiri farmers. Small-scale apple growers must also contend with improper labeling and unregistered trademarks. Agricultural producers have a significant shortage of low-cost cold storage on their fields, as well as refrigerated storage at markets and ports. In Kashmir, there are just a few cold storage facilities, and they are too costly for a small farmer. Different cold storage temperatures have a significant effect on the diameter, weight, volume, hardness, sodium and potassium content, quality, and colour of the fruit's surface, among other characteristics **(Khorshidi et al, 2010).** Furthermore, apple fruit that has been stored for an extended period of time may develop enzymatic browning, which is accompanied with unappealing colours and flavours, as well as nutrient loss **(Goupy et al, 1995).** There is no quality control mechanism in place in the valley to guarantee the quality of apples that are transported outside of the region. According to merchants and distributors, the four most serious quality problems with apples are immaturity, over-ripeness, improper grading, marks, and blemishes. Immaturity is defined as the state of being too ripe or too ripe. In Kashmir, fruit growers who carry their produce to the wholesale market in unrefrigerated trucks have the option of selling at the present market price or storing their produce in the hope of a higher price in the future. Furthermore, truck transportation is costly due to the lack of a rail link between Kashmir and Jammu in this region. Many wholesale fruit markets (mandies) across the country engage in unethical practices, which are highly criticized. The majority of marketing in the valley is controlled in this way **(Javid, 2004).** Because of the predominance of middlemen in the current apple fruit supply chain, especially commission brokers, farmer income has suffered as a result. Farmers are unable to control the whole apple fruit distribution chain, and the government has taken no measures to regulate it. Growers and contractors are subject to price risk since there is no guarantee that minimum supporting prices will be met and that the market price of the crop will continue to rise in the future. A pattern of collusion between intermediaries and apple merchants has been seen across the valley in order to control prices, leading to widespread exploitation of marginal farmers. Aside from that, manufacturers are exposed to a range of scams as a result of the lack of a regulated market, such as the deduction of excessive charges, the quoting of a lower price than the actual price, and the charging of exorbitant fees by intermediaries. Therefore, the farmers are unable to create an economically feasible marketing strategy. Because of the current economic climate and globalization, supply chains are becoming more complicated **(Varma et al., 2006)**, making their design, organization, and interaction difficult **(Gold et al., 2010a, b).** Increasing environmental and social issues necessitate a shift in emphasis from the company to the SC level, as well as a link between organizational objectives and sustainability goals **(Gold et al., 2010a, b)**. To ensure sustainability, the SC's stakeholders must collaborate. Until explicit regulations are implemented, organizations will be hesitant to adhere to sustainable norms. The success of sustainable projects is measured differently by each company **(Searcy et al., 2009).** Apples are grown in Jammu and Kashmir, Himachal Pradesh, Uttarakhand, and Arunachal Pradesh, among the most popular temperate fruits. Jammu & Kashmir generated more than 80% of the country's total apple production in the 2011-12 fiscal years **(National Horticulture**

Board, 2012). The state is known for its apple, plum, cherry, pear, walnut, almond, saffron, and other horticulture products. Apple, on the other hand, controls the lion's share of the state's land and production. Apple is mainly a commercial product, and almost every manufacturer makes it for sale. Farmers' margins and net income would be reduced due to an inefficiency in the marketing channel, reducing their quality of life and diminishing their willingness to grow the fruit.

In recent years, India's fruit and vegetable marketing efficacy has been a subject of significant worry. Poor marketing channel efficiency and infrastructure are blamed for not just high and fluctuating consumer prices but also that only a tiny portion of the consumer rupee reaches farmers **(Gandhi & Namboodiri 2002, Kaul, 1997, Ashturker & Deole, 1985).** Marketing costs contribute to around 20% of the selling price of vegetables, according to Birth et al., 2005. Reduced intermediate costs and waste due to effective marketing allow for a lower consumer price and a larger market share while maintaining production efficiency. Markets must be improved for two reasons: first, they may act as an incentive to increase production; second, if the market fails to supply consumers with goods at reasonable, compatible, and affordable prices and following the time and place required, increased production appears to have no meaning in the welfare of society **(Gunwant et al., 2012).** J&K generated 67 per cent of the country's total apple production in 2010 and exported 50% of the country's total apple exports. Every year, India exports 400 million rupees worth of apples, with 200 million rupees worth of apples originating from the Kashmir Valley in J&K's northern region **(Reshi et al., 2010).** In 1865, the British introduced apples to the country in the Kullu Valley of Himachal Pradesh, and in 1917, they introduced colourful "delicious" kinds of apples to the Shimla highlands of the same state. The apple cultivar 'Ambri' is indigenous to Kashmir and was grown there long before Western imports **(Bhardwaj et al., 2012).** Apples are said to have been cultivated in the state since the dawn of time. Apple manufacturing is said to have received a boost and encouragement under Lalitaditya's reign. After the introduction of many European varieties, commercial apple production in the state started in the second half of the nineteenth century and the beginning of the twentieth century **(Masoodi, 2003)**

Objectives

1. To study the significant constraints that come in supply chain management of apples in J&K
2. To find out the rankings of significant constraints that occur in supply chain management of apples in J&K
3. To examine the supply chain model of apples in J&K
4. To recommend the solution for efficient and effective implementation of supply management of apple UT of J&K

Research Methodology

This research was conducted in the Sopore District of Jammu and Kashmir. This research aimed to identify existing problems in the horticultural product supply chain, which led to the formulation of a problem and research objectives. Expert respondents were included in the study because they are directly connected to horticultural products supply chain management and are horticulture producers from the Sopore regions. This research utilized primary and secondary data, both qualitative and quantitative, in this way. Data acquired directly via observation, interviews, and expert opinion is referred to as preliminary data. The literature, the Internet, journals, and other supporting materials were used to gather secondary data. A questionnaire was utilized in this research, including two phases for each of the performers. The questionnaire was used in the initial step of identifying and mapping risk in the supply chain. The second part of the questionnaire evaluated and quantified risk in a horticulture business entity in terms of supply.

The present investigation will be carried out in 2021. The sampling structure and techniques adopted in the inquiry has been described as follows: -

- **Locale of the study:** J&K was selected for the study as this is to the primary and central area of apple production in northern India

- **Sample size:** The research was conducted with the help of a schedule/questionnaire based on the information collected from various apple traders in J&K
- **Data collection:** The present study will adopt both primary data as well as secondary data collection techniques
- **Methods of analyzing data:** Descriptive Statistics, pie chart, bar graph and other statistical tools will be adopted for analyzing purposes along with the Hennery Garrett ranking technique
- **Henry garret rating technique:** In this technique, the percentage position of each rank obtained is converted into scores by referring table given by Henry Garret. Then for each factor, the scores of individual respondents are added together and divided by the total number of respondents from whom the scores are added.

Formulae = 100 (Rij-0.5/n);
Rij is the rank, N number of items

Results and Discussion

- The result of the present study Uncovering the impact of supply chain performance on horticultural apple products in Jammu and Kashmir title has been presented in the following tabular form.

Demographics

Table 1. A business description of traders (apples)

A business description of traders	Retailer	Wholesaler	C&F Agents
No. of respondents	6	17	1
Percentage	24	68	8

The study's title uncovered the impact of supply chain performance on horticultural apple products in Jammu and Kashmir of traders were wholesalers while 24 per cent were retailers and the remaining 8 per cent were carrying and forwarding agents.

Table 2. Season income of traders (from apple business)

Monthly income	Below 1 lac	1lac-2 lac	2lac -3lac	3lac -4lac	>4 lacs
Number	1	2	5	12	4
Percentage	39	14	7	51	19

Table 2 revealed that out of 24 respondents, 12 traders lie in the season income slab of 3lac-4lac, 4 traders in the slab of >4 lac. 5 traders lie in the income slab of 2-3 lac, 2 traders lie in the slab of 1-2 lac, 1 trader in the slab of < 1 lac/ season

Table 3. Experience of respondents

Experience	< 1year	1-5 year	5-10 years	10-15 years	15-20 years	>20 years
No of respondents	0	2	2	1	4	16
%	0	8	8	4	16	64

As quite evident in the table above (table no.3), it signifies the experience of the traders (respondents) in the sphere of apple production, which clearly shows that maximum respondents have more than 20 years of experience, with 64% of the total respondents.

Table 4: Primary constraints in supply chain management of apples in J&K (in percentage)

S. No	**Constraints**	**1**	**2**	**3**	**4**	**5**
1	**Transport facility**	0	13	19	15	53
2	**Storing facility**	15	19	19	9	37
3	**Government facility**	0	7	25	31	37
4	**Package constraints**	0	21	19	29	31
5	**Marketing issues**	7	0	31	19	41
6	**Dearth of information**	0	0	0	41	59

--Scale --

1. Fairly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

In table no.4: - since transportation is very significant in the supply chain, without proper transportation, goods cannot be delivered to customers at the right time and in good quality. As far as transportation facilities are concerned in the present study, 53 per cent of the respondents believe that transportation is the primary constraint in the supply chain of apples in the Union Territory of J&K.

- As far as a storage facility is concerned, the sample respondents in the present study revealed the must-have adequately planned and well-maintained storage facility in the concerns of apple supply chain management. As shown in the above table number, no 4, 37 per cent of the respondents still believe that they do not have adequate storage facilities for keeping the produce, especially in care apples.
- Taking the constraints, dearth of Government facilities into consideration, the sample respondents believe that there is a lack of facilities of initiatives taken by the government for the improvement of supply chain management of apples in UT of J&K, 37 per cent of the respondents think that there is lack of facilities provided by the government in this genre.
- Package constraints are another variable identified and acknowledged in the present study. As apples is a perishable item and require packing for handling to keep them fresh, 31 per cent of respondents in table no 4 signified that there is a problem with apple packaging in the UT of J&K. costly packing makes the concern complicated an additional burden on price levels.
- Issues in marketing, lack of information regarding the existing market, price, demand etc., are the significant issues in the efficient supply chain management of apples. 41 per cent of the respondents strongly agreed that there are several issues in the marketing concerns of the apple industry in UT of J&K.
- The dearth of information flow is another factor that hinders the smooth functioning of the supply chain management of apples. 59 per cent of the sample respondents strongly agree with the statement that there is a dearth of information flow in the supply chain industry in UT of J&K.

Table no: - 5
Table showing Garret ranking of main constraints in the supply chain of apples in J&K

S. No	Factors	Total	Average	Ranking
1	Transport Facility	1155/24	46.51	5th
2	Storing Facility	1390/24	55.66	Ist
3	Government Facility	1171/24	47.10	4th
4	Package Constraints	1225/24	49.01	3rd
5	Marketing Issues	1330/24	53.22	2nd
6	Dearth of information	1058/24	42.01	6th

Since in the above table, Garrett rank have been calculated and assigned to the factors that hinder the supply chain management of apples in UT of J&K. since by using Garrett formula, Garrett ranks were obtained. According to table no 5. The 6th rank is attained by the factor. 'Dearth of Information flow' with 42.01% average score, similarly 5th rank goes to transport facility (46.51% average score), 4th rank goes to Government facility (47.01% average score), 3rd rank goes to package constraints (49.01% average score) 2nd rank goes to marketing issues (53.22% average score). The 1st rank goes to the storage facility, which signifies that maximum respondents ranked it as the significant issue in supply chain management of apples in UT of J&K.

To examine the supply chain model of apples in UT of J&K. supply chain between farmers till end consumers, supply chain management (SCM) has a crucial role to play in the marketing of apples in J&K. it not only helps in increased production and consumption but also contributes to the economic development of the country. As far as responses from the respondents, two models were identified.

Model 1: - has 3 phases.

Phase1) Farmer → Agent → Mandi → Wholesaler → Retailer

Phase2) Farmer → Agent → Mandi → Wholesaler → Retailer → Consumer

Phase3) Farmer → Mandi → Wholesaler → Retailer → Consumer

Model 2: Model II comprises of

Farmer → Agent (commission) → Wholesaler → Retailer → Consumer

So, evidently, apples are being supplied using different distribution channels with many intermediaries like agents, commission agents, wholesalers, retailers, etc. it is also found that local agents are common to almost all phases.

Conclusion

Supply chain plays a crucial role in supplying apple produce from farmers to its end consumers. The supply chain of apples should be very efficient and effective. The present study was carried out to study the prices and constraints in the apple industry of J&K to find out the distribution hierarchy. Out of all limitations, the storage facility was the major problem in SCM of Apples in J&K.In UT Jammu and Kashmir, there must be a smooth exchange of information between the participants in the supply chain, and the government should provide sufficient assistance to traders, such as infrastructure and marketing facilities. According to the study, there is no adequate parking facility, and the government should investigate this issue as well. As a result, adequate storage is one of the most important aspects of the apple supply chain, which is currently lacking in UT J&K. Having an effective storage facility can aid in the establishment of an integrated supply chain model.

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GENDER STEREOTYPES AND THEIR IMPACT ON WOMEN EDUCATION-A SOCIOLOGICAL STUDY OF PATRIARCHAL SOCIETY IN BHOPAL CITY

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ABSTRACT

Gender stereotypes are oversimplified understandings of males and the differences between them. Individuals sometimes base their perceptions about appropriate gender roles upon gender stereotypes. The foundation of these gender stereotypes is rooted in patriarchy which is dominant system in our society. The present study has been conducted in Bhopal city. The study has examined the impact of gender stereotypes on women education in patriarchal society. For the purpose of study 300 respondents were selected by using stratified random sampling. The study emphasised on various issues like gender stereotypes, women education, patriarchal society, economic inequality of women,gender roles of women towards development, etc.

Keywords: *Gender stereotypes,patriarchy, Decision making, Household labour, Gender bias.*

1. Introduction

Gender stereotypes tend to include exaggerated or erroneous assertions about the nature of males and females. For example, a common gender stereotype about males is that they are not emotional. Females, on the other hand are commonly stereotyped as being irrational or overly emotional. A Stereotype is a widely accepted judgment or bias about a person or group even though it is overly simplified and not always accurate. Stereotypes about gender can cause unequal and unfair treatment because of person's gender. This is called sexism. There are four basic types of gender stereotypes;

Personality triats-For example, women are often expected to be accommodating and emotional, while men are usually expected to be self- confident and aggressive.

Domestic behaviours-For example, some people expect that women will take care of children, cook, and clean the home, while men take care of finances, work on the car, and do the home repairs.

Occupations-Some people are quick to assume that teachers and nurses are women, and that pilots, doctors and engineers are men.

Physical appearance-For example, women are expected to be thin and graceful, while men are also expected to be tall and muscular. Men and women are also expected to dress and groom in ways that are stereotypical to their gender(men wearing pants and short hairstyles, women wearing dresses and make-up).

The foundation of gender stereotypes is rooted in patriarchy which is the dominant system in our society as yet. Patriarchy is an often-used term in every day conversation. The term patriarchy implies "male domination", "male prejudice(against women)",or more simply "male power". Put simply, the term means "the absolute rule of father or the eldest male member over his family". Patriarchy is thus the rule of the father over all women in the family and also over younger socially and economically subordinate males. Patriarchy has been used critically to explain the male components of authority and power in any social system. Patriarchy automatically privileges men over women such that women have little or no claims to material, sexual and intellectual resources of the society. That is, in a patriarchal society women have to struggle to be educated, to have property or to make choices regarding marriage and other aspects of life. For men, these resources are a matter of right and can make choices that affect their lives. Men control various areas of women's lives in patriarchal system such as women's productive or labour power, women's reproduction, women's mobility and property and other economic resources.

Objectives

1.To study socio-cultural values of patriarchal society.
2.To study impact of gender stereo types on women education in patriarchal society.

3.To study gender roles in patriarchal society.

Hypothesis

Unpaid and unequal household labour has negative impact on women education in patriarchal society.

Opportunity for higher education and working outside the home is higher for boys than girls in patriarchal society.

Higher the economic inequality higher the exploitation of women in patriarchal society.

Women are excluded from the gender roles towards development in patriarchal society

2. Review Of Literature

Uma S. Kambhampati and Raji Rajan(2008) their paper is about patriarchy and the role of girls India's rural economy. Their analysis shows that in south India, girls like boys are more likely to go school and to work inside and outside the home than in north India where girls have less opportunity to work outside the home and go for education. Their study also shows that the possibility of achieving higher education and working outside the home is higher for Hindu girls than Muslim girls, indicating possibly a more restrict patriarchal system among Muslim households relative to Hindu households where less patriarchal system is prevalent. Also, father's and mother's employment are important for improving economy in households so that girl's get rid from the household chores and complete their basic education.

Tomas Sola Martinez,Francisco Javier Hinojo-Lucena et al(2008) the authors in this article have explored the culture of two cities Sparta and Athens, the two cities most representative of Greek culture in classical period. The ideological and philosophical representatives of classical era marked the differentiation in the roles between men and women. The men were playing the roles in politics, speech, were receiving higher education and were given dedication in public life. The women were mainly illiterate and were given the key roles as reproduction, domestic chores and for the education of their children until the age of seven or eight years. In this research article the authors have stated that in Sparta the boys receive the type of education which is more disciplined exercising both mind and body in the harsh military skills of army and girls on the other hand receive education based on work of women as something of their own nature. Women's tasks in Greek society are reproduction, upbringing, education and house work. These tasks were contributing to the smooth functioning of the family unit and also increased benefit to thole community. The authors also explored the role of feminist movement in 18th century that played the great role for basic rights of women(political, economic and educational, etc.)

Rawat S Preeti (2014) highlights in her paper that development of women is linked to the belief and practice of patriarchy which subjugates women at various levels such as political, economic, social, cultural and at educational levels, etc.Table 7 of her findings show that education level of women has no impact on eve empowerment. This means that though it is widely claimed education is the medium of improvement of the conditions of women. But this is not case in reality.

George Prince Atta(2015) his review paper conceptualizes as well as theorises the beliefs of traditional Ghanaian society on girl's education. The author in his review research paper while focusing on the barriers to girl education in Ghana explores that there are three main categories of factors causing gender gap in primary and secondary education in Ghana-these factors are school related, socio-cultural and macro level(Tanye,2008; Am and Gergel,2009).The school related factors a serving as barriers are sexual harassment and lack of female teachers as role models. Socio-cultural factors barriers to girl education in Ghana include education for boys highly valued than girls, child labour, and forced and early marriage. Socio-cultural or traditional barriers such as societal norms, laws, rules, beliefs and practices hinder female's participation in education. The macro level factor includes poverty. The poverty is the major barrier in the girl's education in Ghana.

Agarwal Sonali(2016) in her paper has explored the concept of patriarchy. She has defined patriarchy as male centred character. The author has also mentioned the theories of patriarchy by Walby in which he has stated that patriarchy debars women from their legal

rights including right to education. She has also referenced the Marxist feminist concept of patriarchy. According to feminist concept of patriarchy, a society where men consider themselves to be superior to their feminine counter parts, women find it difficult to educate themselves. Their families give preference to education of male child especially in developing countries like India.

Ferdous Amber, Zahra Sadaf (2016)their area of research consists of two universities of federal capital-International Islamic University of Islamabad and National University of Modern languages. The authors in their study have shown that about 38% participants were satisfied that the society we live is a male dominated society and the position of women is deprived and full of oppression. Their study also explored that 70% of female participant students revealed that their father agreed with their decision of education, while 79% participants mentioned that their fathers agree with choosing their discipline and 68% further explain that their father agrees on their decision on entering in co-education. Previously girls in patriarchal system were not allowed for co and higher education but the study has shown that patriarchal societies are changing now a days regarding the education of females.

Sudarso, Sudarso, Keban, Phillipus Edy,and Mas'udah, Siti (2019) the authors in their article have examined gender, religion, patriarchy and educational discrimination faced by women who are part of the Madura culture in East Java. According to authors the Madurese community, besides known as a community that obeys the teachings of Islamic religion, also holds tight to the original traditions and customs that have become the values in the behaviour of Madurese people. Also, relations between men and women still contain patriarchal values which place men as a superior component compared to women. Their study shows that the phenomenon found in the coastal area of Madura, namely the fusion of Madurese culture and the understanding of Islam, reinforces the existence of a patriarchal culture which places men in higher role than women. For example, there are still many women entering into early marriage, with the interview results showing there to be a number of marriage cases involving school aged women between 13-15 years old. The authors have shown that early marriage is still happening in Madura because there are fears held by the parents about socio-cultural sanctions, such as fearing that there is a "curse" on their daughters. This situation is the factor that contributes to the concept of education for women. Girls in coastal Madura are educated not to gain knowledge to pursue a career in the future but to do more with their future as wives and mothers for their children.

Wood Hannelie (2019) in his article focused on the church's role in the formation and up-keeping of gender inequality and how it shaped and constrained gender in equality through an eye of stereotypes. Besides this, the article shows how traditional and damaging cultural practices contribute to women's problems and sufferings that often take the form of domestic violence in patriarchal system. This forced the women to renegotiate their accepted social roles. The author has also focused on gender in equality in African context. The author has shown in his study that in patriarchal system religion, harmful traditions and cultural practices are used to support injustice towards women in African context. e.g., prescriptive dress codes, restricted movements in public and private places, restriction from holding positions of authority in church. Their basic rights such as education,working outside home,choice of marriage partner, whether to have or not have children, to divorce, to express themselves sexually, etc. are violated.

3. Research Methodology

The present study has been conducted in Bhopal. The study is based on both primary and secondary data. The primary data has been collected by using interview schedule and observation. For the purpose of study, the researcher has selected 300 responders by using stratified random sampling method. The framework of the present study is based on descriptive research design. Analysis of data has been done carefully by using statistical methods.

4. Results And Discussions

Results are the presentation of data and hence findings or investigations. Discussion provides the explanation and interpretation of findings by comparing with the findings in prior

studies.For the present study that has been conducted in Bhopal city by interviewing 300 respondents, the findings or investigations can be revealed in tables given below:-

Table.1 Distribution of respondents according to their age.

S. NO	Age Group(Years)	Frequency	Percentage
1	20-30	50	16%
2	31-40	150	50%
3	41-50	70	23%
4	50-60	20	6%
5	60-Above	10	3%
	Total	300	100%

Table.1 reveals that maximum i.e.,50% respondents were from the age group 31-40 and minimum i.e., 3% respondents were from the age group 60 and above.23% respondents were from age group 41-50,16% respondents were from 20-30 and 6% responds were from 50-60.

Table.2 Distribution of respondents according to their educational level

S.NO	Educational Level	Frequency	Percentage
1	Illiterate	20	6.6%
2	10^{th}	70	23.3%
3	12^{th}	90	30%
4	Graduation	70	33.3%
5	Post-Graduation	50	16.6%
	Total	300	100%

Table.2 reveals that maximum i.e.,33% respondents that were interviewed were having educational level up to graduation 6.6%, respondents were found illiterate, 30% respondents were found having educational level up to 12^{th},23% respondents were found only 10^{th} pass and about 16.6% respondents were found post graduates. The findings of the table 1.2 reveal that in Bhopal city there is an increasing trend of education up to graduation, thereafter the trend declines. It has been found that in Bhopal city there is a strong patriarchal rule(male domination).This patriarchal rule has a great impact on women education. The women especially Muslim women can't go for higher education due to age old traditions and values of patriarchal system. The women had to leave parental home after marriage, therefore there is a strong preference of male education in patriarchal societies, as they can economically help their families.

Table.3 Distribution of respondents according to their sex.

S.NO	Sex	Frequency	Percentage
1	Females	200	66.6%
2	Males	100	33.3%
	Total	300	100%

Table.3 reveals the classification of respondents on the basis of sex.It shows that maximum i.e. 66.6% respondents are females and 33.3% respondents are males.

Table .4 Distribution of respondents according to their income.

S .NO	Income Group	Frequency	Percentage
1	10,000-20,000	90	30%
2	21,000-30,000	65	21.6%
3	31,000-40,000	55	18.3%
4	41,000-50,000	50	16.6%
5	51,000-60,000	40	13.%
	Total	300	100%

Table.4 shows the income groups of respondents of the present study. The table reveals that minimum i.e. 13% of respondents fall in highest income group (51,000-60,000) and maximum i.e.30% or respondents fall in the lowest income group(10,000-20,000).21% of respondents fall in the income group of 21,000-30,000,18% respondents fall in the income group of 31,000-40,000 and 16% respondents fall in the income group of 41,000-50,000.

The above four tables reveal the personal bio-biodata of respondents of selected field area

Table.5 Distribution of respondents in view of the unequal and unpaid household labour has negative impact on women education in patriarchal family.

The unequal and unpaidhousehold labour has negative impact on women education in patriarchal family?	Frequency	Percentage
I strongly disagree	30	10%
I disagree	50	16.6%
No opinion	75	25%
I agree	70	23.3%
I strongly agree	75	16,6%
Total	300	100%

Table.5 analyses the impact of unpaid and unequal household labour on education of women in patriarchal society. The table reveals that about 10% respondents who were interviewed were strongly disagreed that unequal and unpaid house hold labour has any impact on women education. Their opinion was that in modern and contemporary world women enjoy equal rights of education. Modern women not only perform house hold chores but also work outside the home and go for higher education.25% respondents had no opinion in this regard. However, 23% respondents agree and about 16.6% respondents strongly agree about the above statement. Their response was that it takes many hours a week to clean houses, cook, shop in the grocery and do everything that needs to be done. Hochschild(1989) to observe in a widely cited book that women engage in a "second shift" of unpaid work when they come from their paying job or from a school or college.

Table.6 Distribution of respondents in view of unequal household duties lead to unequal family relations.

Unequal household duties lead to unequal family relations?	Frequency	Percentage
I strongly disagree	45	15%
I disagree	50	16.6%
No opinion	50	16.6%
I agree	70	23.3%
I strongly agree	85	28.3%
Total	300	100%

Table.6 analyses the statement- unequal house hold duties led to unequal family relations. The table shows that about 15% respondents strongly disagree with the statement which is the minimum percentage. 16% respondents disagree with the statement.16% respondents had no opinion. However, 23% agree and about 28% strongly agree with the statement which is the maximum percentage. Their response was that the unequal house hold division of labour i.e., unequal family arrangements in terms of sharing the burden of house work and care of children is unequal. Some societies take it easy that while men will naturally work outside the home, women could do it if and only if they could combine it with various inescapable and unequally shared household duties. This inequality may result in unequal family relations as well as derivative inequalities in employment and recognition in the outside world.

Table.7 Distribution of respondents in view of women are economically exploited by male domination in patriarchal society.

Women are economically exploited by male domination in patriarchal society?	Frequency	Percentage
I strongly disagree	60	20%
I disagree	45	15%
No opinion	40	13.3%
I agree	75	25%
I strongly agree	80	26.6%
Total	300	100%

Table.7 shows the analyses of statement women are economically exploited by male domination in patriarchal society. The table reveals that about 15%respondents disagree and 20% respondents strongly disagree the above statement. 25% respondents have no opinion. However, 25% agree and 26% respondents strongly agree that women are economically exploited by male domination in patriarchal society. Their view was that in patriarchal society women's productivity is controlled by men both in household and outside in paid work. This control means men benefit materially from patriarchy. This is called "patriarchal mode of production "where women's labour is expropriated by their husbands and others who live there(Sylvia Walby 1990). She calls housewives as the "producing class" and the husbands as the "expropriating class". According to Hekr, patriarchy is a system of social structure and practices in which men dominate, oppress and exploit women.

Table.8 Distribution of respondents regarding women are likely excluded from the gender roles towards development than men in patriarchal society.

Women are likely excluded from the gender roles towards development than men in patriarchal society?	Frequency	Percentage
I strongly disagree	50	16.6%
I disagree	45	15%
No opinion	70	23.3%
I strongly agree	75	25%
I agree	60	20%
Total	300	100%

Table.8 explores the analysis of the statement women are likely excluded from the gender roles towards development than men in patriarchal society. The table shows that 23% respondents agree and 16% respondents strongly disagree with the above statement.23% respondents have no opinion about the statement. However, about 25% respondents which is the highest percentage strongly agree and about 20% respondents agree with the above statement. Their response was that women are mainly confined to housework that outside work. The women are always busy in domestic chores and have less opportunity to work outside the home to benefit their family economically. Gender roles can be linked to expectations of males and females in realms of the family as well, such as work(Williams 1995).In work place men and women are often expected to perform different tasks and occupy different roles based on their sex (Kanter 1977).

Table.9 Distribution of respondents regarding women should be active participants in economic activity in patriarchal society.

Women should be active participants in economic activity in patriarchal society?	Frequency	Percentage
Yes	150	50%
No	80	26.6%
Not sure	70	23.3%
Total	300	100%

Table.9 shows the responses of respondents about women should be active participants in economic activity in patriarchal society. The findings of the above table reveal that majority of the respondents i.e. 50% replied yes women should be active participants in economic activity in patriarchal society.23% respondents were not sure about this. About 26% respondents replied no women should not be active participants in economic activity in patriarchal society. Their view was that the limited economic participation of women in economic activity is an extension of their traditional roles(nursing, teaching, labour intensive job requiring patience and delicate skills) with wages based on gender discrimination. In western culture women play the roles of the house wife and mother. The western culture also believes that any effort to change the traditional roles of men and women in the society an cause damage to the social fabric of society. This view supports and maintains patriarchal society (Ann Oakley in 1972 in Sex, Gender and Society).

Table. 10 Distribution of respondents regarding opportunity for higher education and working outside the home is higher for boys than girls in patriarchal society.

Opportunity for higher education and working outside the home is higher for boys than girls in patriarchal society?	Frequency	Percentage
I strongly disagree	45	15%
I disagree	40	13.33%
No opinion	75	25%
I strongly agree	80	26.6%
I agree	60	20%
Total	300	100%

Table.10reveals the analysis of the statement opportunity for higher education and working outside the home is higher for boys than girls in patriarchal society. The table shows that 13% respondents agree and 15% respondents strongly disagree with the above statement.25% respondents had no opinion with the statement. However, 20% respondents agree and 26% respondents strongly agree with the statement. Their response was that men not only control women's sexuality but also their physical mobility. Women have to follow strong purdah system, limited interaction with opposite sex in Muslim patriarchal society in Bhopal city. Besides this there is an increasing trend of education up to graduation level. After that the trend of education declines among women. In Bhopal it has been found that there is a strong patriarchal rule. This rule has great impact on women education. The women cannot go for post-graduation due to age old traditional patriarchal traditions and values. There is a strong preference of boy's education in patriarchal societies of Bhopal as the male members can economically help their families, girls have to leave the parental house after marriage. The women at higher institutions experienced male supremacy, disempowerment, and disrespect of womenfolk. Patriarchy impacts on their upward mobility and deprives promotions they deserve. The reigning patriarchal environment does not only impact on their academic output but also on their intellectual and emotional wellbeing and their person (E.T. Dlamini and J.D.Adams 2014).

Table .11 Distribution of respondents regarding women should have decision making power in patriarchal society.

Women should have decision making power in patriarchal society?	Frequency	Percentage
Yes	150	50%
No	60	20%
Not sure	90	30%
Total	300	100%

Table.11 reveals the responses of the question-women should have decision making power in patriarchal society. About 20% respondents which is the minimum percentage responded no.30% respondents were not sure about the question. However, 50% which is the highest percentage responded that women should have decision making power in patriarchal society. The respondents also replied that in patriarchal societies of Bhopal city, the decision making power is in the hands of man. Both man and woman enjoy life and live with peace in family but there is male domination in every sphere of life in patriarchal society. In spite of the transformations witnessed by family and women conditions in Arab society, the traditional social power still infuses patriarchal authority with legitimacy, providing men with the privilege to make crucial decisions. Also focusing on "hybrid families" in which both husband and wife work outside the house. Within this type, the real power remains in the hands of men, but they may significantly give up on making a lot of decisions related to family.

5. Conclusion

This study was conducted to investigate the impact of gender stereotypes on education of women in patriarchal society in Bhopal city.The study was based both primary and secondary data.The primar data was collected by using interview schedule.For the purpose of present study 300 respondents were selected from selected field area by using stratified random sampling.The framework of the present study is based on descriptive research design.Among the selected respondents 200 were females and 100 were males. Maximum (50%) respondents belong to the age group(31-40) and minimum(3%) respondents belong to (60 and above) age group.6.6% were illiterate and 16.6% were post graduates.30% respondents fall in the income group (10,000-20,000) and 13% respondents fall in the income group of 51,000-60,000.The findings of the study reveal that women in patriarchal societies can attain education upto graduation because there is a strong male domination in Bhopal city. The women cannot go for higher education due to age old traditions and values of patriarchal system. The findings also show that women education is also affected by unequal and unpaid household labour. These unequal and unpaid house hold duties can lead to unequal family relations in patriarchal family. The findings also reveal that women are also exploited by male domination and are excluded from gender roles towards development in patriarchal society. Also, opportunity for higher education and working outside the home is higher for boys than girls. The women also enjoy little or no decision-making power in patriarchal societies of Bhopal city. It has been also revealed that in patriarchal societies men control women's productive and labour power, her reproduction, her sexuality, her mobility and property and other economic resources. In today's modern and contemporary world women enjoy equal opportunity and rights in education, political career, administration and other fields but these are still in subordination position dominated by male power in patriarchal society.

6. Suggestions

1. 1.Gender sensitization programmes should be organised at community level to bring definite orientation in thinking, practices and approach of individual concerning gender.
2. Mind set of the men in patriarchal societies should be created to nots see women in the gender stereotypical image.

3. Women should be recognized and approached for involvement in multifarious activities.
4. Women must be involved in decision making process and should be allowed to play important role in socio-economic development.
5. Equal access to higher education for women should be ensured in patriarchal societies.

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THE IMPACT OF EMPLOYEE ENGAGEMENT ON EMPLOYEE PERFORMANCE IN STATE BANK OF INDIA

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ABSTRACT

State Bank of India is one of the largest public sector bank in the country which holds a reputable image in the hearts of people for more than 200 years. The performance of bank is an indication of its employee engagement. The research is an attempt to scrutinize the impact level of drivers of Employee Engagement on Employee performance for the Non-managerial employees of State Bank of India in Raipur region. The research is drawn from the primary data collected from 283 employees on components of Employee Engagement and Employee Performance. The association between employee engagement and employee performance is tested through correlation analysis and the impact of engagement on performance is tested through regression analysis using SPSS 20 software tool. There were six drivers that were predominantly identified with Employee engagement in branches of SBI. These were Employees' Job Satisfaction, Employees' Organization culture and Pay benefits, Branch's Work Environment, Employees' Job Profile, Employees' Career Progression, Leadership support by immediate superiors. The research concluded that all the six engagement drivers, impacted significantly the Employee performance.

***Keywords**: Employee Engagement, Drivers of Employee Engagement, State Bank of India, Employees performance, Correlation and Regression.*

Introduction

State Bank of India is the most trusted bank with a legacy of over 200 years and holds a reputed place in the hearts of the customers. The financial performance of the bank is the result of the performance of it's employees. The employee performance is determined by the level of the engagement of it's employees. The Employee Engagement is the level of involvement of an employee towards the organization. In today's world the employees are aware of the competitive environment in the financial sector. The banks are adopting practices and policies in order to drive the employees towards healthy engagement. The engaged employees always put their effort for improved performance as such the banks also shows financial growth. Employees have emotional bond with the organization. The bonding of organization members to their work roles is defined as employee engagement (Kahn, 1990). Employee engagement, according to Gallup research group, is the individual's involvement and satisfaction along with enthusiasm for work, Harter (2002). According to Little and Little (2006), the factors of employee engagement includes the employees and their own unique psychological makeup and experience, the ability of employers to create the conditions for promotion of employee engagement and the employees interaction at all levels.

The research paper is an attempt to scrutinize the level of impact of drivers of Employee Engagement on Employee performance in the State Bank of India in Raipur region after merger of five associate banks with SBI after April 2017.

Literature Review

It is proved by the researchers that an engaged employee performs better than the less engaged employees. Gruman and Saks (2011) have suggested means to foster and manage employee engagement in order to get improved level of performance (Gurman et al, 2011). Khalifeh (2013) focused on antecedents that affects Employee Engagement and Organisation Performance and showed that there is found a significant relationship between rewards and recognition, employee communication, extended employee care and employee development. (Khalifeh et al, 2013). In a study on factors affecting Employee Performance, there are four drivers of employee engagement, i.e., work-life balance, communication, organizational culture and leadership (Deepika et al, 2015). While linking organizational commitment and work engagement to employee performance, Cesario and Chambel (2017) showed a positive relation

between effective commitment and performance, work engagement and normative commitment. Datta, H.(2017) have found that the prominent drivers of employee engagement in banks are: job satisfaction, organization culture, career progression, pay benefits, work environment and leadership. Karthikeyan (2012) have found that the job performance can be gauged through stability of performance, task performance, adaptability, employee efficiency and work under pressure.

The research has found that employers now become conscious and are focusing on employee engagement to create more productive and efficient workforce (Markos*et al.*,2010).Although there are numerous drivers that lead to employee engagement yet some of the prominent ones are job satisfaction, work environment, organization culture, career progression, pay benefits, leadership and job profile.

Gruman and Saks (2011) have emphasized that the best way to achieve performance increments is through orienting performance management system in order to promote employee engagement.Nazir and Islam (2017) are of the view thatemployee performance and affective commitment mediated by employee engagement is positively influenced by perceived organizational support. In a study, by using regression analysis, Idrees (2015) showed that motivation, training and salary have a positive relationship with performance.

Research Objectives

1 To study the relationship between employee engagement and employee performance in State Bank of India.

2 To study the impact of drivers of employee engagement on employee performance State Bank of India.

Hypothesis formulated:-

H_1:There is a significant relationship between employee engagement and employee performance

H_2:There is significant impact of employee engagement drivers on employee performance

Research Methodology

The population considered for this research consisted of 300 employees who belong to fifty-five Branches of SBI in the Raipur region. Employees are the clerks, associates, cashiers and accountants who are in direct touch with the customers and represents the Bank to the customers. The sample (283) consisted of more than one-third of selected population (300) so as to get maximum responses. Simple Random Sampling from a finite population gives each possible sample combination an equal probability of being picked up and each item in the entire population have an equal chance of being included in the sample.

The responses of the employees were coded on a 5- point likert scale (strongly disagree coded as 1, disagree coded as 2, undecided coded as 3, agree coded as 4 and strongly agree coded as 5) was used to reduce the statistical problems of extreme skewness. The employee engagement scale (27 items) was adopted from Datta,H.(2017) and the employee performance scale (21 items) has been adopted from Karthikeyan, S.(2012). The data was collected during 2018-19 (post merger of associate banks with SBI) and data was analyzedanalyzed using SPSS-20 software tool.

On the basis of factor analysis, the 27 items of employee engagement scale were reduced to 6 principal factors (Job Satisfaction, Work Environment, Job profile, Career Progression, Leadership, Organisation culture and pay benefits). For correlation analysis, the employee engagement is taken as total of 27 employee engagement scale items and employee performance is taken as sum of 21 employee performance scale items.

Most of the respondents fall in the age group between 26 and 35 years of age. The males and female respondents account for Fifty six percent and forty four percent of the sampled population. About seventy three percent of the sampled employees were graduates and about twenty seven percent of sampled employees were postgraduates. It is assumed that most branches in the region have similar employee distributions

Data Analysis

Test of Correlation

The test of normality for distribution of data revealed that distribution was not normal ($p<0.05$) and therefore non-parametric test was proposed for correlation analysis.

The strength of association between employee

engagement and employee performance was measured througha nonparametric Spearman Rho rank based test of correlation.

Table 1: Correlation

Correlations				
			Employee Engagement	Employee Performance
Spearman's rho	Employee Engagement	Correlation Coefficient	1.000	.485**
		Sig. (2-tailed)		.000
	Employee Performance	Correlation Coefficient	.485**	1.000
		Sig. (2-tailed)	.000	
**. Correlation is significant at the 0.01 level (2-tailed).				

From the **table 1** it is observed that Employee Performance has a positive and statistically significant bivariate association with employees engagement ($p<0.05$).

H_1: There is a significant relationship between employee engagement and employee performance. (Accepted)

Test of Regression

In Regression analysis showed the impact of drivers of employee engagement which are the independent variables on the employee performance, which is the dependent variable.

Table 2 : Regression Coefficients

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	49.008	2.871		17.068	.000
	Job Satisfaction	.301	.080	.209	3.766	.000
	Leadership	.959	.092	.592	10.444	.000
	Work Environment	-1.040	.223	-.291	-4.673	.000
	Job Profile	-.411	.174	-.125	-2.363	.019
	Organisational Culture and Pay benefits	.382	.167	.128	2.291	.023
	Career Progression	.723	.166	.207	4.359	.000
a. Dependent Variable: Employee Performance						

Based on the nonstandard coefficients we obtain the regression equation:

$\mathbf{y = 49.008 + 0.301\ x_1 + 0.959\ x_2 - 1.040\ x_3 - 0.411\ x_4 + 0.382\ x_5 + 0.723\ x_6}$

where $\mathbf{x_1}$ = Job Satisfaction, $\mathbf{x_2}$ = Leadership, $\mathbf{x_3}$ = Work Environment, $\mathbf{x_4}$ = Job Profile $\mathbf{x_5}$ =Organisation Culture and Pay benefits and $\mathbf{x_6}$ =Career Progression, $\mathbf{y}$ = Employees Performance.

Table 3 : R Square

Sl No.	Independent Variable (Drivers of Employee Engagement)	Dependent Variable (Employee Performance)	β	Multiple R	R square	Significance level
1	Job Satisfaction	EP	.209	.754	.568	**.000**
2	Leadership	EP	.592			**.000**
3	Work Environment	EP	-.291			**.000**
4	Job Profile	EP	-.125			**.019**
5	Organisational Culture and Pay benefits	EP	.128			**.023**
6	Career Progression	EP	.207			**.000**

Therefore it is considered that six engagement drivers: Job satisfaction, Job profile, Organization culture and Pay benefits, Work Environment, Career progression, Leadership are the significant predictors of employees performance ($p < 0.05$).

Table 4 : Model Summary

Model Summary[b]										
					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.754[a]	.568	.559	5.076	.568	60.546	6	276	.000	2.400
a. Predictors: (Constant), Organisational Culture and Pay benefits, Job Profile, Leadership, Career Progression, Job Satisfaction, Work Environment.										
b. Dependent Variable: Employee Performance										

The coefficient of determination R^2 indicating the percent of how much of the total variance is explained by the independent variables. Thus 56.80 % of employees' performance is explained by the previously identified engagement drivers

.

Table 5: ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9361.385	6	1560.231	60.546	**.000[b]**
	Residual	7112.368	276	25.769		
	Total	16473.753	282			
a. Dependent Variable: Employee Performance						
b. Predictors: (Constant), Organisational Culture and Pay benefits, Job Profile, Leadership, Career Progression, Job Satisfaction, Work Environment.						

From The analysis of varianceANOVA for regression (**table 5**), $p < 0.0005$, which is less than 0.05, and indicates that, overall, the regression model is statistically significant and predicts the outcome variable.

H_2 There is significant impact of employee engagement drivers on employee performance (Accepted)

Discussion and findings

The data analysis concluded a strong positive association between employees performance and employees engagement and 56.80 % of employee performance is explained by the six engagement drivers: employees job satisfaction, employees' organization culture and pay benefits, work environment, job profile, leadership and career progression.

The results showed that all the engagement drivers were significantly ($p < 0.05$) impacting the employee performance and the leadership impact (standard $\beta = .592$) is the maximum on employee performance in Raipur region. The reason is that Raipur is a young capital and after the merger of associates of SBI (01 April 2017), the employees are mostly dependent on their supervisors for guidance and support in most of the financial matters.

It has also been established that with team work and friendly atmosphere in branch, supported by guidance from supervisors which gives freedom to employees to use their own judgment, the employees' performance is bound to improve and which results in maximizing the branch-profits and ultimately leads to organisation growth.

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A COMBINED MAPPING APPROACH FOR RELATIONAL SCHEMAS

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ABSTRACT

Nowadays many issues of data handling, large amount of data is generated on every day and it is difficult to fit in frame for data mapping. Still there are inconsistencies and incompleteness issues in schema mapping. This paper presents probabilistic approach in the issue of schema mapping. Our approach is indicative, mountable, and extensile. We introduce Combined Mapping Approach for Relational Schemas to this problem using state of-the-art probabilistic reasoning techniques. We determine that the correctness of Combined Mapping Approach is greater than 33% above of metadata-only method for small data examples, and this method normally finds perfect mappings even if a sector of the data is unpredictable.

Keywords: *Attribute Mapping, Probabilistic Approach, Integration, Data Mapping*

Introduction

Data mapping is the technique of identifying objects which are related to each other. In other words, database mapping is a method of finding the correspondences between the concepts of different distributed, heterogeneous data sources. A database mapper is a binary operation which takes two schemas as input and determines their corresponding elements. Generally, the analysis of all matches between elements of two schemas is not possible due to the presence of semantic in input schemas. Therefore, a database mapper should only provide match candidates through a user interface in such a way that users can accept, reject, or change them. The several semi-automatic database mapping algorithms have been proposed to determine matches between different elements of two schemas [1][2][3].

Enterprise data is getting more diverse and at the same time, it is advantageous for businesses to leverage data and transform it into meaningful results. However, enterprises today collect information from many sources referring the same entities. To merge this data and make sense of it, data mapping is used which is the process of establishing relationships between separate database schemas.

For example, Microsoft Dynamics CRM has several data sets which encompass of different items, such as Leads, Opportunities, and Participants. Each of these records has some fields like Name, Account Owner, City, Country and more. The application also has a well-defined schema along with attributes, enumerations, and mapping protocols. Hence, if any record is to be inserted to the schema, a data map wants to be designed from the data source to the CRM account.

Depending on the factors like number, schema, and primary keys and foreign keys of the relational databases records, database mappings can have a changing degree of complexity.

For example, data from three various databases tables are combined and mapped to an Excel destination. Thus, attribute level information as well as same entities are to be attempted for the actual database mapping [4][5].

In simple words, data mapping is a relationship between two or more data systems. Data mapping joins two different types of data models together. In data integration procedure data mapping is one of the most significant factors. Making it simpler, data mapping is all about searching how a database connects to another database. To make it easier and simpler to understand the concept, here is an example.

Suppose you have a list of people, a list that have some names of your friends. As well you have another list that have the phone numbers of your friends. Now you want to combine both of the lists and that is where data mapping works for you.

Data mapping is the initial step in many compound segments to start the integration process. That contains data transformation between the data source and the data

destination. It helps in the detection of a private data such as the last digits in a social security number and so on. It can also be used for securing many databases and combine them into one while looking for redundancy [6].

Literature Survey

To understand the various data mapping techniques, here in review of literature the discussion of some schema matching techniques are necessary. The various mapping techniques like complex schema matching, Entity matching, mapping between different elements of two schemas, record matching, probabilistic approach of schema mapping, Automatic schema matching are discussed below.

Review of Literature

The various important approaches of data mapping are discussed as follows:

Complex Schema Matching i.e. CSM, the problem of searching semantic correspondences between elements of two compound schemas, plays important role in many applications, such as data warehouse, heterogeneous data sources combination and semantic web. The existing way to automating schema matching focus on calculating direct element matches between two schemas.

However, this work involves the relationships between real-world schemas involving many complexes matches besides 1:1 matches. The limitation still remains on matching efficiency, because the candidate matches space is so large which they need searching [1].

Entity matching as well as value mapping across two varied data sources are critical tasks in applications involving data combination, data warehousing, and federation of databases. Before data can be combined from multiple tables, the columns and the values appearing in the tables must be matched. Anuj Jaiswal, David J. Miller anticipated a novel method that optimizes embedded value mappings to improve entity matching in the occurrence of opaque data values and column names. In this approach, the fitness objective for matching a pair of attributes from two entities depends on the value mapping function for each of the two attributes [2].

The work includes schema matching, which provides a mapping between different elements of two schemas. It is complicated due to the existence of semantic in input schemas. It is achieved through different matchers for merging databases. It determines all matches between elements of two schemas. Still, it there is scope for improving accuracy [3].

First schema matching and Second record matching are two essential steps in integrating many relational tables of different schemas, where it first unifies the schemas and then it detects records mentioning to the same real entity. The two processes have been thoroughly studied separately, but in this work, they had done combination of both. They have used indexing and estimated the matching likelihood between two records [4].

When link the data stored in varied database, very difficult problem is entity matching, i.e., matching records representing semantically corresponding entities in the real world, across the sources. When decision tree techniques have been used to understand entity matching protocols, most decision tree learners have an inherent representational bias, that is, they generate unvaried trees and prevent the decision boundaries to be axis-orthogonal hyper-planes. Cascading other classification approaches with decision tree learners can improve this bias and potentially rise classification accuracy. In this method user apply a recently developed constrained cascade simplification method in entity matching and report on observed evaluation using real data. Its results show that this method smartly performs the base classification methods in terms of accuracy, especially in the dirtiest case [5].

The probabilistic approach of schema mapping is declarative, scalable, and extensible. This approach designs upon recent results in both schema mapping and probabilistic reasoning techniques in both fields. The problem of choosing the best mapping from a apart from potential mappings, given both metadata constraints as well as data samples. As selection has to reason about the inputs and the dependencies between the chosen mappings a new schema mapping optimization problem which gets interactions between mappings then they familiarize Collective Mapping Discovery (CMD), solution get using probabilistic

reasoning techniques, which allows for discrepancies and incompleteness [6].

Automatic schema matching concept is typically only deals with result in attribute correspondences. However, real world data combination problems often require matching whose arguments want all three types of fundamentals in relational databases and that are relation, attribute and data value. In this concept the definitions and semantics of three extra correspondence types regarding both schema and data values. Two methods for automatically recognizing these correspondences are developed. First requires some limited number of duplicates across data sources. Another is a general instance-based method with no such requirement [7].

Proposed System

As we see that many data mapping methods use to analysis or simplify the complex data. Day by day the data is generated in large amount and it is very difficult to analysis so to simplify mapping of data here data type & attribute are used very effectively.

Problem Definition

In this proposed system, combined database mapping approach for interoperating among different database systems. In this proposed system, the database mapping process uses of three main phases: -attribute mapping, data type mapping and data merging.

The attribute mapping determines whether the names of two attributes are similar or not by calculating the percentage of similarities between their names. It uses both structural and semantic level information including string mapping, dictionaries to calculate the percentage of similarities between the names of two attributes. Then, our approach compares the similar mapping attributes and data type mapping and selects the better match. The final phase of the attribute mapping process is merging, which merges those pairs of attributes that are identified matched, while those attributes that are not matched remain as they are.

System Architecture

- **User**

The users basically include engineers, scientist, business analytics and others who thoroughly familiarize themselves with the facilities of the concept in order to implement their application to meet their complex requirement. These users try to learn most of the Data mapping facilities in order to achieve their complex requirements.

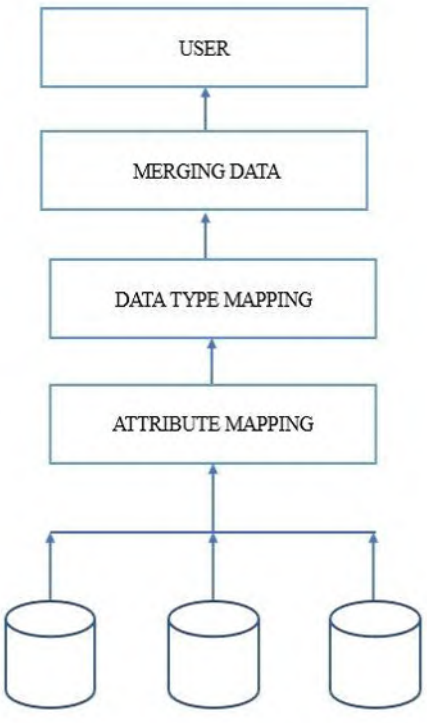


Fig. 1 - System Architecture

- **Merging Data**

In data merging, first we select the two data set (table) to create a single data set for easy reporting & analysis. The first data set that contains some attributes like account number, name and ownership information. The second data set contains attributes like number of discharges and payment details etc. Unfortunately, we do not have a common ID to merge the two data set so we try to merge the data using data frames, as the columns have different names; we need to declare which columns to match for the left and right Data Frames.

- **Steps of Data Mapping**

The algorithm for combined database mapping approach is defined below:

1. Start
2. First select the data bases.
3. Display of attribute & data to be map for respective databases.
4. Select appropriate Attribute from respective databases for further Mapping.

5. Apply Mapping Probabilistic strategy for selected Data databases.
6. Display Data Mapped for selected Data databases.
7. Display of data as perscore of mapping in ascending order.
8. Stop.

Discussion & Analysis

Analysis

Probabilistic matcher determines the best match for each combination. For hospitals data set we are analyzing approximately 7.5 thousand combinations. On the system, this takes about 2 min and 11 seconds to run. The matching is done for three scale best match, worst match &average match < 80 in two data set.

Observations

i)Top Five Best Match

The Fig.2 shows the top five best match found in the two-hospital datasets use in the data mapping. In the graph x-axis represent the data mapping score & y-axis represent the top five individual record.



Fig. 2 - Best Matchin Database

ii) Top Five Average Match

The Fig.3 shows the top five Average match found in the two hospital datasets use in the datamapping. In the graph x-axis represent the datamapping score & y-axis represent the top five average case individual record.

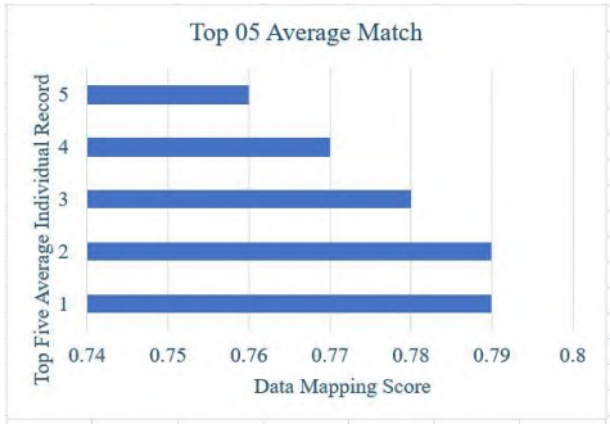


Fig. 3 - Average Match in Database

The Fig.4 shows the data matching with various scales like best match, average match and worst match.

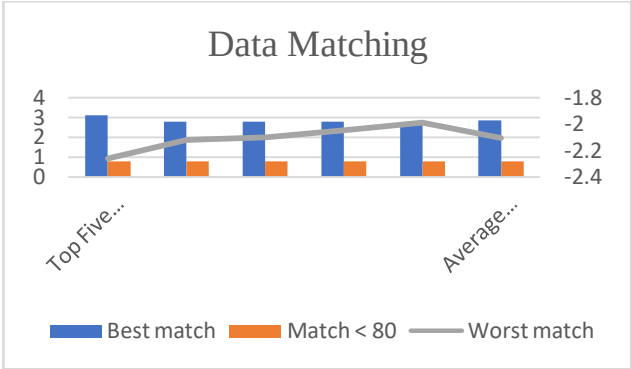


Fig. 4 - Various Matching Scale

Conclusion

Data mapping is always resource-intensive requiring hands-on development, review, and knowledge about all sources and targets. Human intervention is required for mapping design and validation of map results. Marketable and open-source mapping tools can assist in the process by providing changing degrees of automation. Manual review is required, to a varying extent, to map the portions that failed automated mapping and to authenticate the results of automated mapping. Linking various record sets on text fields like names and addresses is a common but interesting data problem. In this work, we had used combined mapping approach for merging databases schemas. Our proposed approach contains structural and semantic level information to map database schemas for getting better results compared to existing approaches.

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A STUDY ON THE HEALTH AND SAFETY MEASURES WITH SPECIAL REFERENCE TO STEEL INDUSTRIES

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ABSTRACT

The working environment in a company will be affecting the workers' health and safety. There may be different concerns like excessive heat or cold, noise, odours, fumes, dust and lack of sanitation and pure air etc., which leads to accident or injury or disablement or loss of life to the workers. An environment should be created such that the employees work fearlessly, focusing on their work rather than safety concerns. Welfare measures should be adopted by the organisation in a way to take utmost care of the employees and its family, in case anything happens. Organisation should take up effort to make its associates aware of all the related safety concerns and measures. This in turn will improve the productivity and efficiency. This study focuses on the different safety concerns, measures adopted steel industries and suggestions to improve the same.

Keywords: *Health, Safety, Risk evaluation, First aid, Insurance policy, Hazardous materials, Working environment*

Introduction

Health and safety are significant aspects of any organization. "The practice of occupational health enjoyed a boost after the second world war, when the European countries embarked on an industrialization drive and in the process were confronted with the ills of industries". (Clarke,2004) Since then various discipline embodied in occupational medicine, nursing, hygiene and safety have evolved to various extend in different nations. Other disciplines with strong links to occupational health including occupational health and occupational aspects of ergonomics, psychology, toxicology, and more recently industrial relation have evolved alongside and are now accepted as disciplines closely related to occupational health and safety. Even after the development of all these sophisticated disciplines, concerns related to health and safety is yet to be improved in many organisations.

Steel Industry

India's economic development is dependent upon the growth of the Indian steel industry. Consumption of Steel is considered as an indicator of economic development, while still continues to have a significant hold in traditional sectors such as construction, housing and ground transportation. India has a key position on the global steel map, with the development of new state of the art steel mills, acquisition of global scale capacities by players, continuous modernization and up gradation of older plants, improving energy efficiency and backward integration into Global material sources. Steel is manufactured as internationally marketable product with no major trade barriers across National boundaries to be seen currently. There is also no inherent resources related constraints which may significantly affect production of the same or its capacity creation to respond to demand hikes in the Global market. Even the public policy restrictions have been negligible internationally and even if there are any the same to respond to specific conditions in the market and have always been temporary. Therefore, the industry in at a global level is unlikely to throw up substantive competition issues in any national policy framework. Further, there are no normal monopoly characteristics in steel. However, this does not mean that there is no relevant or serious competition issue in the steel industry. The growing association in the steel industry worldwide through mergers and acquisition has already thrown up several significant concerns. The fact that internationally Steel has always been an oligopolistic industry sometimes has raised concerns about the anti-competitive behaviour of bigger firms that dominate this industry. On the other hand, the set of large firms that characterize the industry has been changing over time. Trade and other official policies have significant bearing on

competition issues. Matters of subsidies, non-tariff barriers to trade, discriminatory customs duty etc. may bring insignificant distortions in the domestic market and in the process change the competitive positioning of individual players in the market. The specific role of the state in creating market distortion and thereby competitive condition in the market is well known issue in this country.

Industrial growth and changes in the demands for productivity has created a wide range of concerns related to safety and health issues in this sector. Even though the companies are making policies and procedures to avoid industrial accidents and nurture safety, lack of unilateral policies are raising the doubts on the safety aspects.

Health and safety policies must be part of how you function. You have a "responsibility of caring" to your stakeholders. Health and safety are complex issue and we cannot hope to cover it all the time. This study aims to give you some of the basic ideas. It is good for all the organizations to have a health and safety policy.

Objectives of the study

• To study the level of employee satisfaction on health and safety at steel industry

• To study the factors related to health and safetyinsteel industry.

• To study the measures to reduce workplace accidents in steel industry.

Scope of the study

The research study is conducted in steel industry in precise, to determine the relationship between health and safety measures and workplace safety. The study throws light through valuable suggestions to ensure the employees safety in the organization and can help the managements to find the weaker parts of workplace safety in the organization and also helps in converting those weaker part in to stronger by providing the optimum suggestions or solutions.

Limitations of the study

• The study is based on the feedbackof respondents, sometime may subject to bias.

• Time factor was the major problem for doing the study

• The study has been taken in steel industry; it may not be applicable to other industries.

Review Of literature

Veritas Consulting (2013), Health and safety legislation in the construction industry involves many rules and regulations. For example, the role of the Construction Design Management (CDM) coordinator as a requirement has been aimed at improving health and safety on-site.J. Sulaiman and M. Alaguthankamani (2012), conclude the company has given maximum effort and dedication to implement the labour laws and regulations and it has succeeded in implementing effective safety and health management considering the type of safety and health problems, accidents, employees and technology in its organisational settings and also good level of satisfaction among employees regarding health and safety has been achieved. Johanson B: Rask K: Stenberg M (2010), this study was to carry out a broad survey and analysis of relevant research articles about piece rate wages and their effects on health and safety. A total of 75 research articles were examined extensively and 31 of these were found relevant and had sufficient quantity to serve the purpose of this study. The findings of these relevant articles are summarized and analysed in the survey, more recent research show a clear interest for health, musculoskeletal injuries, physical workload, pain and occupational injuries. The fact that 27 of the 31 studied articles found negative effects of piece rates on different aspects of health and safety does not prove causality, but together they give very strong support that in most situations piece rate has negative effect on health and safety.

Tompa, EmileDolinschi, Roman MA: de Oliveira (2009), we reviewed the occupational health and safety intervention literature to synthesize evidence on financial merits of such interventions. A literature search included journal databases, existing systematic reviews, and studies identified by content experts. We found strong evidence that ergonomic and other musculoskeletal injury prevention intervention in manufacturing and warehousing are worth undertaking in terms of their financial merits. The economic evaluation of interventions in this literature warrants further

expansion The review also provided insights into bow the methodological quality of economic evaluations in this literature could be improved. Dee W. Edington: Alyssa B. Schultz (2008), The aim is to present the literature which provides evidence of the association between health risks and the workplace economic measures of time away from work, reduced productivity at work, health care costs and pharmaceutical costs. A search of PubMed was conducted and high quality studies were selected and combined with studies known to the author. A strong body of evidence exists which shows that health risks of workers are created with health care costs and pharmaceutical costs. A growing body of literature also confirms that health risks are associated with the productivity measures, the paper shows that measures of success will continue to be important as the field of worksite health management move forward. David E. Cantor (2008), The purpose of this paper was to review the literature and call for additional research into the human, operational and regulatory issues that contribute to workplace safety in the supply chain. This paper identifies several potential research opportunities that can increase awareness of the importance of improving a firm's workplace safety practices. This paper identifies 108 articles which informs, how the logistics and transportation safety has evolved. The paper identifies 14 future research opportunities within the workplace safety in the supply chain, that have been identified can have a positive effect on practitioners confronted with safety issues.

Parboteeah and Kapp (2007), in their study of ethical climates and workplace safety behaviour found that egoistic behaviour relates positively to injuries and negatively to safety in the workplace. Further they also discovered that benevolence and principled attributes relates negatively to injuries but positively to safety enhancing behaviour in the workplace. Finally they suggest that the life style of an individual significantly affects safety and health in the workplace. Michael (2006), states that employees frequently participate in safety planning through safety committees, often composed of workers from a variety of levels and departments. A safety committee generally meets at regular scheduled time and has specific responsibilities for conducting safety reviews and makes recommendations for changes necessary to avoid future accidents.Carder, B. & Ragan, P.W (2003), Safety climate is considered to be the precise indicator of overall safety culture while safety management practices display the safety culture of top management and as a result, good safety management practices are reflected in enhanced safety climate of all employees. The term 'culture' and 'climate 'have been used interchangeably in the literature to reveal employee's attitude towards safety.Cheyne, A., Oliver, A., Tomas, J.M., & Cox, S. (2002), have demonstrated that effective safety management improves level of safety in organisation and thus can be seen to decrease damages and harm from incidents.

Vassie & Lucas (2001), Effective training assists workers to have a sense of belonging and thus, is more accountable for safety in their workplace. In addition, a company objective and communication of the objective to all workers is the crucial aspect of effective health and safety management as lack of communication may hinder employee involvement."Amweelo (2000), his study explains that a study highlighting statistics gathered from Namibian workplace on common causes of workplace incidents revealed that the most common incidents at the workplace occur more often due to ordinary negligent human activity than use of dangerous machinery or substances. This also indicates the significance of the role played by individual workers in ensuring safety and health inthe workplace.

Ensuring a safety and healthy work environment is the primary responsibility of every employer. It shows their sensitivity to employee needs and rights. Accident prevention is an additional bonus. Cost associated with sick leaves, disability payments, replacement of employees who are injured or killed could be avoided. Through effective safety and health programmes, the physical and emotional well-being of employees may be preserved and even enhanced. Not surprisingly, the health and safety record in India is very poor. The large

majority of workers work in inhuman working conditions.

Research Methodology

Research design

The research design of this study is Descriptive.

Population of the study

The population for this study is the 120 employees working in steel industry of Ernakulam district.

Sampling

The sampling technique used for the study is convenient sampling

Sample size

Sample size for this research is 120 employees

Instruments Used for the study

Questionnaire

Analysis Of data

Table 1: Risk evaluation

Categories	Frequency	Percent
Strongly disagree	18	15
Disagree	28	24
Neutral	10	8
Agree	10	8
Strongly agree	54	45
Total	120	100.0

15 percentage of the respondents strongly disagreed on this point, 24 percentage disagreed, 8 percentage remained neutral, 8 percentage agreed on this point and finally 45 percentage strongly supported this point.

Table 2: Registration of the premises

Categories	Frequency	Percent
Strongly disagree	16	13
Disagree	12	10
Neutral	18	15
Agree	44	37
Strongly agree	30	25
Total	120	100.0

13 percentage of the respondents strongly disagreed on this point, 10 percentage disagreed, 15 percentage remained neutral, 37 percentage agreed on this point and finally 25 percentage strongly supported this point.

Table 3: First aid provision

Categories	Frequency	Percent
Strongly disagree	44	37
Disagree	18	15
Neutral	15	12.5
Agree	10	8
Strongly agree	33	27.5
Total	120	100.0

37 percentage of the respondents strongly disagreed on this point, 15 percentage disagreed, 12.5 percentage remained neutral, 8 percentage agreed on this point and finally 27.5 percentage strongly supported this point.

Table 4: Fire certification

Categories	Frequency	Percent
Strongly disagree	21	18
Disagree	14	12
Neutral	18	15
Agree	12	10
Strongly agree	55	45
Total	120	100.0

18 percentage of the respondents strongly disagreed on this point, 12 percentage disagreed, 15 percentage remained neutral, 10 percentage agreed on this point and finally 45 percentage strongly supported this point.

Table 5: Insurance policy

Categories	Frequency	Percent
Strongly disagree	22	18
Disagree	18	15
Neutral	26	22
Agree	24	20
Strongly agree	30	25
Total	120	100.0

18 percentage of the respondents strongly disagreed on this point, 15 percentage disagreed, 22 percentage remained neutral, 20 percentage agreed on this point and finally 25 percentage strongly supported this point.

Table 6: Hazardous materials

Categories	Frequency	Percent
Strongly disagree	48	40
Disagree	18	15
Neutral	19	16
Agree	22	18
Strongly agree	13	11
Total	120	100.0

40 percentage of the respondents strongly disagreed on this point, 15 percentage disagreed, 16 percentage remained neutral, 18 percentage agreed on this point and finally 11 percentage strongly supported this point.

Table 7: Hygiene and cleanliness

Categories	Frequency	Percent
Strongly disagree	12	10
Disagree	22	18
Neutral	26	22
Agree	30	25
Strongly agree	30	25
Total	120	100.0

10 percentage of the respondents strongly disagreed on this point, 18 percentage disagreed, 22 percentage remained neutral, 25 percentage agreed on this point and finally 25 percentage strongly supported this point.

Table 8: Accidents reporting

Categories	Frequency	Percent
Strongly disagree	15	12.5
Disagree	30	25
Neutral	14	11.66
Agree	20	16.67
Strongly agree	41	34.17
Total	120	100.0

12.5 percentage of the respondents strongly disagreed on this point, 25 percentage disagreed, 11.66 percentage remained neutral, 16.67 percentage agreed on this point and finally 34.17 percentage strongly supported this point.

Suggestions

From the above-mentionedstudies suggestions regarding the components of health and safety policy are mentioned below;

1. Risk evaluation

All organizations should assess systematically any potential risks of hazards to stakeholders. Doing a risk evaluation shows that you have considered all possible hazards and implemented methods of avoiding accidents.

2. Registering your premises

Organisations are supposed to register with the concerned departments and maintain the prescribed standards.

3. First aid provision

Organizations will need different first aid arrangements according to their size and activities. As a basic facility you must have someone who has basic first aid knowledge and is available to take charge in an emergency.

4. Fire certification

Every business is required to register with the fire service who will issue a fire certificate.

5. Insurance policy

Insurance with proper coverage is necessary as it ensures your organization is covered in the event of an accident, but it is complicated so seek advice.

6. Hazardous materials

There are rules which require you to do an assessment of any materials such as chemicals, that are used on your premises which are hazardous to health and the organisations are supposed to strictly follow the same to ensure the safety and security of the stakeholders.

7. Hygiene and cleanliness

If your organization have specified measures regarding clean work area and equipment sustainable premises, suitable arrangements for food waste and so on, it would be very much useful.

8. Report accidents and incidents

It would be good tohave a systematic accident reporting procedure, that would be helpful in avoiding replication of the similar in future and helpful in improvising safety and health measures.

Organisations' sincerity and effortsoften reduce accidents. Instructing supervisors to reportdeviations and informing employees to work safely is necessary. If everybody in the firm believes top management isn't serious about safety states, things will not be under control anymore. Historically good safety records are partly due to an organizational commitment to safety which is evident in their measures. This includes safety efforts giving safety matters high priority and including safety training for new workers. Ideally health and safety is an unavoidable part of the organisational system and a part of everyone's day to day responsibilities. The organisation should try everything practical to eliminate or reduce accidents and injuries.

Conclusion

Organisational focus on labour safety can ensure higher morale and productivity in the work place. This is because of the perception that the organisation truly cares about the health and wellbeing of its employees, thus creating a sense of belongingness to the organisation. Increased productivity as it correlates to safety and morale is a difficult index to measure, but futurist organisations realise that it doesexist and therefore justify the cost of their safety programs as compared to the productivity benefits that they provide. In contrast to measuring productivity as it relates to safety, the indirect cost of employee injuries is much more measurable. For example, a serious injury on the work site can shut down a project for long period of time while it is under investigation, and loss time equals loss of money. In addition, there is the cost of lost productivity of the affected employee, insurance premium hike, cost of replacing the injured worker, cost of training the newly joined worker and potential fines. The expense can be so severe that they may make it difficult to run an organisation. It would be really appreciable if the organisations can design their safety and health policies keeping all these factors in mind.

Questionnaire

1. Risk evaluation mechanism is effective
   ☐Strongly Disagree ☐Disagree ☐Neutral ☐Agree ☐Strongly Agree
2. Registration of the premises is satisfactory.
   ☐Strongly Disagree ☐Disagree ☐Neutral ☐Agree ☐Strongly Agree
3. First aid provision is effective
   ☐Strongly Disagree ☐Disagree ☐Neutral ☐Agree ☐Strongly Agree
4. Company got fire certification.
5. ☐Strongly Disagree ☐Disagree ☐Neutral ☐Agree ☐Strongly Agree
6. Insurance policy is with sufficient coverage
   ☐Strongly Disagree ☐Disagree ☐Neutral ☐Agree ☐Strongly Agree
7. Employees are not exposed to hazardous materials.
   ☐Strongly Disagree ☐Disagree ☐Neutral ☐Agree ☐Strongly Agree
8. Company has good hygiene and cleanliness practices.
   ☐Strongly Disagree ☐Disagree ☐Neutral ☐Agree ☐Strongly Agree
9. Organization’s accident reporting system is effective.
   ☐Strongly Disagree ☐Disagree ☐Neutral ☐Agree ☐Strongly Agree

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ISSUES AND PROSPECTS OF RURAL CRAFTS IN WEST BENGAL:AN OVERVIEW

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ABSTRACT

The cultural heritage of a nation is embodied by handicraft products of its own and West Bengal is very popular in terms of its rural art and crafts. Most of the rural people of West Bengal engage in the production of craft products and various small and cottage industries depend on it. Though the central Government and the Government of West Bengal implement various policies for the financial protection of the artisans, the result is yet not satisfactory. Governments and non-government projects focus on various financial schemes for the artisans, but most of them are yet unaware of the policies. Indian handicraft products have a high rich value in the international market, but artisans, the steersman of this sector have no fame and recognition for their craftworks and they live without identification on their artwork. This research work concentrates on the supervision and administrative regulations of government or non-govt. sectors and policy enactors to identify various modes, processes, and attempt to enhance the earning opportunities of the artisans, to build realization and inspire them to adopt changes in the domestic and international market, and to evaluate the necessity of training, facilitation, renovation, and organizational support.

Keywords: *Rural crafts, Tourism, Heritage, Cultural, Handcrafted products.*

Introduction

West Bengal is popular for its cultural heritage that covers handcrafted products that make up for a large scale of conventional rural crafts accomplished by the rural people in the villages. Some districts of Bengal are famous for their handicraft products, such as Bankura for its terracotta art and craft products and Dokra for arts. Districts like Panchmura and Bikna are famous for these craft products. Dariyapur village of Bardhaman also famous for its Dokra crafts which are widely populated as 'Dokra of Bengal'. Among the world.Chau mask of Purulia district makes them popular into the craft market. Charida village is special expertise in the production of this popular mask. Gomira mask of South Dinajpore is a very attractive craft product for its special design which is produced in Kushmandi village. East and West Midnapore are also very famous for their craft products like mattresses (Sitalpati). Pingla, Naya village, Chandipore are the main centre for the production of Pattachitra. Chaumask, Gomira mask, mattress(Madurkathi), terracotta art and crafts, and pattachitra get intellectual property right i.e. G.I. tags from the Government of India for their special features, unique characteristics, distinct identification, and artistic values. Terracotta art and craft of Bankura district also get their patent right for using of their own logo on their craft items.

In the current scenario, the potential and uprising markets i.e. consumer market, fashion market, luxury product market needed hassle-free, pollution-free, environment-friendly production. In this context, rural crafts play a vital role that requires low- investment but provides high export potentiality to expand their business into the global market. It also makes potential job opportunities for the youth. Due to internationalization swap in market tendency and other determining elements, many of these handicrafts and performing arts do not discover adequate volume in the current craft market or charm the viewers as a means of amusements. As a result, it has been very difficult for the section of old artists to turn on their antique rural art and crafts for their livelihood 3 faced problems due to the financial crisis of the artisans. Therefore, the young generation has become demotivated to continue the business of their inheritance and search for alternate earning opportunities, some of them also migrated for searching for jobs in another state. Insufficient knowledge of craft products among the people and low-income opportunities make distortion the efficiency of the artisans to continue their production. It led them inadequate business practices in the modern market.

Rural Crafts of West Bengal: Theoretical Background

The handicrafts sector has a rich and traditional offering for the world through its huge items offered by the artisans and the indigenous products. West Bengal is famous for several unique arts and crafts. Different types of clay dolls and handicrafts are famous in almost all the districts. Thousands of artisans in Bengal are involved in the production of bamboo & cane crafts. Dokra metal craft is regarded as one of the most famous arts of West Bengal. Tourism is the largest and fastest-growing services sector, which generates foreign currency inflow in the country. The handicrafts sector has a rich and traditional offering for the world through its huge items offered by the artisans and the indigenous products. Strengthening the handicraft sector ensures that tourists choose to buy more locally produced handicraft items.

West Bengal is very popular for its rural craft. Different types of rural craft in west Bengal are-Shantipur in Nadia district is popular for their forte and traditional thin saree and costume quality craft item. Dhaniakhali and Farasdanga in Hooghly districts are popular special dhotis and sarees. Begampur in the same district is also expert in loosely fabricated, feathery, and semi-transparent sarees. Murshidabad is popular for its Baluchari saree with a wide variety in the fashion, style, and quality of Bengal. Kantha Stich is an utterance of regional traditions, embellishment in West Bengal, Kanthas are habitually made by rural female persons on old cloths, mostly mushy, rejected dhotis and sarees. Kushmandi, Dinajpur are popular for their wooden mask which is popularly known as Gomira Mask. Charida in Purulia is an attractive place popular for its Chau Mask for, 150 years. Dokra in Dariyapur is very famous for its pre-historic, attractive folk designs and dynamic structures. Ghurni is a village of Krishnanagar that is famous for its clay dolls. Clay art at Kumartuli, the conventional Durga Goddess forming heritage is acquired and integrated by the carve, but at the contemporary, they have also rationalized the motif of the idol with their confined inclination also developed into the mandap. Natungram in Bardwan is the fulcrum of a wooden doll. Sholapith of the same district is also famous for their craft work. The conch-shell production is one of the ancient productions in West Bengal. Bankura, Bishnupur, Nadia, Malda, Murshidabad are famous for this craftwork. Bengal craftsman carries off high degree of expertise and adroitness in manufacturing brass and bell metal objects of distinct styles.

Terracotta has been the hieroglyph of man's first endeavor at artisanship. West Bengal is famous for its terracotta artwork. Bankura, Birbhum, Hooghly, are popular for their Terracotta artwork. Pattachitra canvas is a genuine artistic tradition of west Bengal. Bengal patachitra has numerous characteristic like Durga Pat, Medinipur Pattachitra, Kalighat pattachitra. The curlicue of the pot of Birbhum, Bankura, Bardwaman is also famous in the domestic and international market. Bamboo crafts are very earliest and native heritage in west Bengal. Bengal is the principal manufacturer of jute products like fancy dosser, jute-mix floor covering, garden pot curtains, bags, purses, bedsheets, etc. Chikankari is an embroidery type that is accomplished mostly by proficient women in West Bengal.

The famous art form of Bishnupur is its terracotta work. The exquisite craftsmanship of the terracotta artisans is evident in the Madanmohana Temple an ShyamRai Temple. The temple walls are richly decorated with the carvings of different aspects of Krishna's Life playing with Radha. One of the most expensive Baluchori silk sarees in India called BaluchoriSarees is weaving by craftsmen of this place. The silk strands are dyed separately and then put into a loom. Designs are woven with the help of a sarees of punch cards that are hung from the top of the loom. These punch cards are rectangular pieces of cardboard with hundreds of holes punched according to the design. Dokra was used to indicate a group of craftsmanship of nomadic type, scattered over Bengal, Orrissa, Madhya Pradesh were identified by their beautifully shaped and decorated metal products. The craftsmen have later settled down in some areas of Burdwan, Bankura, and Midnapur districts of West Bengal leaving their nomadic character.

The conch shell curving is one of the traditional arts of Bishnupur. Traditional artisans mostly belonging to SankhaBanik caste partake conch shell curving at Sankhari Bazaar, Malleswar, and Kadakuli. The artisans beautifully curve various mythological characters of Hindu pantheons on conch shells. Bell metals and brass metal crafts were found to be one of the oldest crafts in Bishnupur. Most artisans belonging to Karmakar caste are traditionally engaged in such metal casting. Artisans of Kaitypara, Kamarpara, Krishnaganj, Koilashtola, Gopalganjetc are traditionally engaged in brass and Bell metal works. Presently the artisans are organized under Bishnupur Branzeiers Co-Operative Society Ltd.

Wood curving is another important handicraft in Bishnupur. The artisans with dexterous hands make beautiful handicrafts and wooden horse of different sizes Pot and Dash Avatar Taash other important handicraft item that has foreign market demand.

Survey of Literature

According to Mukherjee (2013). the business of craft products in India face strong financial crisis to keep up their business in the competitive market. Craft Council of India (CCI) helps the artisans to survive into the market. According to Kasturi Gupta Menon, some craft products yet not produced due to lack of financial support, lack of awareness among people and poor promotional strategies. Proper marketing strategies and product assortments help the artisans to survive in the market. According to Uttara Gangopadhay West Bengal is very popular for their art and craft products which contains a high antique value, hassle-free and environment friendly features and represent local culture in the tourism industry. But now these products face tough conditions to keep up their existence for price hike in raw materials, transportations, labor costs, production costs, which are higher than the machinery products.

According to AIACA (2020) a lack of raw materials can be attributed to a breakdown of the supply chain of rural crafts. All artisans demanded capital supports from external sources where financial stress was palpable. They were found to be in need of financial support whether it be due to the paucity of raw materials, mounting inventory, canceled orders, or orders on hold. Associated with that aspect the payment of wages to the artisans is too low, i.e. 50% of enterprises paid wages to their artisans during lockdown, while 30% made no payments at all due to shortage of cash flow. As regards the status of production 40% artisans informed that their production activity had remained halted during the lockdown and had resumed. According to Kumar (2020) after the Covid-19 pandemic situation the reality is that the handloom and handcraft sector in India needs a way to survive. A superior handloom product aesthetically appealing as well as eco-friendly cannot be sold out of compassion but needs the modern technology of marketing and retailing. This is the only way to survive in a competitive market. In an effort to create interest in Indian crafts internationally the “Vishwakarma” exhibitions were exhibited through the festivals of India in the most prestigious museums around the world capital. But after the pandemic intellectual property rights face a real threat. It requires a little investment in production infrastructure or skill development.

According to Mukherjee (2013) the Crafts Council of West Bengal (CCWB)help to develop the awareness programme and promotional strategies of craft products by celebrating various festivals. They also help to survive Bengal art of Midnapore into the market. Ray. et al (2012) pointed out Rural tourism and its Impact on Socio- Economic Condition: Evidence from West Bengal, India in the context of Handicraft development at Kamarpukur .

Florence (2005) review suggest strategic measures to improve markets for village crafts, often supply of scattered, insufficient and unsystematic data on production and sales; will be the major obstacles for them to develop quantitative marketing strategies. Lack of market awareness is the main obstacle for any village enterprises to put up their products in urban markets Sudha and Krishnaveni (2012). The handicraft activities are especially carried out in Kashmir valley which is called the home of handicraft goods and has earned a unique place in the world of handicraft scenario. The sector makes conspicuous contribution in

sustaining export trade of the state Upadhaya (1973). According to Datta & Bhattacharya (2016), Handicrafts business constitutes concept selling rather than mere product selling. Design and development of products constitute the soul and substance for the sector. These products focus on the ultimate consumer. The ingenuity of the designer as well as the craftsman will enable traditional crafts to be viable in a contemporary market.

Again Laha Roy (2016) for the promotion of rural crafts into the international market Mamata Banerjee, the chief minister of west Bengal make tie up with UNESCO and held an exhibition in Paris 2015 to demonstrate the uniqueness of the craft product into the international market. According to Kumar (2020) after the pandemic situation the reality is that the handloom and handcraft sector in India needs a way to survive. A superior handloom product aesthetically appealing as well as ecologically friendly cannot be sold out of compassion but needs the modern technology of marketing and retailing. This is the only way to survive in a competitive market. To create interest in Indian crafts internationally the "Vishwakarma" exhibitions were exhibited through the festivals of India in the most prestigious museums around the world capital.

According to Ganguly et al.(2020) Kamala, one of the employees of CCI flagship counter, Chennai are engaged in demonstrating pictures of the handicraft items with the consumers in India. It also helps the artisans into the covid-19 pandemic situation which also motivates the people to bring about the craft product into their home. CCAP has implemented various policies for the betterment of the artisans and also for their craft products like IKKAT fabric napkin. Wooden candle holder, tholu bommalata, leather puppet, Etikoppa napkin holder, terracotta diya etc. A Hyderabad based NGO, Chitrika take initiation for the improvement and upgradation of the crafts people and their products into the festive season which may help them in the covid-19 pandemic situation. The Central Cottage Industries Emporium, Chennai, an undertaking of Government of India took some initiation for the promotion of the craft product at the festive season like silver enamelled elephants of Baranasi, tea, miniature painting of Rajasthan, Dhokra from Odisha, which motivate the crafts people mentally and as well as financially also. The CCIE which has been playing a significant role in the revival of languishing crafts, offers this service to support the craftsperson. But after the pandemic situation the intellectual property right of the artisans face a real threat. It requires low investment in production by improving infrastructure or practical knowledge development.

Chakraborty and Biswas (2018) depicts that, the rural areas where tourism has just been started have noticed the huge potentialities of the craft product markets due to the relationship between beautiful craft product manufacturing and livelihood of the rural people. The concentration of the international tourism market could gain the attention, if the govt. takes initiation to provide the required infrastructure for rural crafts marketing. Under the Public-Private-Partnership (PPP) model the concept of societal outstrip craft tourism is already introduced in these crafts villages. This is evaluated by UNESCO for its contribution to direct communication with the buyers and artisans of craft products. Apart from the reinvention of the handicrafts, rural tourism represents its enormous effect by creating a number of employment opportunities. This is very important for the fostering of rural women and ultimately motivate the young generation to focus upon their ancestral trade practice, which they abandon due to lack of marketing opportunities. According to the project report of MSME of West Bengal handicraft product of Bengal is very much popular for its beautiful cultural trend, uniqueness, and artistic values. These products also provide financial support to a financially challenged society, where more than or equal to 50% women are engaged to produce newly and eye-catching craft products. It is low-investment product and near about 5-6 lakhs rural people are engaged to produce it. The MSME department of west Bengal make tie up with UNESCO to give much concentration on the betterment and creation of job opportunities, continue production of craft products under small scale industries, and providing better export facilities into the international market. West Bengal government

make craft hubs across the state with the help of UNESCO to develop the promotional strategies of craft products which help a large section of poor artisans also. All these initiation of west Bengal government and UNESCO motivate poor artisans to continue their artistic activities and production.

Objectives

1. To explore the evolution of rural craft of West Bengal.
2. To study the role played by the state government, NGOs and local bodies for the marketing and promotion of cultural tourism in the state of West Bengal.
3. To analyze Strength Weakness Opportunity and Threats of rural craft in West Bengal

Methodology

Data collected for the study are from secondary sources: West Bengal Tourism Development Corporation, Statistical Department, and Journals and magazines, Reports of Ministry of Textile.

Rural crafts of West Bengal have high aesthetic value as well as antique in character to attract the national and international tourists towards its rural areas. As a result, it is one of the important elements to grow the rural tourism business in Bengal. The promotion and publicity of handcraft products spread the culture of Bengal. West Bengal Govt. taken imitative to make crafts hubs associated with UNESCO into the various rural parts of Bengal which are not still popular and aware by the tourists. Though rural crafts are very antique in nature it faces a lot of problems to continue the production. Day by day the cost of raw materials increases. These products are very labour intensive, There is a lack of proper training and formal education for the artisans. They use poor or old handheld technology to produce the craft products, as a result there is the least chance of mass production of these. The major problem of this craft production is financial crisis. No sponsorships are easily available for these products. Rural banks are often always does not afford the loan facilities to the artisans at a low rate of interest, as a result they lend money from the borrowers at a high rate of interest which make demotivation to the artisans for their production. Sometimes dishonest intermediaries purchase the craft products from the artisans at a very low rate but sell them at a high price to the customers, which is also harmful for the craft production. Promotional strategies and marketing opportunities of these craft products are too kin. But there are various opportunities also exist i.e. if the market of craft products grows then it will create employment opportunities for the youth of Bengal. It also helps to get a high chance to enter into the international market. It should be very possible if our Bengal govt. ties up with UNESCO for the betterment of craft products. With the help of the rising market opportunities creation of online marketing, catalog marketing helps to promote craft products into the national as well as international market. But the intellectual property rights of the artisans are in question of threat.

Now. there is no security about it to protect the legal rights of their production. Sometimes cancellation of orders due to the pandemic situation makes them worse. The present civilization is highly dependent on machine-made goods which are low-cost-oriented as well as less time-consuming. As a result, craft products are quite unable to fight into the competitive market to survive. An economic recession, jobless situation, cut expenditure, the epidemic, and ensuing lockdown have had a destructive effect on the rural crafts sectors in West Bengal. Artisans and weavers are the third largest section among the poor. Most of their creations are unessential, which could be the grounds why their agitation is acquired at very low limpidity instead of the come for 5Vocal for Local and “Atmanirbhar Bharat”. In the pandemic situation of covid-19, product manufacturing has been totally postponed. A vast inhibited register has accumulated. There have been no sales through exhibitions, trade fairs, and tourist markets. A large number of orders are canceled domestically and internationally due to a lack of transportation, communication, and supply chain management system. Most artisans in Bengal meet financial crisis due to this pandemic situation. They have neither enough food to meet their daily needs nor enough savings for medical expenses. Now no finance companies, banks, are interested to make sponsorships for their artistic culture to

continue their handcraft production. As a result, most of the artisans are unable to continue their production. Most of them resume their work in agriculture or migrate towards another state. It has been observed that financial crisis is one of the main problems of handicraft production is a financial crisis as the artisans are very poor, they do have not enough money to carry on their production. Lack of sponsorship, lack of financial support from any other financial organizations led them demotivated to continue their production. No financial securities they get from neither govt. nor any other organizations who are interested to promote the products into the markets. Most of the artisans get very low wages from the organizations under which they work for production. Those artisans who make and sell their products on their own get very little profit rather than the machine-made products. In the pandemic situation, only 50% of artisans get half of their wages whereas 30% will not get any wages due to financial crisis. Cancellation of orders due to this situation also led them to postpone their production. No concrete promotional strategies are to be adopted for the craft products of West Bengal. Though there are some craft hubs established by the West Bengal government in collaboration with UNESCO, a handful no. of tourist knows about the hubs. There is the least awareness about online marketing and catalog marketing for promoting handicraft products. There is no intention among the marketer of this product to promote via social media, electronic media, and outdoor media also. Uses of poor technology: as most of the artisans of the handicraft products are women, they use poor and old-age technology to continue their production, this led to high production cost and is indeed time-consuming. They are also unskilled and unaware of modern technology due to a lack of training facilities too. For this, it is stern to survive in the highly competitive market.

The initiation took by Central Govt. & State Govt for promoting Rural Crafts

The Government launched the Ambedkar Hastshilp Vikas Yojana (AHVY) in the year 2001-2002 with a view to mobilizing the artisans into Self Help Groups. The Government has identified and adopted 90 clusters across the country which will also cover aspirational districts, women clusters, weaker sections, and export potential clusters. According to the report of the Ministry of Textile 2019 fund sanctioned in the year of 2016-17 Rs. 10.19 Lakhs and 50 artisans were benefited whereas in the year of 2017-2018 it was Rs. 1.50 Lakhs and 500 artisans were benefited and no fund has been sanctioned in the year of 2018-19 in West Bengal. Per Mega Cluster Scheme includes employment generation and improvement in the standard of living of artisans. This program follows a cluster-based approach in scaling infrastructure and production chains at handicraft centers, specifically in remote regions, where the sector is largely unorganized and has not evolved to adopt modern developments. Under this scheme, clusters are identified by the Handicrafts Mega Cluster Mission (HMCM) via central and state agencies for upskilling and development. According to the data of the Ministry of Textile (HMCM Project), there are two types of projects Green Field Project and Brown Field Project. In West Bengal, there are 4 greenfield projects and Brown Field Project is Nil. The Directorate of Textiles (Handlooms, Spinning Mills, Silk Weaving & Handloom Based Handicrafts Division) under the M & SSET Department, Govt. of West Bengal, is the nodal agency to look after the development of the Handloom sector in the State of West Bengal. There are numbers of schemes are given below: Handloom clusters development projects, West Bengal Handloom Circuit, 2014, Tantisathi, 10% price subsidy on hank yarn under Mill Gate Price Scheme, production of Cheaper Variety of Sarees, Establishment of State participation in Share capital support to the West Bengal State Handloom Weavers Co-operative Society Ltd. With a view to creating robust human resources for the textiles sector, Ministry of Textiles has been implementing various skill development schemes and programs since the financial year 2010-11. Need-based skill up-gradation programs for handloom workers in technical areas viz. weaving, dyeing, designing, etc., earlier conducted under National Handloom Development Scheme, Comprehensive Handloom Cluster Development Scheme (CHCDS) are now undertaken under Samarth

scheme. Further, the Government imparts various training programs and schemes for promotion, development, and generation of employment for artisans of the handicraft sector under the "National Handicraft Development Programme (NHDP)" and Comprehensive Handicrafts Cluster Development Scheme (CHCDS) to provide sustainable livelihood opportunities to the artisans. A total of 11.14 Lakh persons have been trained under the scheme of Comprehensive Integrated Skill Development Scheme(ISDS), Ministry of Textile, Govt. of India. Under this scheme of ISDC 269 persons have been trained, 150 persons are in training, and 104 were placed in West Bengal whereas in Tamil Nadu is the highest position 6337 have been trained 4114 persons are in training and 4738 were placed. As per Research and Development Scheme initiative was introduced to generate feedback on economic, social, aesthetic, and promotional aspects of crafts and artisans in the sector. An in-house research and development team conducts surveys and studies on crafts and their production challenges. These schemes fall under the government's National Handicraft Development Programme, which is being implemented by the Office of the Development Commissioner of Handicrafts.

The Rural Craft Hubs have been a significant contributor in building capacity, creating direct market linkage, creating exposure for rural artisans to national and international markets and, in the process, helping them get rid of middlemen, making the villages cultural destinations, and strengthening grassroots entrepreneurship.

Micro, Small & Medium Enterprises

The Directorate of Micro, Small & Medium Enterprises under the Department of Micro, Small & Medium Enterprises and Textile, Govt. of West Bengal, is an important agency for the growth and promotion of Micro, Small & Medium Enterprises in West Bengal. The main objective of MSME is to facilitate the growth of the industry and to promote handicrafts. The project was started by the central government in 1978 with the objective of promoting small, tiny, cottage, and village industries in a particular area.

Biswa Bangla

Biswa Bangla was launched in the Synergy MSME Conclave 2013, at Milan Mela on 16th September 2013. The brand stores are being set up to revive the handloom and handicrafts industries of the state. West Bengal has a major presence in the MSME sector in the country.

Bangla Natok Dot Com

Banglanatak dot com is a social enterprise that works at the grassroots with a mission to foster pro-poor growth and safeguard the intangible cultural heritage of Bengal. The organization uses a culture-based approach for development and community skill empowerment.

Skill Development and Product Innovation

The craft persons are being oriented on making high-quality diversified and new products suiting current market demands and trends using their traditional skills. Qualitative improvement through technical inputs is also being targeted in the skill development workshops. Workshops are done with the craftspersons also targeted increasing marketability through innovation in existing product ranges like reducing the size of the wooden mask, Sitalpati using reactive dye, and also the development of new product range like utility items Dokra, wooden doll and Terracotta. Range of craft has also been developed for interior decoration. The old traditional style of Sujni Kantha was revived in these workshops besides introducing modern designs in Kantha embroidery.

Cultural Tourism Hubs

The rural craft hubs are also being developed aiming at evolving the craft villages as tourism destinations offering an authentic experience of indigenous life. Village festivals are being organized to create local 'recognition', attract visitors, develop new partnerships including media, and benefit the larger communities around craft villages.

Entrepreneurial Skill Building

Entrepreneurial skill-building workshops are held to develop cultural enterprises at grass root and instill the idea of working as a collective business. The workshops also sensitize the craftspersons on working towards addressing social concerns like gender issues, environmental health.

Infrastructure Development and Technology Upgradation

All the hubs will have a Common facility Centre equipped as per community expectations and requirements. West Bengal Khadi and Village Industries Board (WBKVIB) is providing the necessary hardware support. A new furnace is being procured from NML, Jamshedpur to replace the existing furnaces.

Reaching out to a Wider Market

Participation of the craftspersons in different national and international fairs and exhibitions is being facilitated.

SWOT of Rural Crafts in West Bengal

The SWOT analysis of the pre-present-post pandemic situation in West Bengal is as follows:

S=Strengths

- Aesthetic Value
- Attract international tourists
- Influence rural tourism
- Make publicity of Bengal's culture via rural crafts

W=Weakness

- Rising costs of raw materials
- Labor intensiveness
- Mass production deficiency
- Lack of marketing opportunities
- Financial crisis
- Lack of sponsors
- Poor technology
- The poor educational standard of the artisans
- Lack of training opportunities for the development of skills

O= Opportunities

- Job opportunities
- Opportunities to enter into the international market
- Make shows globally tie-up with UNESCO
- Creating online marketing strategies

T= Threats

- Intellectual property rights
- Competition between machine-made products and handmade products
- Cancellation of orders
- Survive into the competitive market

Table 1: Issues and Challenges of Rural crafts in west Bengal

Parameters	Issues	Challenges
Financial	○ Job opportunities ○ Business opportunities	○ Required financial support from bank and any other financial organisation ○ Required sponsorship
Marketing	○ Growing opportunities of online marketing, catalogue marketing, digital marketing via electronic media	○ Lack of awareness about the promotional strategies of online marketing ○ Poor artisans have no smart phones ○ Lack of knowledge about the uses of internet and online business ○ Lack of knowledge about how to exhibit their own product via social media ○ Appearance chances of intermediaries are too high
Economical	○ Creation of demand and make adequate supply of rural craft to the customers ○ Technological advancements ○ Artisans benefits	○ Demands of machine-made goods are high rather than the handicraft product ○ Price hike of raw materials ○ Low wages paid to the artisans ○ Getting very low profit ○ Old technology used for production of handicraft product
Educational standard	○ Educated artisans make pattachitra superfluous	○ Educational standards of the artisans are too poor ○ Most of the artisans are only passed out of primary and secondary level ○ Low intention for getting higher education

Training opportunities	○ Proper training polishes the artisans craftmanship ○ Increasing the knowledge for the betterment of their art work	○ No training centre or schools or institutions to be established for the training of the artisans ○ One or two expert artisans teach the potential artisans on paid basis
Govt. initiation	○ Established craft hubs in various districts in west Bengal ○ Provide best artisans award and presidential award for the best art work of the artisans ○ Central govt., State Govt. take some policies for the artisans	○ Lack of awareness about the govt. policies for the artisans

Conclusion

Rural crafts of West Bengal are a heritage, which highlights the main culture of West Bengal. Every marketer, as well as Govt., various NGOs who worked on the promotion of rural craft products, should develop five essential elements. The researcher suggests that everybody should give much concentration on the Employee as the craft products are very much labor-intensive. At first, it is needed to sort out the financial crisis of the artisans. If various Gramin banks, financial organizations, Central banks, state banks provide them financial support at a very low rate of interest for the long term it will be very fruitful for their business as well as their production. West Bengal govt and central govt also should give assurance, financial securities, and health securities to carry on their productions and business into the rural tourist markets. Government should provide the best training program for the development of the skills of the artisans. It is possible through arranging various development and training programs with the collaboration of MSME and UNESCO. Different training centers are to be established for giving better training to the artisans free of cost. The next very important thing is Earning facilities and earning securities of the artisans. Government should first give them proper security on their intellectual property rights with the help of law. They need also financial securities in their production as well as distribution of their products. The state govt should provide insurance facilities for their production work. If the artisans get fixed salaries or wages from the govt, it will ensure highly to them to get financial securities and benefits to carry on their creativity. Expansion of markets of the rural crafts into the national as well as international markets is another important consideration. Though there are some craft hubs in the rural area of West Bengal the creation of demand for these handicraft products in the international market is a very important factor. If everyone sends gifts by these craft products in various rituals to their beloved ones or family and friends it will get a high chance to expand crafts markets around the world. It will help the artisans to enter into the large-scale industry. As a result, both large-scale and small-scale industries will be benefited from these products. Besides this marketers should develop online marketing, catalog marketing, and supply chain management facilities to develop the craft product business. Who will execute the craft product? It is the main question. A very few no. marketers show interest in these products. Various NGOs, various low-profit organizations, especially the West Bengal govt should take the initiation to execute the craft products properly into the tourist markets as well as various domestic and international markets. And the next very important question is how to execute the craft products? Various trade fairs, exhibitions, fashion shows, etc arranged nationally or internationally should give the chance to the artisans to participate there with no charge facilities. Evolution of the craft products is another major issue. As a large number of scarce raw materials, capital, labor are the constraints for the production of handicraft products, but evolution is needed to survive in the competitive market. Various types of training facilities at a free cost will help them to make something new. If it will be developed then the prospects of the craft

products will be developed, and it will make the high motivation for the next generation artisans to carry on our traditional work into the market. West Bengal government establishes some policies for the development of rural craft products but there has some lack of intentions to implement those policies properly. So, it is an emergency to provide much effort for the betterment of the craft products as it is working as a tool of the Rural Tourism industry.

Recommendation

The artisans of the craft products make super quality, newly invented, and newly designed handicraft products to fight into the competitive market, and also keep up their businesses into the growing market. For this, it is needed to develop practical knowledge of the target artisans by arranging workshops, seminars. Various seminars, technical workshops help the artisans to develop their technical know-how like how to make small size Gomira masks, Sitalpati, wooden dolls, dokra products, terracotta products which should be pocket friendly and also attractive in the decoration of drawing room, bedroom, puja room and any other places of houses. If various financial organizations like banks, financial intermediaries provide financial substance at a minimum interest then they will be motivated to continue their business. For this Govt. should establish some financial organizations only for the artisans. The ancient conventional design of sujni Kantha was brought back in these seminars other than launching contemporary style in kantha embroidery. The hubs of the handicraft products must be extended to introduce the handicraft products of rural areas as tourist markets contributing bona fide occurrence of native existence. Communal carnivals are being arranged to produce regional identification, charm travelers, start a new collaboration with media, and gain the far-reaching fraternity about craft villages. Commercial skill improving seminars are hold on to improve educational endeavors at the working class and introduce the proposal of mechanism as a communal trade. The seminars also stimulate the artisans on performing towards directing communal apprehension like sexual matters, ecological soundness. There are enough opportunities for rural arts and crafts as a major tourist attraction for the state both from foreign and intrastate tourists if a professional approach can be innate by the state Government. Needless to mention that arts and crafts are always the sources of attraction for the tourism industry. Moreover, road infrastructure and transportation can be improved to reach the art and craft villages of the state of West Bengal.

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SUSTAINABILITY OF INDIAN JUTE INDUSTRY – A STUDY BASED ON THE FINANCIAL PERFORMANCE OF SELECT JUTE MILLS OF INDIA

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ABSTRACT

Jute industry also known as the Golden Fibre Industry is one of the most important traditional and oldest industries in India which plays an important role in the socio-economic aspect of India. The jute industry as a while indicates both raw jute as well as jute goods. It includes the entire value chain i.e. starting right from harvesting of jute to processing of raw jute for preparation of different jute products like gunny bags, jute handicrafts and other diversified jute products. Due to a rise in awareness towards the environmental impact of clothing and textile production, people, now-a-days are preferring eco-friendly and sustainable textiles and the demand has increased due to their various benefits. Sustainable textiles are textiles (or fabrics) that are grown and created in an environmentally friendly way, using minimal chemicals as there will be less health problems that are associated with chemicals such as headaches, allergies, skin irritation, and respiratory problems. The eco-friendly clothes are not only beneficial for a people but are also excellent for the environment. These fabrics include organic cotton, bamboo & linen. For this the jute textile industry is considered to be one of the producers of eco-friendly products and occupies an important place in the national economy of India. But due to several factors like increased usage of synthetic fibre, financial distress, there are many jute companies who are closing down their operation though there are ample opportunities for their growth with the help of public and government initiative. Its contribution to the jute industry as a raw material plays an important role. It also provides a lot of employment opportunities to more than 4,00,000 people and earns valuable foreign exchange. India is using the latest technologies for jute production and is holding the maximum market share in terms of production, consumption and export in the world. The major jute producing states in India are West Bengal, Assam, Bihar and Orissa. Out of these West Bengal produces more than 50% of the total production in India. But due to several factors many jute companies have closed down their operation in recent past. For this jute industry in West Bengal is often called the 'sunset industry' and is claimed to be a dying industry as it has lost its glory in terms of earning foreign exchange and declining employment opportunities. It is also said that this industry is unprofitable and there lies excess workers with decreasedproduction per worker.With the backdrop of huge growth in textile industry in India and the immense potential for jute textile in international market, this paper makes an enquiry into the financial health of the jute textile sector in India to analyse the sustainability of the jute industry of India.This paper closely analyses the financial performance of some select jute companies in India to find out whether the financial performance can affect the sustainability of the jute industry of India. The analysis is carried out on the listed mills of India for a period of 10 years based on the secondary data.The study reveals detail findings on the different aspects of financial performance of these selected jute mills to analyse their sustainability.

***Keywords**: Sustainability, synthetic fibre, financial performance, Jute Industry, Technological innovation*

1. Introduction

Environmental concern is at its peak now a days and people of any country is more keenin environmental, sustainable and eco-friendly products. Jute industry, also known as the Golden Fibre industry is one of the oldest and traditional industries in India and is a very important crop of eastern India. It is very cheap and a most versatile fibre which is used for sacking and cordage. It is very eco-friendly and 100% biodegradable. It was first established in the year 1854near Rishra, in the west bank of the river Hooghly. Jute industry, also known as the Golden Fibre industry is one of the oldest and traditional industries in India and is a very important crop of eastern India. It is very cheap and a most versatile fibre which is used for sacking and cordage. It is very eco-friendly and 100% biodegradable. It was first established in the year 1854 near Rishra, in the west bank of the river Hooghly. It plays an important role in packing and packaging of agriculture and industrial products. It also gives a lot of employment opportunity to a sizeable number of people and helps in earning foreign exchange.

Another important aspect of jute Industry is that it is very much predominant in the eastern part of India and West Bengal holding the maximum share in terms of jute production, consumption and export producing 10033 thousand bales of Jute in the year 2017-18. The state alone produces more than 75% of the jute the country produces. Jute is grown in major

parts of lowerGanges plains, the Irrawaddy, the Amazon, where there is flood plain and alluvial soils. It is pre-dominant especially in the districts of Midnapur, Burdwan, 24 Paraganas, Malda, Murshidabad etc. Other important factors for jute industry are listed below:

- West Bengal having the highest number of mills and there lies no reason for shut down of those mills and explains its affordability;
- Jute is an eco-friendly, bio degradable and pollution-free product;
- With the progress in time, production, consumption, and export of jute goods are increasing;
- It has a high tensile strength that illuminates its durability,
- It does not involve use of any kind of synthetic element or chemical like plastic as they are made of high-tensile fibres strung into strong strands and is not harmful for the environment.
- It is the best alternative to single-use plastic
- It has Zero Dependence on Non-renewable Sources
- Jute goods are very useful for packing and packaging;
- It has the capability to earn high foreign exchange and contribute to the national economy;
- It has the potential for giving employment to huge number of workers.
- It has Long-term Viability compared to plastic as plastic is a single time use and jute can be used multiple times
- It is versatile as apart from packing and packaging, it is used in the textile industry also to make clothes and apparel.
- India is the largest producer and exporter of jute followed by Bangladesh.

The Jute Corporation of India (JCI) was set up by the Government for undertaking the price maintenance, marketability and safety stock operations and for trading of jute.Total production of jute textiles also increased and has also now diversified into several are jute diversified products likecotton bagging, jute tarpaulin, jute carpets, carpet backing, paper lined hessian, jute webbing and jute cloth.Though the total number of jute mills has increased from 77 in 2007-08 to 96 as on 2017-18, the number of looms installed in jute industry, the area of production of raw jute and the consumption of raw jute and jute goods has decreased over the years.The major problems faced by the jute industry of India are-

- Uneven and insufficient supply of raw materials,
- Obsolete technology which hinders modernisation,
- High cost of production per unit resulting to high prices,
- Variability in the production leading to excessive prices and
- Increasing competition from synthetic and plastic substitute goods both in national and global market.

For the above reasons, there is unfortunately a conception that jute is a dying industry and a commodity and many of them believe that it has a very dark future. The performance of the jute industry in the global market is also more or less very stagnant. But jute being an eco-friendly and bio degradable product, can have a bright and prosperous future provided the opportunities can be put to implementation with proper effective planning. To reposition the Indian jute industry in the global market is the need of the hour with a host of jute goods and jute diversified products as eco-friendly substitutes of the synthetic and plastic products. To make this possible it is essential to satisfy the customer needs both in terms of quality and price efficiency to get back the lost glory and commercialize the jute diversified products in the area of technical textile by taking advantage of the unique features of the jute materials. All the stakeholders led by the jute industry must strive hard keeping a long term vision in mind and accepting the changes required for the growth of jute industry to raise the jute sector to its desired heights and increase its value before the customers of the national and global market.

2. Literature Review

Pal Anusri and ChakrabortiPinaki (2011) have analyzedstructure and performance of the Indian Jute Industry in the GlobalisationEra. The study has been doneusingaggregated time series data of some of the key structural variables of the industrial sector to analyse the structural growth and performance, number of workers per factory, fixed capital per factory,

fixed capital per worker, gross output per worker and NVA per worker.Data are collected from various reports of Annual Survey of Industries and Time series data have been collected for National Industrial Classification (NIC-3) digit from the various issues of ASI and has found that the key structural ratios like labour productivity, capital intensity and total factor productivity have been increasing but there is a de-growth in the capital-output ratiosignifying the general deterioration of the quality of investment, use of cost-ineffective technology, smaller factory sizes and increasing horizontal integration within the sectorand its improper utilization over time.

Molla, Sabur and Begum (2015) have aimed to analyse the financial and economic profitability of Jute and Aus in Bangladesh including an assessment of comparative advantage using Policy Analysis Matrix. Both primary and secondary data were collectedfor the period from July 2010 to June 2011. It is found that jute production was more profitable from the financial aspect during the study period as compared toAus in the selected areas of Bangladesh. Economic profitability showed that thegovernment protective policies have both positive and negative influence to the producerincentives of jute and Aus crops respectively.The study showed that Bangladesh had a comparative advantage for importsubstitutions for these crops. Hence, government should continue the existingpolicy support for these crops in a market economy condition.

Bag Narayan Satya (2017) summarized the views of technical and managerial staffs of Bally Jute Company Ltd to point out the ways for improvement in productivity. The view of the staffs were taken by way of a systematic questionnaire survey and has revealed 40 areas of concern to be considered for the improvement of productivity- out of which machine breakdown, poor machine maintenance, idle machines, etc. were identified as the important areas for improving the productivity in Jute Industry. Top management were suggested to take appropriate actions against shortage of skill manpower, absenteeism of labors, action against low producers, and poor quality of spare parts which isessential at this moment to deliver Jute goods to the customers at right time, right quantity and right quality at right places.

Thiripurasundari K. and Rathi P. (2017) has studied the production and export performance of Jute industry in India highlighting the export earnings in the range of Rs. 1,000 to Rs.1, 200 crore annually during 2005-06 to 2015-16 based on secondary data and information. It has also analysed the growth of Indian jute industry during 1950-51 to 2012-13 using theAverage Annual Growth Rate (AAGR) and Compound Growth Rate (CGR) to make an in depth analysis of the export potentials of jute industry and jute goods in India. It has been observed that great variations are there in the production of jute and its exports but it has increased during the period, thereby recording a growth of 70.85 per cent in a span of forty years. However, although production of jute has increased to some extent till 2000-01, a sharp decline was noticed in the production of jute in India and export of jute has shown a negative trend since 1970s.

Kumari Kalpana, S.R. Devegowda, Kushwala Saket (2018) has made an analysis with time series data since 1990-91 to 2015-16 on dynamics of Area, Production and Productivity of jute in India. The whole study period was subdivided into three sub periods. The study was based on secondary data collected from India stat, Directorate of Economics and Statistics, Food and Agriculture Organisation and National Jute Board and analysed using Directorate of Economics and Statistics, Food and Agriculture Organisation and National Jute Board. The study found out negative growth of area. However production and productivity showed a positive growth rate. But there is still a need to increase the productivity levels which ultimately help in increase in domestic production and perform better in foreign exchange through export.

Das Panchanan mentioned in his book that survival of jute industry is dependent on cheap labour as there were no such technological development and the existing machines being almost obsolete, the workload of labourers has increased.Diversification of products and the adoption of new products has enabled some big mills to overcome the fall in productivity and increase their market share which has involved

further introduction of capital. But the emergence of a pool of skilled workers has helped the industry to survive. The study has used factory level (unit level) data from ASI and has done non-parametric Frontier analysis with firm level data has been done to show productivity, efficiency and capacity utilisation in jute industry in India.

DeyTanmoy (2018) has reviewed the problems and issues related to Jute Industry of West Bengal mainly with the labour aspect and has suggested few solutions apart from the role of state government as well as central government. The recommendations are to encourage the people of India to use jute goods as much as possible with the consent of self-esteem, create variety of jute products, create customer awareness by way of advertisement through television, radio, social media, posters, writing books at different level of academics, organizing fairs in various parts of West Bengal and try to totally ban the PVC made products in every possible way and replace it with jute made products.

3.Research Gap

From the extensive literature on the past work, some of which are mentioned in the previous section, it can be found that there are various studies which analysed the financial performance of the textile sector with the help of the ratio analysis, working capital management for the last five years of statements, current and short term solvency ratios, technological development of textile industry, structure, growth and size of the Indian textile industry and role of textile industry in economy. Some have discussed the environmental issues, pollution control strategies pertaining to the Indian Textile Industry.

In the context of Jute textile industry, most researches are focused on labour related issues in Jute Mills, women participation and vulnerability, social security benefits to the workers, industry disputes etc. and another major focus had always been on how jute industry had suffered in the post-colonial period. Since Jute Textile is a special kind of its nature than other textiles, claims a unique place in the textile industry as well as demands for an in-depth sector specific study.

From the literature survey, it has come to notice that there exists a grey area in studying the Jute Textile Sector which encompasses all the issues pertaining to understand the sector from commercial perspective and its sustainability in future.

4. Objective of the Study

- To study the present position of jute industry in India in terms of its area, production, consumption, export and import.
- To analyse the financial performance of listed jute companies of West Bengal
- To find out the sustainability of Indian Jute Industry based on the financial performance
- To give suggestions and recommendations for future sustainability in Indian Jute Industry

5. Data Collection And Methodology

5.1 Sample Design:

I. **Selection of Industry:**Textile Industry has proven immense contribution towards the Indian economy in terms of GDP, employment, output, export earnings, FDI and growing in market size which provides enough evidences that it is a booming sector.Jute Textile Sector has been selected for the present study as India is the leading Jute producing country of the world contributing to over 50 percent raw jute and 40 percent jute goods of global production, using the latest technologies for jute production and is holding the maximum market share in terms of production, consumption and export in the world. The major jute producing states in India are West Bengal, Assam, Bihar and Orissa. Out of these West Bengal produces more than 50% of the total production in India.

II. **Selection of the Mills:** The mills of Jute Sector have been selected based on the criteria that the company should be listed under any organised exchange board, i.e. either NSE or BSE. The criterion is imposed since the disclosure of information is reliable and consistent in case of listed companies. There happens to be four jute companies listed in either

BSE or NSE or both- AI Champdany Industries Ltd (ACIL), Gloster Ltd (GL), Cheviot Company Ltd (CCL), Ludlow jute and Specialities Ltd. (LJSL). Therefore four listed companies have been selected for the study.

5.2 Sources and Type of Data:

The study is based on secondary data which are collected from various sources like published reports by Ministry of textile, Jute Corporation of India, Indian Jute Mills Association, The Jute Commissioner, Commissioner for Agricultural Costs and Prices, National Jute Board etc., Company's annual reports and other published information from NSE and BSE websites and other database like indiastat, capitaline etc.

5.3 Study Period:

To accomplish the objectives of the study and to analyse the financial health of select Indian jute mills, the present study has consider the time frame of last ten years' (2009-10 to 2018-19)

5.4 Methodology:

To evaluate the financial performance of the select jute companies, a detail analysis has been carried out on the capital structure, solvency, working capital management, credit policy, funds flow, investment and profitability of these four selected companies by calculating the financial ratios of the select companies from the annual reports of last ten years. This has helped to understand the various financial parameters of the sector. With help of these variables (ratios) a detail analysis has been done to study the chances of its sustainability in future or whether there is any problem specific to the financial management of these jute mills which could be a major contributor for its downturn.

- ✓ To understand the capital structure, Shareholders fund, has been considered. Shareholders' funds refer to the amount of equity in a company, which belongs to the shareholders.
- ✓ To analyse the solvency position of the companies, Current Ratio, Quick Ratio and Debt-Equity Ratio will be taken into consideration as these ratios has been used to measure the ability of a company to meet its long term debts.
- ✓ To evaluate the degree of efficiency of the management and the credit policy, Debtors turnover ratio, Inventory Turnover Ratio and Asset Turnover Ratio has been studied in details. This has helped to measure the company's capability to generate income by using the assets and other aspects of the firm like the time it generally takes to collect cash from debtors or the time period for the firm to convert the inventory to cash.
- ✓ A detail analysis has been carried out to study the cash flows of the jute companies using cash flow statement of those companies focusing cash flow from operating activities, cash flow from investment activities and cash flow from financing activities
- ✓ To understand the profit earning capability of the companies, Profitability ratios has been considered. It includes Net profit ratio, Return on Capital Employed (%), Return on Assets (%), Asset Turnover Ratio (%)

6. Limitation of the Study

The present study has been carried on within thefollowing major limitations:

i. Thestudy is limited only to jute industry of India. Other juteproducing countries have not been included due to time constraint.

ii. The study is limited to 9 years only i.e., from 2009-10 to 2017-18.9 years data areavailable, as the data beyond 9 years are not available at the Jute Commissioner Office. So thepresent study has been concentrated on the data available for 9 years.

iii. Huge problem was faced in getting access and collecting data from secondary sources maintained by different authorities as they were reluctant to provide their publications, past reports and annual reports of the jute mills as these are confidential to them.

iv. Another important issue faced during data collection was the pandemic situation due to COVID 19 as all the organizations were closed due to

lockdown announced by Government of India and even after the lockdown period was over, the organisations were not allowing any outsider to visit their office. In this process also a lot of time was wasted.

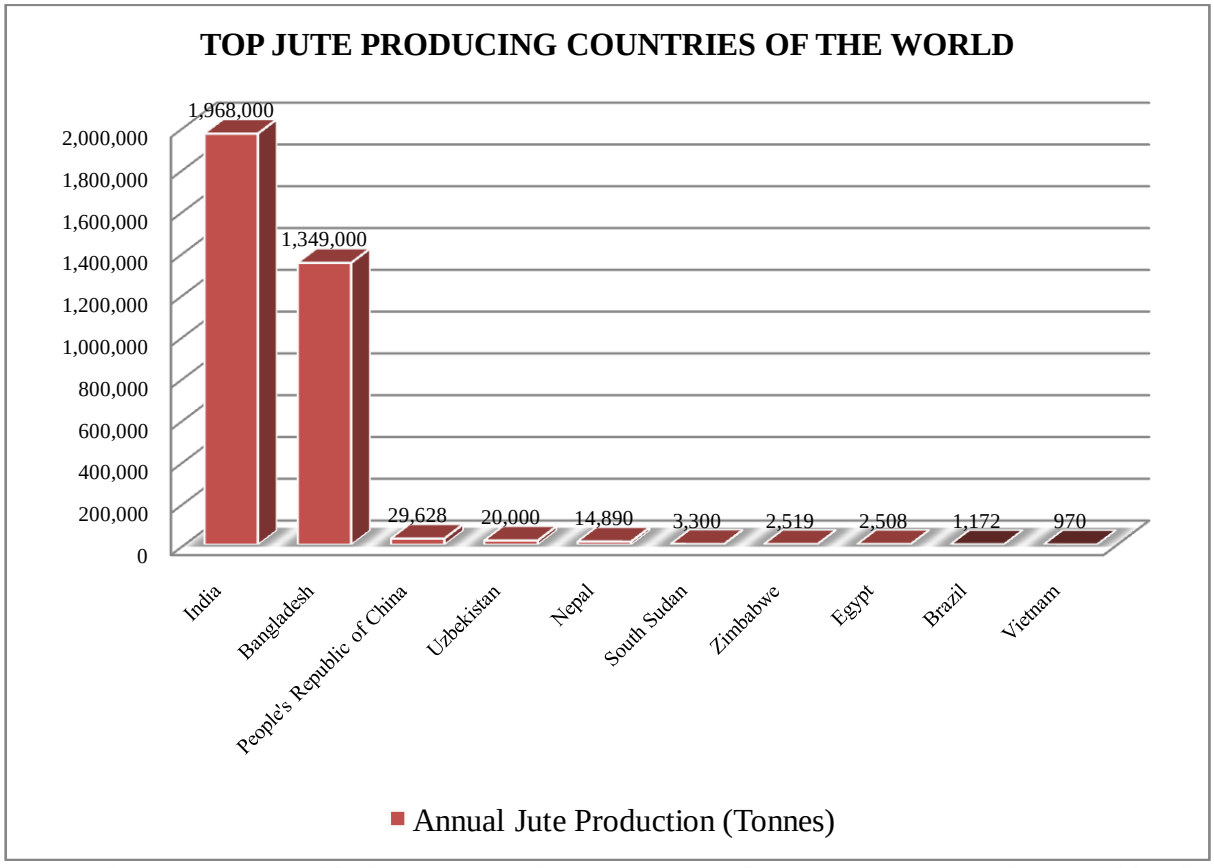
Despite all the problems faced during the data collection, as mentioned has notaffected the quality of analysis and presentation of the research work.

7. Present Position of Indian Jute Industry

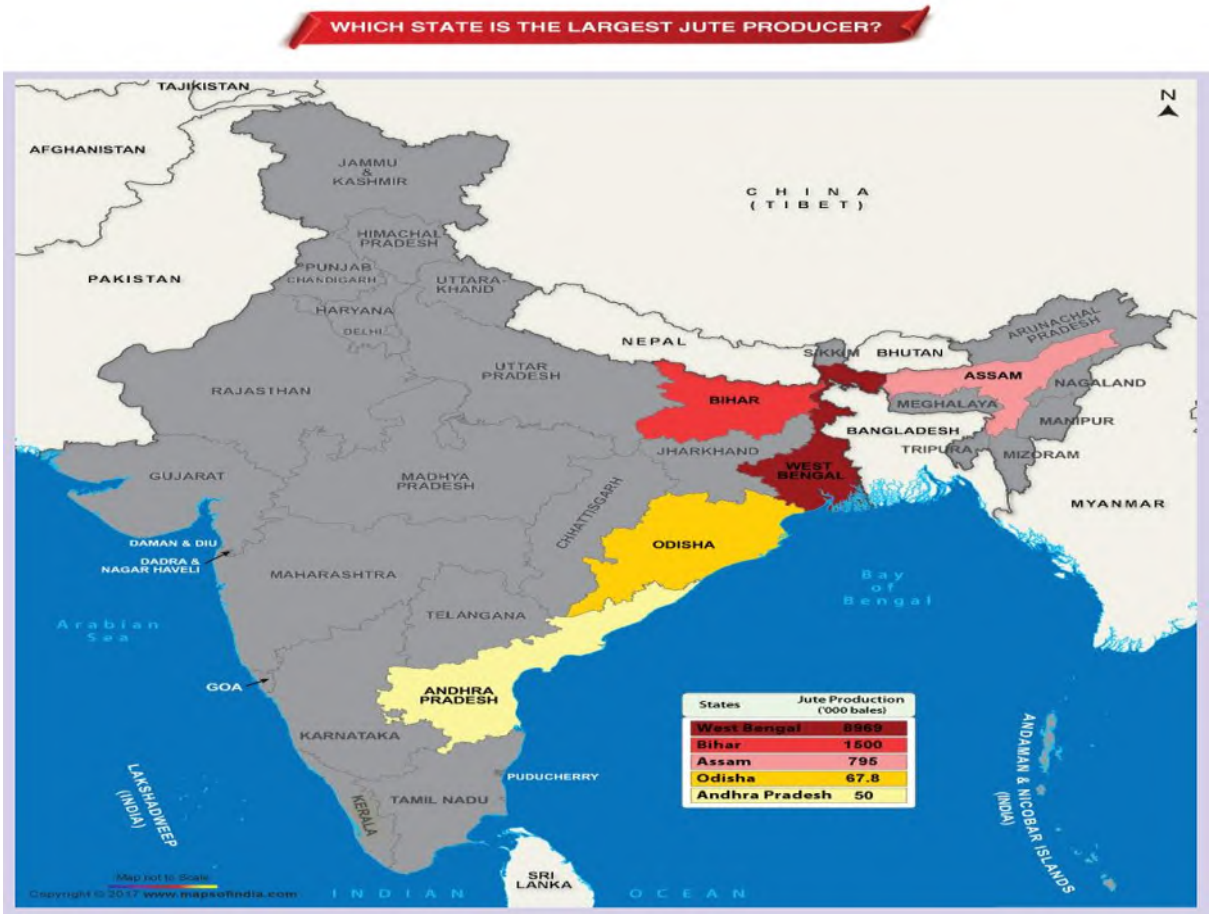
Today, the leading jute producing countries of the world are India, Bangladesh, China and Thailand. India is the world's largest producer of raw jute and jute goods, contributing to over 50 percent and 40 percent respectively of global production**.**The importance of jute and jute products to the world inspite of having stiff competition fromsynthetic goods and plastic products is increasing day after day. Jute manufacturers continue to hold a unique position in the world market because of the low cost, hard wearing quality of the jute fibre. India is using the latest technologies for jute production and is holding the maximum marketsharein terms of production, consumption and export in the world. The major jute producing states in India are West Bengal, Assam, Bihar and Orissa. Out of these West Bengal produces more than 50% of the total production in India. The major reasons behind this are-

- Fertile nutrient soil of the Hooghly region suitable for the jute plants,
- Availability of port facilities providing large market for the jute products
- Efforts of managing agencies and foreign corporates to develop the industry
- Coal from nearby Damodar Valley region
- Cheap water transportation for raw material from Hooghly river
- Availability of cheap labour from Bihar and Orissa
- Transport of raw materials and export of finished goods because of well-developed communication network with well-organized financial and banking facilities

The graphs and charts shown confirm the above mentioned facts and figures.



Source:[*https://www.worldatlas.com/articles/top-jute-producing-countries-in-the-world.html*](https://www.worldatlas.com/articles/top-jute-producing-countries-in-the-world.html)



Source: *https://www.mapsofindia.com/answers/india/state-biggest-jute-producer/*

Over time, there is also a rise in awareness towards the environmental impact of clothing and textile production. People, now-a-days are preferring eco-friendly and sustainable textiles and the demand has increased due to their various benefits. Sustainable textiles are textiles (or fabrics) that are grown and created in an environmentally friendly way, using minimal chemicals as there will be less health problems that are associated with chemicals such as headaches, allergies, skin irritation, and respiratory problems. The eco-friendly clothes are not only beneficial for a people but are also excellent for the environment. These fabrics include organic cotton, bamboo & linen. For this the jute textile industry is considered to be one of the producers of eco-friendly products and occupies an important place in the national economy of India. But due to several factors there are many jute companies which are closing down their operation. For this jute industry in West Bengal is often said the sunset industry and is a dying industry as it has lost its glory in terms of earning foreign exchange and providing employment opportunities. It is also said that this industry is unprofitable and there lies excess workers with decreased production per worker. But there lies ample opportunities for their growth with the help of public and government initiative. The government has already taken the following initiative with different schemes covering almost all the aspects of this industry for its revival:

- Jute Integrated Development Scheme(JIDS)
- Jute Raw Material Bank (JRMB) Scheme
- Scheme to Supply Chain and Bulk Supply of JDPs for selective and mass consumption (Retail Outlet Scheme)
- Fast Track Schemes to Support Participation in Fairs and Business Delegations Abroad for Promotion of Exports of Lifestyle and other Diversified Jute Products (EMDA Scheme)
- Scheme for Workers' Welfare in the Jute Sector
- Incentive Scheme for Acquisition of Plants and Machinery (ISAPM)
- Scholarship Scheme – Worker's Welfare

Table 1. State-wise distribution of composite jute mills

State	2018-19	2017-18	2016-17	2015-16	2014-15
West Bengal	72	71	70	71	70
Andhra Pradesh	12	12	12	12	10
Bihar	3	3	3	3	3
U.P	3	3	3	3	3
Assam	2	2	2	2	2
Odisha	3	3	3	3	3
Chattishgarh	2	2	2	2	2
Tripura	1	1	1	1	1

Table 2. Jute industry at a glance

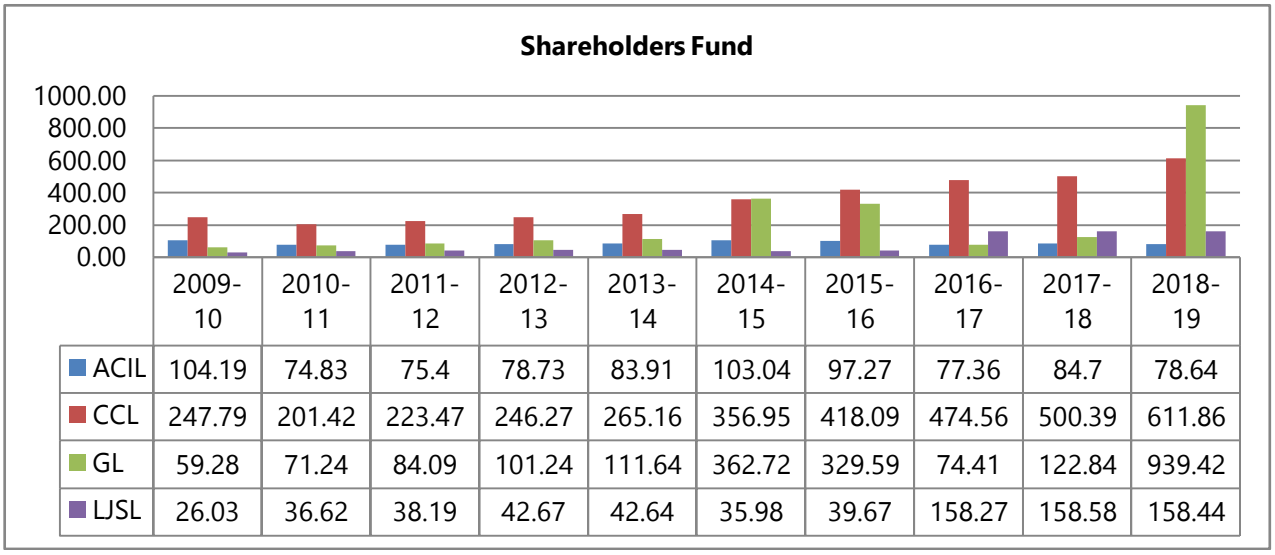
	2018-19	2017-18	2016-17	2015-16	2014-15
No. of mills in India	98	96	93	97	94
No. of mills in West Bengal	72	71	70	71	70
% of mills in West Bengal	73	74	75	73	74
Installed looms	47942	48875.5	50124.75	49809	51374
Installed Spindles	739200	745451	758739.5	751702	772028
Capacity (thousand tonnes p. a)	2699	2715.64	2703.2	2752	2789
Number of Permanent employees	83164	63513	43862	41030	46693
Number of Other employees	90674	125979	161283	159802	162764
Area of Raw Jute ('000 Hectares)	703	742	763	782	810
Yield of Raw Jute (Bales Per Hectare)	5.65	5.56	5.44	9.8	8.5
Production of Raw Jute (Jute and Mesta) ('000 Bales)	9768	10033	10962	10524	11126
Production of Jute Goods ('000 M Tonnes)	1371.45	1408.09	1437.14	1217.1	1267.2
Consumption of Raw Jute ('000 M Tonnes)	89.64	92.2	90	79	82
Domestic Consumption of Jute Goods ('000 M Tonnes)	1163.34	1112.6	1075.7	1144.6	1156.3

Source: Compiled from published Bulletin of National Jute Board

8. Sustainability of Indian Jute Industry Based on Financial Performance of Select Jute Mills of India

8.1 Capital Structure Analysis

Capital structure comprises of mixture of debt and equity capital of a company. It allows a firm to understand what type of capital the company uses to finance its overall operations and growth.



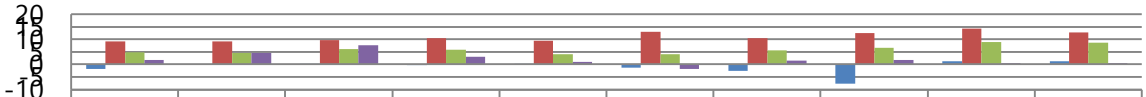
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
ACIL	104.19	74.83	75.4	78.73	83.91	103.04	97.27	77.36	84.7	78.64
CCL	247.79	201.42	223.47	246.27	265.16	356.95	418.09	474.56	500.39	611.86
GL	59.28	71.24	84.09	101.24	111.64	362.72	329.59	74.41	122.84	939.42
LJSL	26.03	36.62	38.19	42.67	42.64	35.98	39.67	158.27	158.58	158.44

Capital structure analysis is a periodic evaluation of all components of the debt and equity financing used by a business.The capital structure of the jute companies comprises of only the equity capital and there is no presence of debt capital. The above table shows the paid up equity share capital of the four listed jute companies where the shareholders fund is highest for GL(Gloster Ltd) has increased over the years except for two years and CCL (Cheviot Company Ltd) is having an increasing trend for all the years at almost at a same rate. The other two companies are maintaining a poor shareholders fund as compared to CCL & GL. ACIL and LJSL are having a fluctuating trend and maintaining a low shareholders fund in all the years for the last 10 years. Low shareholders' equity could be a warning sign that the company is in financial distress or the company has spent its retained earnings and other funds by purchasing costly equipment.

8.2 Profitability Analysis

Profitability Analysis measures the amount of profit earned due to the efficiency of any operation in a business. The main aim of a business is to earn profits. Thus a company has to attract and retain those customers who are profitable.

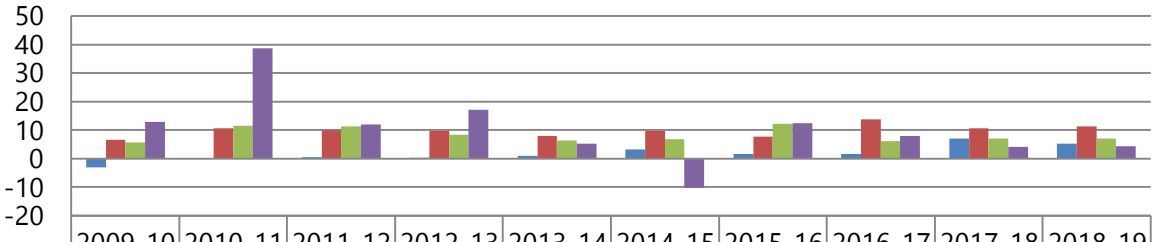
Net Profit Margin %



	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
ACIL	-1.8	0	0.17	0.12	0.35	-1.36	-2.51	-7.61	1.35	1.3
CCL	9.31	9.35	9.78	10.58	9.58	12.95	10.63	12.57	14.37	12.71
GL	4.95	4.55	6.09	5.79	4.15	4.03	5.72	6.7	8.89	8.8
LJSL	1.72	4.59	7.74	2.98	0.97	-1.87	1.58	1.87	0.53	0.42

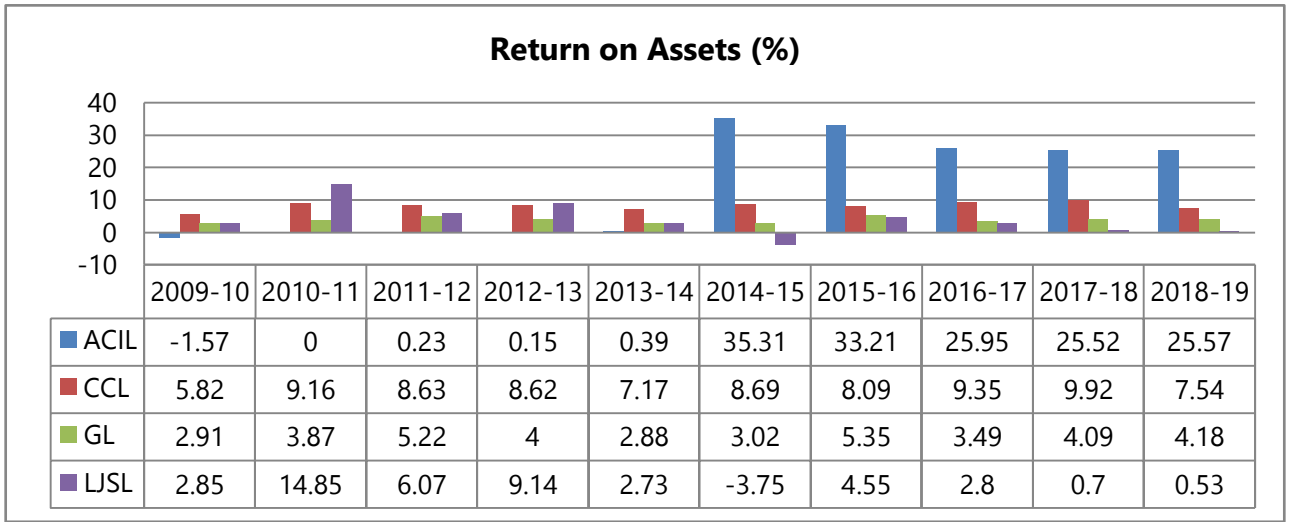
A good margin will vary considerably by industry, but as a general rule of thumb, a 10% net profit margin is considered average, a 20% margin is considered high (or "good"), and a 5% margin is low. Here in the above table it is seen that apart from CCL (Cheviot Company Ltd), all the listed jute companies are having less than 10% net profit margin in the last 10 years. ACIL (AI Champdany Industries Limited) has been running under loss in four years out of last 10 years and the profit margin is very low. GL (Gloster Limited) somehow managed to maintain a very low level of profit in the last 10 years. LJSL (Ludlow Jute Specialities Limited) is also having a very low level of net profit margin for the last 10 years. Therefore, it can be said that the companies uses an ineffective cost structure and/or poor pricing strategies which has resulted in very low net profit margin.

Return on Capital Employed (%)



	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
ACIL	-3.14	0	0.52	0.33	0.89	3.14	1.61	1.52	7.08	5.1
CCL	6.6	10.64	9.84	9.73	8.01	9.65	7.7	13.69	10.54	11.31
GL	5.77	11.42	11.34	8.35	6.33	6.7	12.21	6.15	6.98	6.93
LJSL	12.82	38.64	11.94	17.06	5.12	-10.29	12.44	7.89	4.13	4.26

Return on capital employed (ROCE) is a financial ratio that measures how well a company is generating profits from its capital. When a company has low ROE (less than 10%) for a long period, it simply means that the business is not very efficient in generating profit. Here for all the companies, ROCE is very low and in maximum cases it is less than 10% except for two to three years in last 10 years for CCL & GL. ROCE for ACIL is always low for last 10 years and for LJSL it is very fluctuating. Therefore the companies are not worth for investment as the management is inefficient in using investors' money.

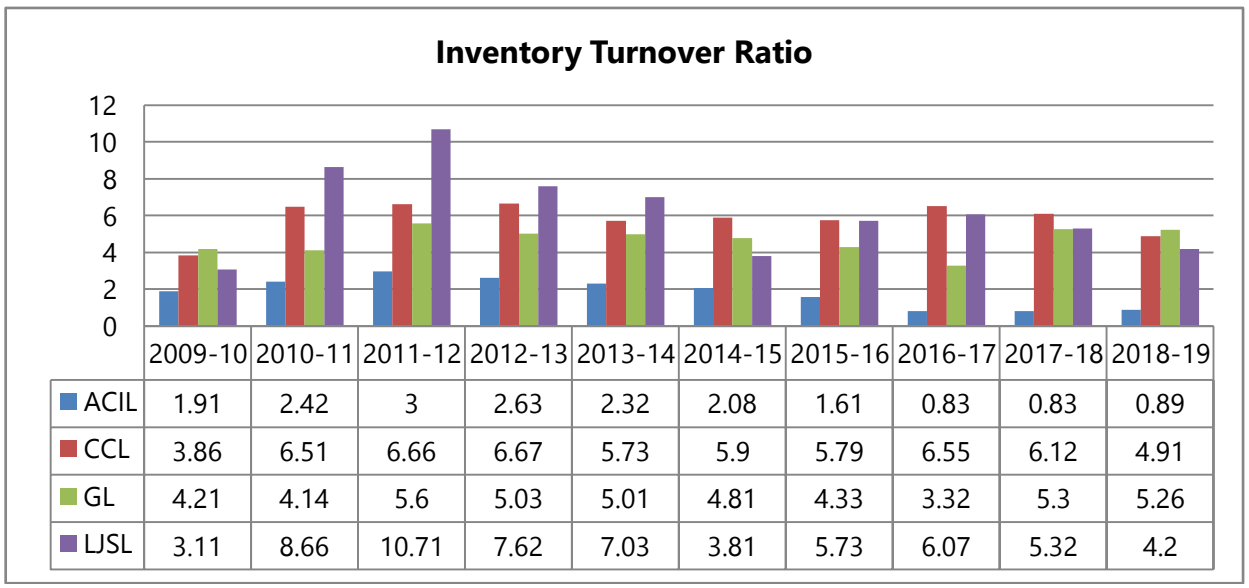


	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
ACIL	-1.57	0	0.23	0.15	0.39	35.31	33.21	25.95	25.52	25.57
CCL	5.82	9.16	8.63	8.62	7.17	8.69	8.09	9.35	9.92	7.54
GL	2.91	3.87	5.22	4	2.88	3.02	5.35	3.49	4.09	4.18
LJSL	2.85	14.85	6.07	9.14	2.73	-3.75	4.55	2.8	0.7	0.53

The return on assets (ROA) shows the percentage of how profitable a company's assets are in generating revenue or how efficiently a company can convert the money used to purchase assets into net income or profits. ROAs over 5% are generally considered good.So for the above mentioned companies, ROA of ACIL has improved in last 5 years and CCL has also managed to keep the ROA percentage at a considerable rate over period of last 10 years. But for GL & LJSL, it is always low in the last 10 years. Therefore, it can be said that ACIL has a solid performance as far as finance and operation of the company is concerned. CCL is having a comparatively satisfactory ROE in the last 10 years whereas GL & LJSL it is not a good sign for the growth of the company and indicates that the company is not able to make maximum use of its assets for getting more profits.

8.3 Management Efficiency

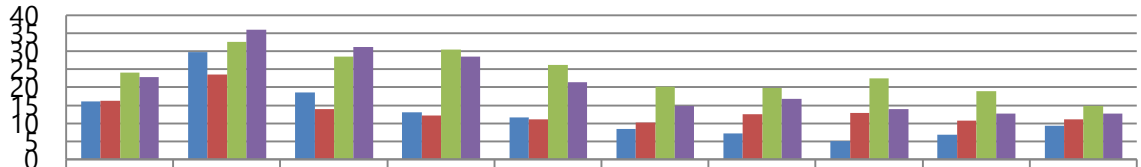
The management efficiency ratio helps to analyze how efficiently a company uses its assets and liabilities internally. An efficiency ratio can calculate the turnover of receivables, the repayment of liabilities, the quantity and usage of equity, and the general use of inventory and machinery.



	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
ACIL	1.91	2.42	3	2.63	2.32	2.08	1.61	0.83	0.83	0.89
CCL	3.86	6.51	6.66	6.67	5.73	5.9	5.79	6.55	6.12	4.91
GL	4.21	4.14	5.6	5.03	5.01	4.81	4.33	3.32	5.3	5.26
LJSL	3.11	8.66	10.71	7.62	7.03	3.81	5.73	6.07	5.32	4.2

The inventory turnover ratio is an efficiency ratio that shows how effectively inventory is managed by comparing cost of goods sold with average inventory for a period. This measures how many times average inventory is sold during a period.A good inventory turnover ratio will vary considerably by industry, but as a general rule of thumb, a ratio between 4 and 6 usually means that the restock items is well balanced with the sales of the company. Here apart from ACIL, all the other three companies have managed to have a good considerable inventory turnover ratio. Therefore, it can be said that ACIL is holding too much inventory compared to its sales. Decreasing inventory turnover may indicate that sales are decreasing below expected levels.

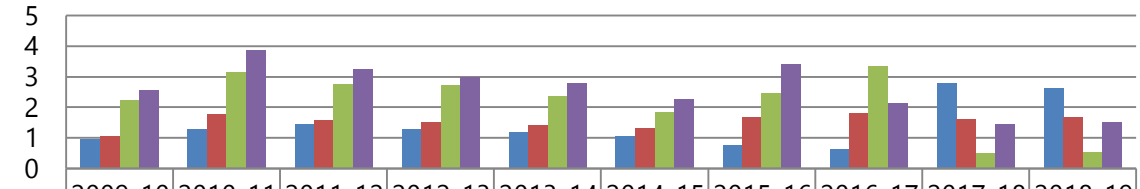
Debtors Turnover Ratio



	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
ACIL	16.11	29.82	18.63	13.11	11.65	8.62	7.21	5.22	7.01	9.45
CCL	16.34	23.68	14.06	12.19	11.18	10.33	12.63	12.99	10.88	11.26
GL	24.11	32.76	28.65	30.5	26.37	20.21	19.91	22.49	18.95	14.85
LJSL	23.02	36.15	31.34	28.63	21.46	14.88	16.94	13.99	12.85	12.84

The ratio is used to measure how efficient a company is at extending credits and collecting debts. Generally, the higher the accounts receivable turnover ratio, the more efficient the company is at collecting credit from their customers. Here among the four listed companies, GL is having the highest Debtors turnover ratio followed by LJSL. Therefore these two companies are maintaining a satisfactory high debtor turnover ratio for the last 10 years compared to the other two companies ACIL & CCL. Hence it can be said that GL & LJSL are more efficient in collecting debts from their debtors in time compared to ACIL & CCL.

Asset Turnover Ratio

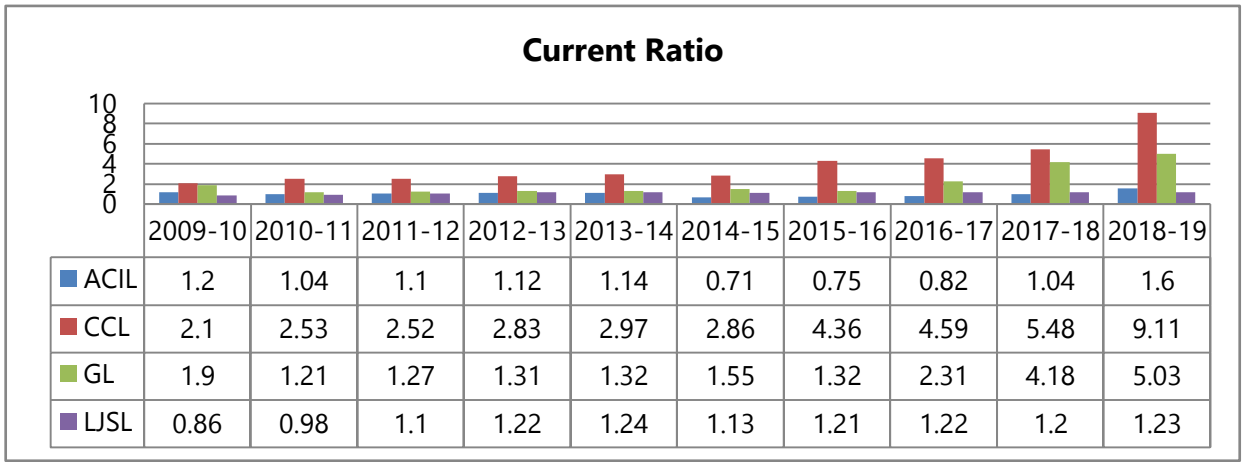


	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
ACIL	0.95	1.28	1.45	1.28	1.18	1.05	0.76	0.65	2.78	2.62
CCL	1.06	1.77	1.59	1.51	1.41	1.32	1.66	1.8	1.63	1.66
GL	2.23	3.16	2.76	2.72	2.35	1.86	2.46	3.34	0.50	0.52
LJSL	2.57	3.87	3.25	2.98	2.78	2.25	3.41	2.15	1.43	1.52

The asset turnover ratio is an efficiency ratio that measures a company's ability to generate sales from its assets by comparing net sales with average total assets.The higher the asset turnover ratio, the better the company is performing, since higher ratios imply that the company is generating more revenue per rupee of assets. Here except the last three years, LJSL is having the highest Asset Turnover Ratio among the four companies and hence more efficient in last 10 years in generating net sales from its total asset investments. Other companies are having a fluctuating trend performing better in few years in last 10 years.

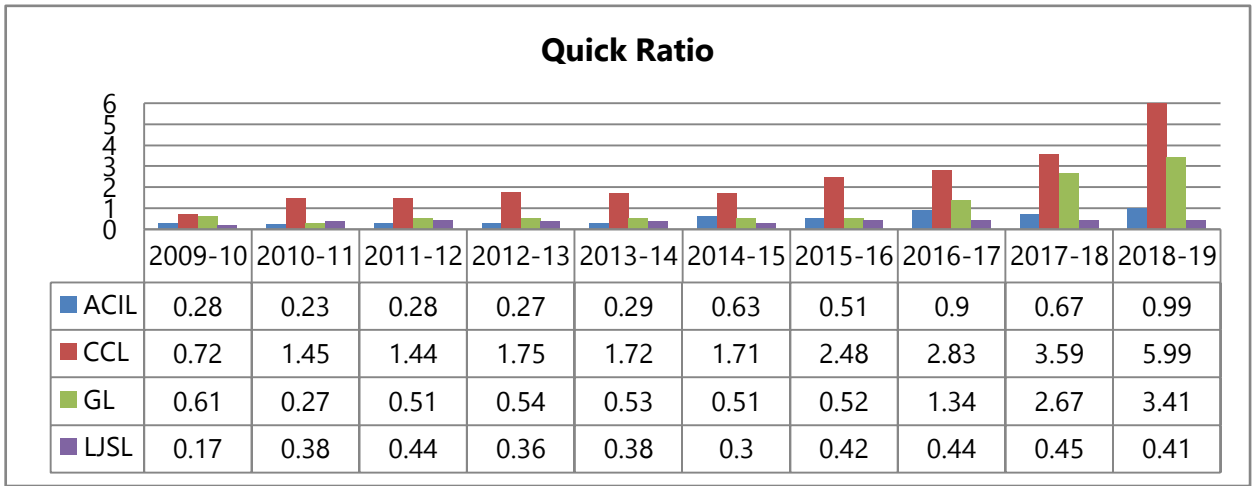
8.4 Working Capital and Solvency Analysis

Working capital analysis is used to determine the liquidity and sufficiency of current assets in comparison to current liabilities. It is used as a financial metric to measure the cash and operating liquidity position of a business consisting of all current assets and current liabilities.



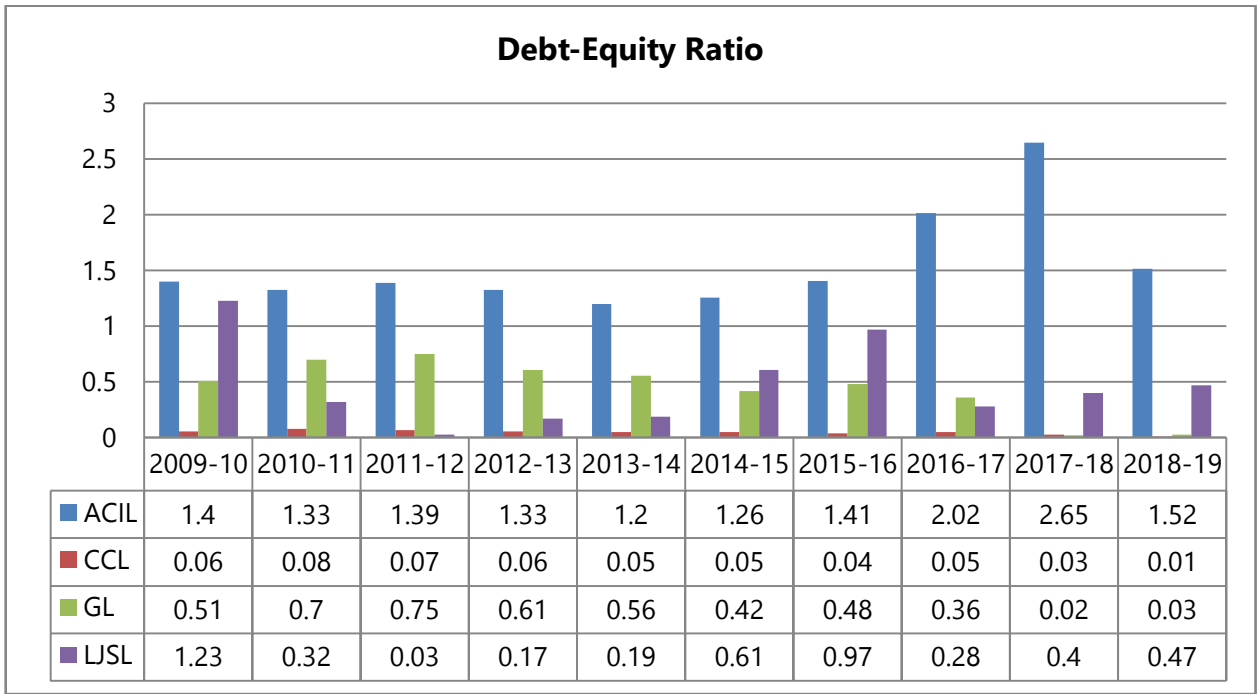
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
ACIL	1.2	1.04	1.1	1.12	1.14	0.71	0.75	0.82	1.04	1.6
CCL	2.1	2.53	2.52	2.83	2.97	2.86	4.36	4.59	5.48	9.11
GL	1.9	1.21	1.27	1.31	1.32	1.55	1.32	2.31	4.18	5.03
LJSL	0.86	0.98	1.1	1.22	1.24	1.13	1.21	1.22	1.2	1.23

An acceptable current ratio may vary considerably from industry to industry, but as a general rule of thumb, 2:1 is a sign for healthy business. It means that 1 rupee of current liability is backed by 2 rupees of current assets. When a current ratio is low and current liabilities are more than the current assets, then the current ratio is below 1, which means company may have problems meeting its short-term obligations or current liabilities. Here the current ratio of all the companies in most of the years in last 10 years are more than 1 which indicates more liquidity and the firm is able to pay its current obligation in time.The performance of CCL and GL is very satisfactory as it is showing an increasing trend in current ratio but current ratio of 9.11 for CCL & 5.08 for GL may not be a good sign as the company may not be using its current assets or its short-term financing facilities efficiently. This may also indicate problems in working capital management. The other two companies ACIL & LSJL are more or less satisfactory in the recent past years.



	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
ACIL	0.28	0.23	0.28	0.27	0.29	0.63	0.51	0.9	0.67	0.99
CCL	0.72	1.45	1.44	1.75	1.72	1.71	2.48	2.83	3.59	5.99
GL	0.61	0.27	0.51	0.54	0.53	0.51	0.52	1.34	2.67	3.41
LJSL	0.17	0.38	0.44	0.36	0.38	0.3	0.42	0.44	0.45	0.41

An acceptable quick ratio may vary considerably from industry to industry, but as a general rule of thumbquick ratio should be 1:1 or higher.The higher the ratio, it means that the company is more liquid and can meet current obligations using liquid assets.A company with a quick ratio of less than 1 cannot currently fully pay back its current liabilities. Here the quick ratio of ACIL & LJSL is very poor and is less than 1 in last 10 years. This means that it is in a more risky position since they donot have adequate current assets, without inventory, to cover up the short term debt and relies heavily on efficient inventory turnover to keep afloat in the short-term. Comparatively, the performance of CCL and GL is satisfactory and they have enough current asset without stock to meet their short term obligations.

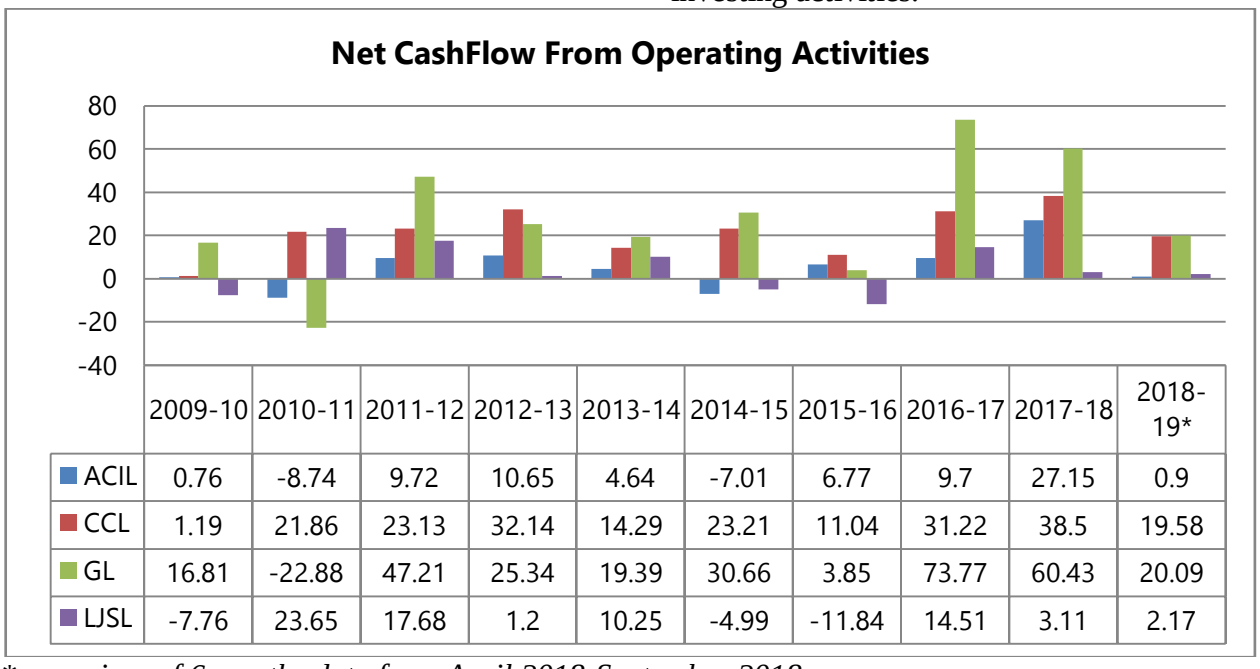


	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
ACIL	1.4	1.33	1.39	1.33	1.2	1.26	1.41	2.02	2.65	1.52
CCL	0.06	0.08	0.07	0.06	0.05	0.05	0.04	0.05	0.03	0.01
GL	0.51	0.7	0.75	0.61	0.56	0.42	0.48	0.36	0.02	0.03
LJSL	1.23	0.32	0.03	0.17	0.19	0.61	0.97	0.28	0.4	0.47

The debt-equity ratio helps in measuring the financial health of a company and compares its total debt to total equity.It signals the extent to which shareholder's equity can fulfil their short term and long term obligations to creditors. Basically it helps in evaluating company's financial leverage. Here in the above table it is seen that apart from ACIL, the companies are having very having very low debt-equity ratio which means their capital structure comprises of mostly equity share capital as seen from the shareholders fund. Less debt capital in the capital structure has the advantage that the company is in safer zone as they donot have to pay interest if they donot perform well but they will also not get the tax benefits.

8.5 Cash Flow Analysis

Cash flow analysis measures how much cash is generated and spent by a business during a given period of time. It is the best technique to measure a company's performance as it is tangible, quantifiable and can be measured in standard units. This techniquecannot be used to inflate profits or to artificially increase the value of assets. Cash flow analysis includes cash flow from operating activities, cash flow from financing activities and cash flow from investing activities.

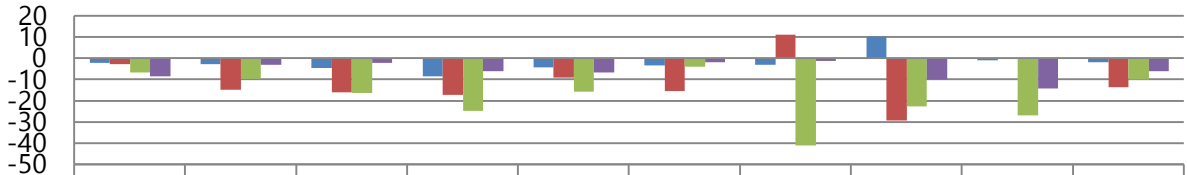


	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19*
ACIL	0.76	-8.74	9.72	10.65	4.64	-7.01	6.77	9.7	27.15	0.9
CCL	1.19	21.86	23.13	32.14	14.29	23.21	11.04	31.22	38.5	19.58
GL	16.81	-22.88	47.21	25.34	19.39	30.66	3.85	73.77	60.43	20.09
LJSL	-7.76	23.65	17.68	1.2	10.25	-4.99	-11.84	14.51	3.11	2.17

**comprises of 6 months data from April 2018-September 2018*

Cash flow from operating activities (CFO) is used to indicate the amount of cash generated from ongoing regular business activities- producing and selling goods and service. It does not include long-term capital expenditures or investment costs, as these are one time activities. CFO focuses only on the core business, and is referred to as net cash from operating activities.Here the companies are having a fluctuating trend and sometimes going to a negative figure. Decrease in sales, changes in working capital i.e. growth in asset or a decrease in liability may be the cause for its declining cash flow from operating activities. But overall the performance of GL is better compared to the other companies in this aspect.

Net Cash Flow From Investing Activities

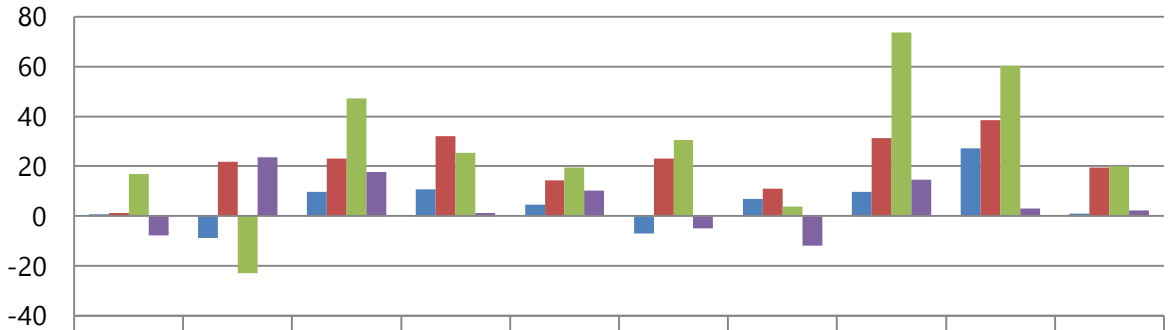


	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19 *
ACIL	-1.98	-2.57	-4.32	-8.3	-4.15	-3.17	-2.94	10.45	-0.69	-1.81
CCL	-2.48	-14.65	-15.79	-17.02	-9.04	-15.16	11.1	-29.09	-0.01	-13.54
GL*	-6.61	-9.63	-16.06	-24.59	-15.59	-3.92	-40.88	-22.62	-26.71	-9.734
LJSL	-8.5	-3.05	-2.04	-5.81	-6.45	-1.86	-1.15	-9.82	-14.24	-6.03

*<u>*comprises of 6 months data from April 2018-September 2018*</u>

Cash flow from investing activities is a parameter on the cash flow statement that measures the total change in a company's cash position resulting from profits and losses of investment and changes resulting from amounts spent on investments in fixed assets, such as plant and equipment, furniture, machinery, investments in securities, or the sale of securities or assets. Here the cash flow from investing activities for all the companies for last ten years is showing negative which may indicate poor performance of the companies. However, having negative cash flow is not always a bad signal- it may also indicate that the company is investing in capital assets therefore it future earnings are expected to grow.

Net CashFlow From Financing Activities



	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19*
ACIL	0.76	-8.74	9.72	10.65	4.64	-7.01	6.77	9.7	27.15	0.9
CCL	1.19	21.86	23.13	32.14	14.29	23.21	11.04	31.22	38.5	19.58
GL*	16.81	-22.88	47.21	25.34	19.39	30.66	3.85	73.77	60.43	20.09
LJSL	-7.76	23.65	17.68	1.2	10.25	-4.99	-11.84	14.51	3.11	2.17

*<u>*comprises of 6 months data from April 2018-September 2018*</u>

Cash Flow from Financing Activities is the amount of cash generated in a given time period to finance its business. It includes the issuance and buyback of equity shares, issuance and redemption of debenture and preference shares, issuance and repayment of loans, payment of dividends etc. A negative cash flow indicates that the company has paid out capital, such as paying off long-term debt or giving a dividend to shareholders. Here the amount is mostly on a lower side apart from few years for the companies which mean that the companies are using capital for paying debt and dividends.

9. Summary of Findings

It is found from the study that the capital structure is mostly equity fund and thus not enjoying tax deduction benefits. Only ACIL is having debt capital whereas other companies are having mainly equity capital. Apart from CCL, the profitability is having a declining trend over the years and all the listed jute companies are having less than 10% net profit margin in the last 10 years. The financial strength is not highly satisfactory. Fixed Assets are financed mainly through ownersfund and the working capital is not efficiently and effectivelymanaged. Shareholders fund is highest for GL (Gloster Ltd) and has increased over the years except for two years and CCL (Cheviot Company Ltd) is having an increasing trend for all the years at almost at a same rate. ACIL and LJSL are having a fluctuating trend and maintaining a low shareholders fund in all the years for the last 10 years which could be a warning sign that thecompany is in financial distress. ROCE is very low and less than 10% in maximum years for all the companies except for two to three years in last 10 years for CCL & GL. ROA is always low in the last 10 yearsfor GL & LJSL. With regards to Inventory Turnover Ratio, ACIL is holding too much inventory compared to its sales. GL & LJSL are more efficient in collecting debts from their debtors in time compared to ACIL & CCL. Asset Turnover Ratio is having a fluctuating trend, performing better in few years in last 10 years and the Cash Flow Analysis is also not satisfactory. Overall it can be seen that all the companies are suffering from financial distress, although performance of CCL is somewhat better in comparison to other three companies in few parameters. Therefore, the sustainability of the jute industries is a major concern for the country. However, government of India is taking initiative to protect this old industry from losing its glory and the existing market share nationally and globally. It has set up a number of organizations, legislative councils to protect Indian jute industry from international competition by improving the standard and quality of the jute products and introduced various acts and schemes to create social awareness for encouraging more use of jute products.

10. Suggestion and Recommendation Financial Management for Future Sustainability

- The mills should have an optimal capital structure comprising debt and equity so that they enjoy tax-deductible benefits as well without going into too much financial risk of paying interest if they do not perform well.
- The mills should use an effective cost structure and pricing strategies to increase the net profit margin.
- The mills should increase and maintain operating profit by increasing sales and reduce the value of capital employed to improve their ROCE
- To improve the ROA, the mills must reduce asset costs and increase their income.
- With better pricing strategy, increasing demand for jute goods and by improving forecasting techniques, the mills can improve their inventory turnover ratio.
- By improving credit policies, offering cash discounts for early payments, rewarding timely payments and improving the collection efficiency, the mills can improve their debtor turnover ratio.
- The mills should attempt various strategies to improve their overall sales to generate cash from operating activities.
- The mills should not use their capital to meet their debt and pay dividends.
- Mills should develop a system that reduceoperating cost and increase the production units.

11. Conclusion

India is the world's largest producer of raw jute and jute goods, contributing to over 50 percent and 40 percent respectively of global production and among the various states, West Bengal hold the 1st position comprising more than 50% of India's production.But due to several factors many jute companies have closed down their operation in recent past. For this jute industry in West Bengal is often called the 'sunset industry' and is claimed to be a dying industry as it has lost its glory in terms of earning foreign exchange and declining employment opportunities. This paper has explored the financial health of the jute textile sector in India to find out the sustainability of industry on the basis of the financial performance of some select jute mills of India. The analysis is carried out on the listed (BSE or NSE) mills of India for a period of 10 years based on the secondary data. The study reveals that the overall financial health of Jute Sector in India is not satisfactory for their sustainability. They are maintaining a low shareholders' equity which could be a warning sign that the company is in financial distress or the company has spent its retained earnings and other funds by purchasing costly equipment. Thecompanies use an ineffective cost structure and/or poor pricing strategies which have resulted in very low net profit margin.The companies are not worth for investment as the management is inefficient in using investors' money. The company is not able to make maximum use of its assets for getting more profits. The working capital management and cash flow in the companies are highly unsatisfactory. May be due this poor financial health of the jute sector in India, it is referred to as a dying industry of India.Hence these companies will have to strengthen itsshareholders funds and working capital and few initiatives needs to be taken as stated aboveto make the industry a grand success. It must work on enhancing its current performances to sustain in thiscompetitive global business environment.

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MOUNTAIN TOURISM DESTINATIONS AND OUT-OF-POCKET SPENDING PLAN OF DOMESTIC TOURISTS

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ABSTRACT

This study proposes a model of understanding tourists' income and their spending pattern with a wider perspective from existing corporate destination development to future social destinations in the mountain region with a special reference to Sikkim Himalaya. This basic model deals with the expenditure pattern which is composed of optional excursion, duration of stay, future visit and number of trips respectively. The model depicts an alternative scope and opportunity of promoting and practicing social economy in mountain tourism destinations through an understanding of income and expenditure pattern in tourism amidst the COVID 19 pandemic.

Keywords: *Mountain tourism, Domestic leisure tourist, Social tourism economy, Tourists' income, Sikkim Himalaya*

JEL Code: L83, Z32

Introduction

The 'small and beautiful' state Sikkim of India comprises of almost hundreds of hill stations of Himalayan range. The characteristics of mountain resources incorporate marginality, poor accessibility, diversity, fragility, niches of attractions and aesthetics (Nepal et.al. 2005). Based on these characteristics, tourism is a significantevent in almost all hill state economies around the world, with leisure and recreations predominating. Since time immemorial, this region possesses very limited and seasonal livelihood options, mainly comprising of agriculture and tourism.Mountain regions, in most cases, are inaccessible, fragile and marginal to political and economic decision-making and home to some of the poorest people in the world (Messerli et.al. 1997). Though Sikkim Himalaya represents 1.33 per cent area of the total Indian Himalayan region, yet ecological, socio-cultural diversities, economic conditions etc. are almost similar and projecting future livelihood pattern, economic and commercial activities almost in the same way (NITI Aayog, 2018). Strategically, Sikkim is an important state and as such should not be isolated and underdeveloped. This small state of 7096 square kilometer shares three international borders. Through tourism, Sikkim has gained a separate position and very positive image since 1975. Before this period, Sikkim was an isolated and ignored land not much known to the outer world for tourism. It is the first organic state of India and significantly contributing to and pioneering for sustainable development and responsible practices.

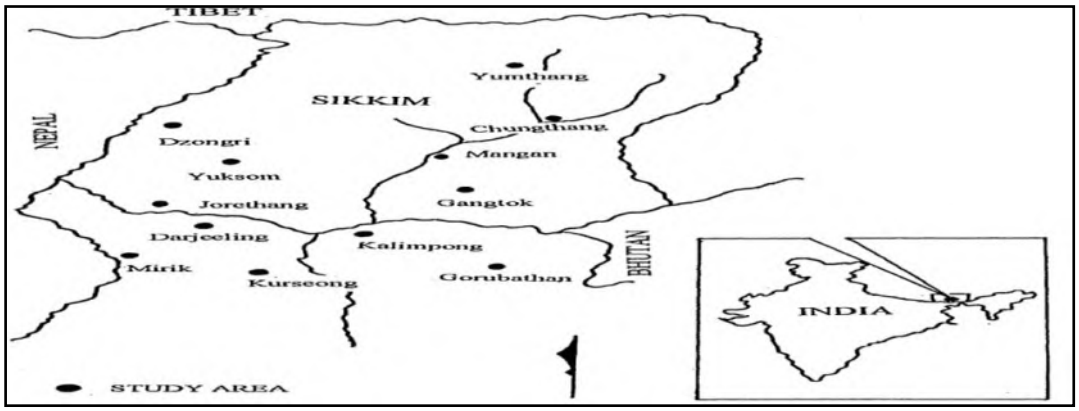


Fig. 1. Map of Sikkim and adjacent areas showing the study area
Source: Chhetri, D.R., Parajuli, P., Subba, G.C. (2005)

The arrival statistics in figure 2 exhibits domination of domestic tourists in the Sikkim Himalaya. In 2011-12, only 14.61 % non-leisure tourists visited Sikkim(GOI, 2012).



Figure 2: Domestic and International Tourist Arrivals in Sikkim from 1980 to 2019
Source: Sikkim Tourism Development Corporation, 1980-2019

From empirical research evidences, seasonal fluctuation, dominant economy class domestic leisure tourist arrivals, dependence on neighboring state West Bengal for arrivals and tourism entrepreneurship, practices of high intensity mass tourism and massive environmental degradation are salient features of the Sikkim Himalaya (Batabyal, 2013). Though this region has been promoting organic firming, horticulture, and floriculture, yet the traditional Jhum cultivation, invitation to the pharmaceutical industries, roadway, railway, and airport constructions etc. have resulted in a huge ecological loss. Surprisingly, on 18th September in the two consecutive yearsof 2011 and 2012, massive earth quake enhanced formulation of serious policy issues on sustainable development, management, crisis and disaster. Therefore, Socialeconomic practices is the need of the hour in the region as the concept can evolve more different types and number of employment and entrepreneurial opportunities, serious ecological balances, more participation and consultation of local people in the area.

Literature Review and Proposed Model of Social Tourism Economy:

Towards Sustainable Development of the Indian Himalayan States, NITI Aayog has a twofold ways in which off-farm/ non land based activities are basically mountain tourism (Niti Aayog, 2018). Tourist arrivals in the Indian Himalayan States were projected to reach 240 million by 2025, which was 2.5 times the current tourist arrivals at 100 million in 2017-18, excluding the impacts of COVID 19 outbreak. Apart from diverse pilgrimages by the Hindu, Buddhist, Sikh, Christian etc. in the Himalaya, other forms of tourism like adventure, trekking, mountain climbing, camping, recreation, aesthetics, ecotourism, and agri-tourism have been gaining popularity amidst COVID 19 outbreak. Conventionally, this region possesses very limited and seasonal livelihood options, mainly comprising of agriculture and tourism. Present COVID 19 pandemic has hit hard and further streamlined the opportunities through tourism in this IHR and Sikkim Himalaya is not exception to that. In fact, tourism attraction features are found almost same in this region from western part to east and its extended area.

Again, many scholars already identified increasing inequality at a higher rate in the Western Indian Himalayan Region before this pre-pandemic period (Thakur et al. 2015). Owing to this homogenous landscape and attraction features this already started increasing socio-economic inequality was expected to be found to similar other landscape of this region. Therefore, this study adopts a forward-looking approach, investigating the utilization of scarce investment in tourism,

circulation of earning from it for equitability and development for all as recommended by the UNWTO 2019, also advocated through SDGs in 2017. Maurin (2004) distinguishes social tourism from commercial tourism by highlighting the focus on target groups for intervention and community development aspects of the social tourism sector.While in Spain, the aim of the social tourism was to overcome poor low-season occupancy, France and Belgium were making commercial accommodation, social tourism facilities accessible to everybody, including a non-specific 'social tourism' market and Germany practicing for religious tourism, secular tourism etc. (Diekmannet al. 2011). Again, there is an increasing emphasis in tourism research on the role that tourism plays in enriching the lives of tourists, including impacts on health, well-being, happiness, and quality of life (Diekmannet al. 2015). The position of tourism has been changing and the COVID 19 pandemic has increased those issues manifold that needs a huge reorientation with all possible scopes addressing and adopting sustainable principles around the World. Sikkim Himalaya is a separate biogeography region fragile in nature.

Having been more flexible with several approaches adopting commercial, quasi-commercial and state owned cases of social tourism around the world, the scope for it is immense in lass developed or developing nations (Diekmannet al. 2011). Recently occurred COVID 19 pandemic has brought about scarcity of investment, decrease in the volume of business, diversification of tourism business. Therefore, this is the high time to adopt the concept of social economy with a gradual shifting from exploitative tourism development to sustainable approaches empowering local people and protecting tourism resources as well.

Following is the figure 3 proposing a model of transforming corporate tourism economy to social tourism economy in the Sikkim Himalaya amidst this COVID 19 pandemic. This basic model focusing on how to initiate social inclusion in a mountain tourism economy with changes in income and associated expenditure patterns.

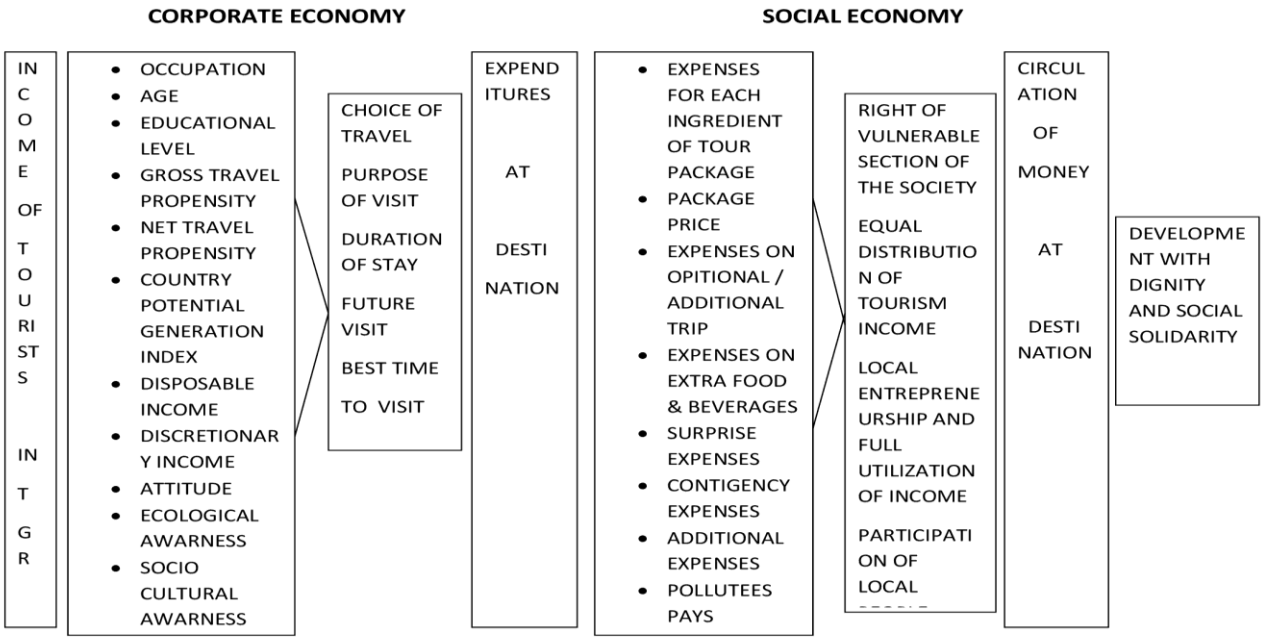


Figure 3: Proposed Model for Transformation of Corporate Tourism Economy to Social Tourism Economy through Changes in Income and Expenditure Patterns in Mountain Tourism with Special Reference to Sikkim

Tourists are often sensitive to the income variable and inelastic with respect to price (Vanegas et al.2000). Daniels et al. (2004) discussed about the income of hosts as well as guests for introducing an occupation based model, recommended tourists expenditure for future research alsoand supported Tyrrell et al. (2001). Many studies recommended tests for functional forms and search for a different specification of the price variable. Jensen

(1998) determined travel propensity with respect to income and domestic prices in relation to prices abroad in general. Also, this study highlighted how the country of destination was chosen according to relative prices amongst a range of potential destinations. In relation with the component-based studies, Pyo et. al. (1991)found the possibility for budget cutting may be through decrease in income opportunities and revealed this impact greatest for transportation while least for food and restaurant services. Therefore, at this point of time, tourism academicians, policy makers and professionals have been revisiting the concept of tourism economy, ways of development and transformation.

Objectives and assumptions of the Study:

The proposed model investigates the implications of domestic leisure tourists' income and spending pattern on trip in tourists' destinations with special reference to Sikkim Himalaya before the pandemic. Discussion on the impacts of COVID 19 pandemic is found quite natural and incorporated henceforth. Therefore, the objective of the study is to measure the impact of tourists' income on spending patterns in the destinations with a special consideration of the COVID 19 pandemic. In doing so, optional excursion, duration of stay, future visits and number of trips have been considered for the study.

It is assumed that the COVID 19 pandemic has negative impacts on economic conditions of the households under this study and making them more sensitive while making travel decision. How visitors' income and its future changes bring in related changes in spending pattern has been depicted to address alternative development in the future era. It is also assumed that this future development model has the potentiality to incorporate and assimilate added challenges exhibited through COVID 19, except the available public transportation.

Methodology

Primary data has been collected from the field before the pandemic for investigating income and trip expenditure relationship with the three recognized tourism variables in destination development and marketing literature. These are duration of stay, optional excursion, future visit and number of trips taken to Sikkim. Sample size was restricted to 500 domestic leisure tourists within the study area by using stratified random sampling. As about 43-45% tourists were from West Bengal, 5-7% tourists from other countries and the remaining 48-50% are from other Indian States and territories, data was used to get more reliable and accurate representative sample of the population. This study has been carried out with structured questionnaire. The respondents are the tourists, staying in different hotels in few tourist attractive cities and destinations in Sikkim, namely Gangtok, Pelling, Namchi and Mangan. Initially a pilot study has been considered and then the main study has been conducted. The respondents have been informed regarding the purpose, nature and objective of the study and then the study has been administered. Total number of respondents was 475, among which a little more than forty two percent (i.e., 201) have been considered for the final study, which are complete and usable. The collected data was analyzed using the statistical packages like SPSS and Excel. As the collected responses fall into more than two classes or categories, the χ^2 -test was used. Here, the responses of tourists groups were measured with the help of this test. Using the χ^2 -test many marketing decisions and future policies were considered in the study.

Here, the test Statistic = $\chi^2 = \sum_{i=1}^{k} (Oi - Ei)^2 / Ei$

Oi=Observed Frequencies andEiimplied Expected frequencies. When the estimated value of χ^2 found greater than the critical value (tabulated) and the null hypothesis was rejected. Correlation was found the most useful because they could indicate a predictive relationship that can be exploited in practice. Correlation referred to any departure of two or more random variables from independence, but technically it referred to any of several more specialized types of relationship between mean values. There are several correlation coefficients, often denoted ρ or r, measuring the degree of correlation. The most common of

these was the Pearson correlation coefficient, which was sensitive only to a linear relationship between two variables (which may exist even if one is a nonlinear function of the other).In statistics, the Pearson product-moment correlation coefficient (or Pearson's *r*) is a measure of the linear correlation between two variables *X* and *Y*, giving a value between +1 and −1 inclusive, where 1 is total positive correlation, 0 is no correlation, and −1 is total negative correlation.

Data Analysis and Discussion

The tourists in Sikkim are majorly the domestic; there is limited number of foreigners. The domestic tourists are though very price sensitive but they are also very much keen to experience the adventures available, may be termed as 'optional excursion'. Thus the same will compel the tourists to stay longer and in turn the same price sensitivity comes in front. The income of the tourists and their optional excursion show an important relationship among themselves.

Table 1: Observed frequency and expected frequency of income and optional excursion willingness oftourists in Sikkim

Observed frequency			Expected frequency		
Income (Rs.)	Optional excursion		Income (Rs.)	Optional excursion	
	Yes (Number)	No (Number)		Yes (Number)	No (Number)
≤ 4999	5	13	≤ 4999	12.05	6.42
5000-9999	14	7	5000-9999	14.06	7.52
10000-14999	17	4	10000-14999	12.49	6.98
15000-19999	16	11	15000-19999	16.92	9.61
≥ 20000	54	28	≥ 20000	51.87	28.21

Source: Field Survey

The above table shows the observed frequencies and expected frequencies of 'monthly average income' and 'optional excursion willingness'. Here, k and l are number of rows and columns respectively. The computed value of χ^2 is 19.1233 with 1d.f. Now $\chi^2_{0.05,1}$ = 8.964 and $\chi^2_{0.01,1}$ =12.987.therefore, 'monthly average income' and 'optional excursion willingness' are positively associated in domestic tourism.The same association exists between the duration of stay and optional excursion. The duration of stay in the study area is measured by dividing the whole range into five-point scale and optional excursion willingness is a binary data. In the next table 2 it is found that the observed and expected frequencies of duration of stay and optional excursion willingness in the study area.

Table 2: Observed frequency and expected frequency of duration of stay and optional excursion in Sikkim

Observed frequency			Expected frequency		
Duration of stay in Sikkim (Days)	Optional excursion		Duration of stay in Sikkim (Days)	Optional excursion	
	Yes (Number)	No (Number)		Yes (Number)	No (Number)
≤ 3	10	7	≤ 3	9.12	7.96
≥4≤6	26	42	≥4≤6	34.22	31.88
≥7≤9	35	27	≥7≤9	31.89	30.14
≥10≤12	21	13	≥10≤12	18.56	15.64
≥12	14	6	≥12	10.34	9.33

Source: Field Survey

The above table exhibits the observed frequencies and expected frequencies with two characteristics viz. 'duration of stay in Sikkim' and 'optional excursion willingness'. The observed frequencies (from the opinion survey) are compared with the expected frequencies. Here, calculated value of χ^2 is 15.5814.98 with 1d.f. Now, comparing with $\chi^2_{0.05,1}$ (= 9.488)9.376 and $\chi^2_{0.01,1}$ (=13.277)12.946 we conclude that there is an association between

duration of stay and optional excursion willingness at both of 1% and 5% level of significance.

Another important study was the testing of association between income and gross expenses on trip in Sikkim/ whether visited Sikkim earlier and how many times tourists visited Sikkim. The table 3 is showing the three different results of χ^2 considering income of tourists as independent variable and there is no significant association between income and gross expenses on trip.

Table 3: Chi-Square Test Showing the Association between Income and Tourist Expenditure/ Future Visit (Y/N), Number of Visit

Association	Pearson χ^2	d.f.	Assymp. Sig
Income and Spending on trip	52.95	16	0.001
Income and Future visit (Y/N)	36.16	8	0.000
Income and Number of Visit to Sikkim	53.68	20	0.005

Source: Field Survey

The rejection of null hypothesis is made when calculated values of the test statistic chi-square are compared with the tabulated values as there is an association between income and tourist expenditure/ future visit (with binary response), number of visit. The maximum number of tourists visiting Sikkimis found to be price sensitive, a positive correlation of 0.359 found between future income opportunities or increase in income sources/avenues and reasonably priced tour products. The purchasing power, if reduces due to the COVID 19 outbreak, will have an extensive effect in future package tour pricing and selling as well. The positive correlation (0.124) exists between better income opportunities of tourist and information about availability of aids/ equipment at attractions, while a negative correlation between future income opportunity and availability of vehicles indicates an interest in own-car scheme while travelling. Likewise, accessible pathways in destinations, clear signage at all major points, efficient information and communication aids, quickly available tour operators and such other infrastructure and superstructure variables are with the negative correlation of -.194, -.198, -.384, -.005 respectively with income opportunities or alternative avenues of future changes in income/job opportunity.

A positive correlation (of 0.343)is registered between better income opportunities and reasonably priced tour packages or products in Sikkim. Negative correlation between reasonably priced tour products and supply side development related variables [safety support system (-0.3), availability of accessible vehicles for travel (-0.016), accessible pathways at attraction premise (-0.1), clear and complete signage at all major destinations (-0.326), effective communication aids(-0.361), quickly accessible tour operators (-0.078)] is evident except ramp and elevators at attractions with .096. As delivery of service and friendly treatment by staff to the tourists/ guests is of immense importance, a positive correlation of 0.364 between income opportunities and trained staff and their friendly treatment implies tourists' expectation for professional delivery of services by the employees. It is clear particularly when we deal with another positive correlation of 0.369 between trained or skilled employees and their friendly treatment and reasonably priced tour packages or products. Tourists in institutionalized segment in the study area generally expect a range of quality services and avoid local or aboriginal socio-cultural issues while tourists of the non-institutionalized segment preferably like just the opposite. Therefore, in perspective of Sikkim, tourists seeking/ asking/ deserving westernized amenities put forward a less-bothering view/ attitude towards hosts while alternative tourists usually receive or ask for help and cooperation more and become less dependent on westernized amenities. A positive correlation (0.499) between trained staff and their friendly treatment and information about availability of aids/ equipment at attraction proves how the delivery of tourism services and facilities are interdependent on functional and technical quality respectively. Negative correlation between trained stuff and their friendly treatment and all infrastructure and

superstructure related variables [like safety support system(-0.679), availability of accessible vehicles for travel (-0.384), accessible pathways at attraction premise(-0.536), clear signage at all major points (-0.647), effective communication aids(-0.004), easily accessible tour operators(-0.191)] was noticeable as warm hospitality has priceless value.

Conclusion

During the pre COVID 19 periodconsidered in the study, it is found that the income source as well as the revenue source of tourists becomes the major determinant of the tourists' future visit and their travel frequency. Friendly behavior and familiarity is found significant for tourist retention and as such this point is more important for more number of tourist arrivals during post COVID 19 period in the study area. Tourists visiting Sikkim during the pre COVID 19 period believed that, with the increasing income, they would be able to demand more infrastructural support. On the other hand, this pandemic enhances the demand for general safety and security issues along with the COVID infrastructure rather, and tourist with high income must avail of these facilities. It also revealed that more the tourists were financially strong less they were dependent on infrastructure and superstructure related issues. These were the trends for pre COVID 19 period and draw more attention at this point of time. It is found that with increasing income tourists were interested on new travel information and communication aids, infrastructural support, travel equipment, alternative transportation arrangement. On the contrary, with more income tourists don't confirm more spending on their future trip expenses though duration of stay was found associated with optional excursion. The study also advocated promotional effort for increasing duration of stay to offer more. In line with the same, post COVID 19 promotional effort must enhance this. These maximum domestic leisure tourists are obviously price sensitive. Increase in the price of tour ingredients during post COVID 19 pandemic is expected to have a significant effect as a result of which volume of tourists will reduce even if almost the previous situation reinstates. Therefore, alternative post-COVID 19 tourism developments and marketing in the study area must promote and incorporate more warm hospitality to compensate infrastructural support. Again, the most feasible scope for dealing with the health safety is of course self- reliant alternative accommodation, alternative transportation and alternative sight visiting to maintain social distancing and safety issues during and post COVID 19 period. Overall, this study further recommend investigation for developing social economic development in the study region and IHR for future solidarity may be with more explanatory variables. But this study assures a fundamental model which can be extended with many other destination management and marketing variables for further extensive studies.

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SYMBOL OF HOUSES IN WILLIAM FAULKNER'S LIGHT IN AUGUST

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ABSTRACT

William Faulkner is one among the greatest contemporaries of American writers whose works mainly connects the landscape and psychological minds of humans in fictional town Yoknapatawpha. The purpose of this paper is to show how Faulkner effectively use the symbol of houses to reflect the psyche of human are corelated in his work. The houses in his works gives some horror visualisation to the audience which also represents the theme of isolation and alienisation. The manifestation of psychological state of characters were conventionally visible and outward through the landscape and house images in Gothic fiction. William Faulkner's famous novel Light in August have the Archetypal landscapes which received brief attention by many scholars and writers, but the virtually ignored the importance of houses in it. His use of houses amplifies many important themes in it such as, isolation and alienation of individual, identity, importance of community, and religion. This paper closely examines the novel Light in August, to reveal the classic gothic manner of Faulkner by using house images which are considered as psychological symbol of the characters inhabitants. The parts of houses like bedrooms, windows of various rooms, and kitchen plays a vital role in the novel. "Dark House" was first considered as the working title of the novel which should underscored. The characters Lena Grove and Joe Christmas were escaping from the ideology of inhabitant, by leaving the house through bedroom windows, and moving from one house to another routinely. Joanna Burden, Doc and Mrs. Hines and Gail Hightower's houses were considered as isolated one and it parallels to the alienation and isolation of the inhabitants. Byron Bunch in the novel progressively moved from his boarding house to a small tent near the open road shows that he become more involved in humanity. The satire of religion to fulfil simply close to home finishes is found in the depravity of the faith gatherings; the platform is utilized by the Reverend Hightower, Doc Hines, and by Joe Christmas as a chance to voice their own obsessive convictions. The list goes on and the implications are myriad. Most of the buildings in Light in August are richly symbolic and a comprehensive study of them is needed.

Keywords: *Gothicism, Alienation, Isolation, Dark House, Identity, Sexuality, Horror, Myth and Psyche.*

Introduction

The classic period of Gothicism was classified from the publication of Horace Walpole's The Castle of Otranto in 1764 and Charles Maturin's Melmoth the Wanderer in 1820 which is also known as the flourishment of Gothic literature. Various elements of Gothic fiction such as duality of villain, persecuted maiden, nature of evil, use of horror and terror, influence of past, describing interior psychic processes, and the symbol of houses were continuously utilized by many modern authors for more than sixty years of the genre's glory. This article explores gothic conventions of William Faulkner's extensive use of house images as the symbol of inhabitant in the novel Light in August. The basic settings of gothic fiction stereotypically conquered by gothic castles which frequently haunted and helps to reveal an atmosphere of psychological importance to note. As Robert Hume in "Gothic Versus Romantic: A Revaluation of the Gothic Novel" observes:

[T]he imaginary world in which the action takes place is the author's objectification of his imaginative sense of the atmosphere. In other words, the setting exists to convey the atmosphere…The Gothic novel uses its atmosphere for ends which are fundamentally psychological. (286)

The potential psychological symbol of castle were regularly used by gothic writers as the symbol of the psyche of citizens from the early gothic writer Walpole. As Leslie Fiedler in Love and Death in the American Novel explains the deeper psychological symbolism of the haunted castle,

Beneath the haunted castle lies the dungeon keep: the womb from whose darkness the ego first emerged, the tomb to which it knows it must return at last. Beneath the crumbling shell of paternal authority, lies the maternal blackness, imagined by the gothic writers as a prison, a torture chamber— from which the cries of. the kidnapped anima cannot even be heard. The upper and the lower levels of the ruined castle or abbey represent the contradictory fears at the heart of gothic terror: the dread of the super-ego, whose splendid battlements have been battered but not quite cast down— and the id, whose buried darkness

abounds in dark visions no stormer of the castle had even touched. (132)

The psychological conflict within the individual, then, is expressed in terms of the Gothic building.

The American novel had its beginnings during the period Gothic writing prospered abroad, and American writers, for example, Charles Brockden Brown, Nathaniel Hawthorne, Edgar Allan Poe, and Henry James regularly utilized emblematic settings in the Gothic way. The grotesque castle had been vanished by the medieval setting, and instead contemporary dwelling serves the same for its symbolic purpose. As Eino Railo in The Haunted Castle points out:

Each age fashions this centre of suspense to conform with its own new experiences and inventions, but for the reader aware of its history it is an easy task to strip off the modern equipment, when it stands confessed as merely a new rendering of the old picture of the haunted castle. (171)

William Faulkner's most praised work rose up out of a concentrated period of creative creation that equals any in writing. William Faulkner's books and brief tales have for some time been noted for their formal and underlying idiosyncrasies basically as much concerning their dull subjects of race and sexual orientation and their tricky representation of the South. William Faulkner regularly utilized houses in this Gothic way. Francois Pitavy and Elizabeth Kerr briefly mentioned Faulkner's gothic houses in their respective works, Faulkner's Light in August and William Faulkner's Gothic Domain, which are the comprehensive study were never been accomplished. "Dark House," is the working title of Light in August, which provides a wealth of illustrations. The dark house to which the title of the novel referred to is Reverend Gail Hightower's house. Sitting in his investigation in the dusk each evening, he is as actually detained by his home as he is intellectually detained by the past. The genuine prison of the Gothic novel has been changed into a mental jail. The vision of his dead Grandfather so overwhelms Hightower's life that he can't work in the present.

More dark houses and more characters were added in the expansion of the novel. The great plantation houses of the South part of America provide a convenient substitute for the Gothic castle. As Elizabeth Kerr observes: "The plantation house which, in its prosperity, had stood for the orderly life of a semi-feudal society, in its ruin and decay resembled the ruined castle in Gothic novels, symbolizing the collapse of the old order" (25). This becomes true of the Compson house in The Sound and the Fury, and the Sutpen mansion in Absalom, Absalom! but Faulkner departs from the convention in Light in August. Joanna Burden's home was built by her abolitionalist grandfather, and the Burden house therefore represents a threat to the old Southern social structure.

Woman and House

The dark, outlandish and threatful atmosphere surrounding both the woman and house seems to doom them, and our first sight of the Burden home occurs after Joanna has been murdered and the house is burning. The pillar of yellow smoke from the house is described as "standing straight as a monument on the horizon" (44), and "taller than and impregnable as a monument" (277). Joanna's home is her landmark; the two are connected in death as they were throughout everyday life. Joanna's relationship with Joe Christmas is characterized as far as her home, yet the full meaning of this relationship must be perceived after an assessment of the houses in Joe's initial life and the mental affiliations made with them. A sequential synopsis of Joe's life and mental advancement is accordingly all together. Joe spends his youth in a,big long garbled cold echoing building of dark red brick sootbleakened by more chimneys than its own, set in a grassless cinderstrewnpacked compound surrounded by smoking factory purlieus and enclosed by a ten foot steel-and-wire fence like a penitentiary or a zoo. . . bleak walls, the bleak windows where in rain soot from the yearly adjacenting chimneys streaked like black tears. (111)

Joe's encounters there figure significantly in the arrangement of his mind, moulding his mentalities towards individuals and occasions for the duration of his life. The echoes in the structure underline its void, a hinting of the vacancy of Joe's resulting life. The similarity of the orphanage to a penitentiary is expanded by

the use of the word "compound," and by the description of the children as "orphans in identical and uniform blue denim" (111). The repetition of the word "bleak" links the atmosphere of the building and the psyches of the children, and the "black tears" on the window strikingly emphasize the pathos of their situation. There is not even any grass in the hard "cinderstrewnpacked" yard, their house being surrounded by smoking factory chimneys. As Joe will continue to be after he leaves the orphanage, they are isolated from nature, from the community, and from life.

One of the first women in 'Joe's life is the dietitian at the orphanage. At first, Joe thinks of her merely in terms of food: "The dietitian was nothing to him yet, save a mechanical adjunct to eating, food, the diningroom, the ceremony of eating, …smooth, pink and white, making his mind think of the diningroom, making his mouth think of something sweet and sticky to eat" (112). Joe sneaks into her room and discovers that she has sweet pink toothpaste which he naturally associates with her. For some time, he surreptitiously enters her room, eats a single mouthful of it, and leaves. One day, however, the dietitian and her boyfriend return while Joe is in the room. Hiding behind a curtain, Joe mechanically eats most of the tube and makes himself sick. Not realizing that she was making love while he was in the room, he wants only to be punished for eating her toothpaste and vomiting: "n [H)e was putting himself in her way in order to get it over with, get his whipping and strike the balance and write it off" (115). When she finally confronts him, "[H]e believed that she was about to strike him. But she did not; the hand just opened beneath his eyes. Upon it lay a silver dollar" (116). Joe's association of food, discomfort, enclosed spaces and the unpredictability of women begins with this incident and remains with him long after it is forgotten.

The next house in Joe's life, the McEachern house, further reinforces these associations. When Joe looks at his foster parents' home one evening, he makes the following observation: "The house squatted in the moonlight, dark, profound, a little treacherous. It was as though in the moonlight the house had acquired personality: threatful, deceptive" (160). The adjectives used show Joe's attitude toward his foster mother. Like the dietitian, she confuses him by her unpredictability. After his foster father has beaten him for refusing to learn his catechism, a punishment Joe expects and accepts, later Mrs. McEachern secretly brings him food: "dishes she would prepare for him in secret and then insist on his accepting and eating them in secret . . ." (157). He rejects her by turning the tray upside down, "dumping the dishes and food and all onto the floor" (145). He thinks with disgust of her attempt, "to get herself between him and the punishment which, deserved or not, just or unjust, was impersonal, both the man and the boy accepting it as a natural and inescapable fact until she, getting in the way, must give it an odor, an attenuation, and aftertaste," (157) For Joe, it is women who love deceit and threaten the rigid predictability of a man's world.

While women are associated with food, enclosures, rooms and houses, Joe psychologically links men with the barn or stable and the outside world. This association also has its beginnings at the McEachern house. His whipping for his failure to learn his catechism occurred in the stable, and it was of that incident that he was later to think: "On this day I_ became a. man" (137). This early psychological association accounts for Joe's behaviour the night before he murders Joanna: he rejects everything associated with women. The confines of cabin and clothes are shed and he goes to the stable, where "Even a mare horse is a kind of man" (101). Joe's feeling of being enclosed or engulfed by women, and the accompanying image of a black abyss, occurs several times throughout his life. His sexual initiation takes place during his stay with the McEacherns, in a dark mill shed. As he looks at the young Negro girl "he seemed to look down into a black well" (147). He feels himself "enclosed by the womanshenegro," a phrase which is repeated twice in the same paragraph. Joe feels trapped, enclosed by the She, and finds himself obliged to fight to free himself from this sense of confinement, fighting with the other boys until "There is no She at all now. They just fought; it was as if a wind had blown among them, hard and clean" (147).

When Joe is a little older, he leaves his foster parents' house secretively at night to meet

Bobbie Allen, a waitress he has met, but their first meeting is unfortunately timed. Bobbie has forgotten that she will have her monthly period on the appointed day, and must explain the situation to Joe. When Joe first learned about menstruation, years before, he had fled to the barn, the male stronghold, where he remained for the entire day (174). Several days later he kills a sheep, a sort of ritualistic propitiation. His immunity from this knowledge is short-lived, however, and he now jerks himself free of Bobbie and runs to the woods. There he crystalizes his impressions of women:

He reached the woods and entered, among the hard trunks. . . hardfeeling, hardsmelling, invisible . . . [A]s though in a cave he Seemed to see a diminishing row of suavely shaped urns in moonlight, blanched. And not one was perfect. Each one was cracked and from each crack there issued something liquid, deathcolored, and foul. (177-78)

With these impressions of women as containers or "victims of periodical filth" (173) firmly fixed in his mind, he meets Bobbie regularly for a month, but they never enter her house. For their lovemaking trysts they go "among the growing plants, the furrows, and into the woods, the trees" (178). The natural imagery is in stark contrast to Bobbie's room, which is described as "close, smelling of stale scent" (183). When Joe first visits Bobbie's room he brings her candy and they talk, but when he is ready for sexual intercourse, he suggests they leave the house and return to the darkness and the woods. Bobbie is quite masculine in appearance and Joe associates the masculine outdoors with her and their sexual activities instead of the contamination he has associated with enclosed spaces since the incident with the dietitian. He is therefore astonished when he realizes that Bobbie intends to make love with him inside the house.

His last visit to Bobbie's house again points out the contrast between houses, which he associates with women and corruption, and the outdoors, which he associates with men. After he knocks his foster father senseless at a dance, possible killing him, he goes to Bobbie's house with the vague idea of running away with her. Bobbie scorns him, and he is ridiculed, rejected, and beaten. He thinks, "I got to get out . . . into the air, the cool air, the cool dark" (210). The sensation is identical to that of his earlier experience with the "womanshenegro" in the shed. Once outside the house "he entered the street which was to run for fifteen years" (210), and then he entered Jefferson. In Jefferson Joe meets Joanna Burden, and their relationship begins when he enters her house in search of food. He enters the house for the first time through the kitchen window, even though the main door is unlocked: "he seemed to flow into the dark kitchen: a shadow returning without sound and without locomotion to the allmother of obscurity and darkness" (216). For Joe, the kitchen, the heart of the house has always been inextricably associated with women. Joanna and the house represent a sanctuary for Joe: he later thinks of her as "the woman at first sight of whom in the lifted candle…there had opened before him, instantaneous as a landscape in a lightningflash, a horizon of physical security…" (221). He takes her physically that night in an act that can best be described as rape, and returns to repeat the deed the next night.

He now expects to be hated and turned out of the cabin as well as denied access to the main house. He thinks about leaving town, and yet the following night he goes back to her house. This time the back door is locked, but he persists:

He went to the kitchen door. He expected that to be locked also. But he did not realise until he found that it was open, that he had wanted it to be. When he found that it was not locked it was like an insult. It was as though some enemy upon whom he had wreaked his utmost of violence and contumely stood, unscathed and unscarred, and contemplated him with a musing and insufferable contempt, (224)

Like the dietitian, Joanna has upset his expectations. He expects to be punished for breaking into the house and raping her; instead, she sets out food for him and invites further sexual advances by leaving the house open. She receives the same treatment his foster mother received for interfering with his sense of guilt and expiation: Joe rejects her through the food; he flings it about the room. Joanna hears the commotion and throws the bolt to the rest of the house, denying him access to it and

to herself. That episode concludes the first phase of their relationship, which Joe thinks of "as though he were outside a house where snow was on the ground, trying to get into the house…" (254-55).

Symbol of Human Psyche

The second phase begins when Joanna makes sexual overtures by entering his cabin and sitting on his bed. In this phase she abandons her Calvinistic teachings, her psychological prison, and gives way to her nymphomaniac passions. She craves the idea of illicit love, and for this reason Joe cannot enter the house normally: "for a whole week she forced him to climb into a window to come to her. He would do so and sometimes he would have to seek her about the dark house until he found her, hidden, in closets, in empty rooms…" (245). The closets and empty rooms of her dark house are manifestations of her subconscious mind, the repressed portions of her psyche symbolically expressed. As Joanna becomes wildly passionate, expressing her heretofore repressed sexuality, Joe feels the familiar sense of corruption, entrapment and enclosure. His earlier vision of the urn, women as containers of filth, is expanded here. He feels "as through he had fallen into a sewer" (242), "like a man being sucked down into a bottomless morass" (246), and as though "he was at the bottom of a pit in the hot wild darkness" (255). As the second phase drifts into the final phase of their relationship the emphasis shifts from the corruption of women to Joe's increasing sense of confinement. He notices that now "they met always in the bedroom, as though they were married. No more did he have to seek her through the house…" (249). Joanna has now become softer and more feminine, and believes she is pregnant, which would be the natural culmination of their frenzied sexual encounters. Joe, unable to accept this more normal male-female relationship, ceases to go to the house, avoiding the woman, the corruption, and the entrapment of marriage.

When he later receives her notes directing him to come to her, he believes that she now wishes to resume their relationship on his terms. He goes first to the kitchen, where he eats the food set out for him, and then mounts the stairs to her bedroom. Instead of the expected invitation to share her physical life he receives an offer to take over her business affairs as her secretary. Later, she offers to send him to a Negro law school. When these offers are rejected, Joanna demands that he pray with her. As she becomes more obsessed by guilt and by the knowledge that her pregnancy was the onset of menopause, she reverts to her harsh, mannish appearance and behaviour. There is now a strong resemblance between Joanna and McEachern: "both are religious fanatics, harsh, demanding and judgmental. Joe can no longer enter the house at will and receive physical and sexual satisfaction. No food is now set out for him, and Joanna's bedroom door is locked both before his arrival and after his departure" (263). Joanna's menopause ended not only her physical ability to produce life, but her feminine instincts to nurture and to be loved. The total lack of such feminine desires is reflected by the empty kitchen and the locked bedroom door. She has become a stranger to Joe in this third phase, strangely reminiscent of Simon McEachern. Both have tried to lock him into respectability, imprison him by their fanatic religious beliefs. His reaction to both situations is similar: strike out and flee.

The night before he murders Joanna his feeling of being entrapped reaches a peak. As he walks through Freedman town, he is surrounded by voices: "On all sides, even within him, the bodiless fecundmellow voices of negro women murmured." He feels "enclosed by cabinshapes" and decides "It was as though he and all other manshaped life about him had been returned to the lightless hot wet primogenitive Female" (107). Freedman town is described as "the black pit" which "might have been the original quarry, abyss itself" (108). Throughout Joe's life, women and sex are equated with enclosed spaces. The dietitian, Bobbie Allen, and Joanna Burden have all represented confinement and corruption for Joe. Joe's final" confrontation with Joanna occurs in Joanna's bedroom. There she demands that he kneel and pray with her for forgiveness for their sexual sins. When Joe refuses, as he earlier refused to learn his catechism for McEachern, she threatens him with a gun. As Joe once stood and accepted his punishment from his foster father, he now stands and watches as Joanna pulls the trigger

of the pistol. The actual murder scene is not given, and when we next see Joe, he is outside of the house, on the road, free from both woman and house.

Joe spends most of the next week, before his capture in Mottstown, in the woods. Earlier he ran to the woods in an attempt to understand menstruation and women. Now he spends his time trying to understand himself. He has escaped the psychological prison by the murder of Joanna, but now he finds himself trapped by the physical prison of his body and its needs. At first, he craves food constantly. He thinks of the time he threw the meal Joanna had offered him on the floor "with a kind of writhing and excruciating agony of regret and remorse and rage" (316). Finally escaping that prison, too, he realizes "I don't have to bother about having to eat any more" and feels "peace and unhaste and quiet" (320). In his flight from food and women, he has found peace outside and alone. He is now psychologically prepared to accept the punishment for his act, and wanders openly about the streets of Mottstown until he is recognized and captured. Faced with life imprisonment, Joe escapes once again. Almost instinctively he runs to the Reverend Gail Hightower's kitchen, where he ends his flight and offers no resistance to Percy Grimm. Joe's life ends in the symbolic womb-tomb mentioned by Fiedler. The "allmother of obscurity and darkness," (321) as the kitchen is described, is a fitting description of both. Joe's self-sacrifice in Hightower's kitchen frees him from his psychological and physical prisons, a decision he made while alone and in the woods.

Like Joanna, the Reverend Gail Hightower uses his house as a retreat from the community, where he remains in spite of its opposition. Like Joe, he tends to equate houses with women. As he thinks of his childhood home he associates it with his mother, particularly with her eyes: "He could feel them [her eyes] through all walls. They were the house: he dwelled within them… He and she both lived in them like two small, weak beasts in a den, a cavern…" (450). When he thinks of his youth he remembers:

[H]e had loved darkness, of walking or sitting alone among trees at night. Then the ground, the bark of trees, became actual, savage, filled with, evocative of, strange and baleful half delights and half terrors. He was afraid of it. He feared; he loved in being afraid. Then one day while at the seminary he realised that he was no longer afraid. It was as though a door had shut somewhere… He just hated it; he would flee from it, to walls, to artificial light. (300-301)

Life is unpredictable and uncertain, and Hightower flees from it to the security of a room. The housing imagery is deliberately used to cut him off from life, as his actual house would do later. Hightower's house, his "sanctuary" (293), is the original dark house of the unused title, and is unquestionably an index to the minister himself. The house, "unpainted, small, obscure, poorly lighted, mansmelling, manstale" (44), is analogous to the unwashed man. Hightower sits in his window each evening "oblivious of the odor in which he lives— that smell of people no longer in life: that odor of overplump desiccation and stale linen as "though a precursor of the tomb…" (300). His rejection of humanity has left him spiritually dead.

His withdrawal from life into the twilight dream of his phantom grandfather is paralleled by his withdrawal into the study of his house. There in the security of his sanctuary, he can ignore the world of life outside his four walls. The closest he comes to the natural world is the sounds of-life which come in through his open window, serving as a constant reminder of the life he has rejected. Hightower's attitude toward rooms and the world outside, reverses Joe's. Joe associated rooms with confinement, contamination, and women, from which he would flee to the cool, free air outside. Hightower associates' rooms with sanctuary and security, and he flees from the unknown to the safety of walls. On occasions, however, the sanctuary of his room is violated by intruders. Dragged forcibly out of his home on one instance, he suffers a beating at the hands of the townspeople. He bears it "with that patient and voluptuous ego of the martyr…until, inside his house again and the door locked, he lifted the mask" (464). Years later, when Byron, Doc and Mrs. Hines intrude on his solitude and ask him to commit himself to life by lying to save Joe, he adamantly refuses: "Suddenly his voice rises higher yet. 'Get out!' he screams. 'Get out

of my house! Get out of my house!'" (370). He refuses to leave the security of his room, and orders those who would disturb his mental sanctuary to leave. He prefers the predictability of the quiet life of the mind, dreaming of his grandfather's deeds within his study walls, to the uncertainty of life without them. He has been dead to the world for so long that it will not be an easy matter to change his psychological prejudices.

Architecture of Kitchen

Byron's persistence, in the form of weekly visits and extended talks, finally brings Hightower back into life. The minister leaves his house and becomes involved with another human being; he sets out to deliver Lena's baby. It is in Hightower's kitchen, after the birth of Lena's child, that Hightower is reborn:

And as he stands, tall, misshapen, lonely in his lonely and illkept kitchen, holding in his hand an iron skillet in which yesterday's old grease is bleakly caked, there goes through him a glow, a wave, a surge of something almost hot, almost triumphant…Life comes to the old man yet. (382-83)

In the kitchen, always associated with women, Hightower has become a live human being, a man, once more. In a "glow of purpose and pride" (383) he rejects the womanly chore of washing dishes and scorns returning to bed because "That's what a woman would do: go back to bed and rest" (p. 383). He does rest, but not in his bedroom. Hightower leaves his house and goes to his garden with Henry IV, which he considers "food for a man" (383), in his possession.

Later that day he returns to the cabin to check on Lena and the child, and finds that "The walk out to the cabin does not take him as long as the walk home did, even though he goes now through the woods where the walking is harder" (384). His return to life has taken him outside of his house, into his garden, and finally into the woods. Before he enters the cabin, he glances at the grove of trees where Joanna's house had stood. From his vantage point he cannot see the charred and mute embers of the house; instead, he sees the big house alive again, bursting with the noise and vitality of life, "noisy, loud with the treble shouts of the generations" (385). His vision of life all around him is an extension of his own psyche. He, too, has returned to life from death. He is outside the shell of his house, involved with someone other than himself. He has not accepted life in its entirety, however. It consists of more than birth and joy; life also includes pain and death. Life, like the ground and the bark of trees in his youth, is "actual, savage, filled with, evocative of, strange and baleful half delights and half terrors" (300). Hightower, at this point, sees only the positive, vibrant things which correspond with his own euphoric state of mind. Joe's death, in his own kitchen, will return him to the full reality of life.

Hightower uses his church as a sanctuary from life, too:

He believed…that if ever there was shelter, it would be the Church… [I]t seemed to him that he could see his future [in the church], his life, intact and on all sides complete and inviolable, like a- classic and serene vase, where the spirit could be born anew sheltered from the harsh gale of living… (453)

Hightower's sermons reflect his inability to focus on the reality of his religion. He is as removed from it as he is from life:

They [the townspeople] told Byron how he [Hightower] seemed to talk that way in the pulpit too, wild too in the pulpit, using religion as though it were a dream. . . It was as if he couldn't get religion and that galloping cavalry and his dead grandfather shot from the galloping horse untangled from each other, even in the pulpit. . . the dogma he was supposed to preach all full of galloping cavalry and defeat and glory . . . all mixed up with absolution and choirs of martial seraphim, until it was natural that the old men and women should believe that what he preached in God's own house on God's own day verged on actual sacrilege. (56-7)

Hightower eventually sees those churches, which he viewed as sanctuaries, are actually "barricades…against truth and against that peace in which to sin and be forgiven which is the life of man" (461). The church is merely an empty building, a dark house, with no life inside. He also realizes

that that which is destroying the Church is not the outward groping of those within it nor the inward groping of those without, but the

professionals who control it and who have removed the bells from its steeples. He seems to see them, endless, without order, empty, symbolical, bleak, skypointed not with ecstasy or passion but in adjuration, threat, and doom. (461)

The present church stands squarely against life, including all natural physical appetites. McEachern and Joanna Burden exemplify the perversion of the Christian doctrine represented by the empty church. God's word is twisted to suit their personal ends: McEachern uses it as justification for beating his foster child. He frequently admonishes Joe against the temptation of the flesh. His blessing before dinner contains not gratitude for the food, but a demand for "absolution for the food and for the necessity of eating it" (144). Joanna Burden goes a step further and uses religion to justify attempted murder. Hightower himself uses religion to satisfy his personal desires, to live in Jefferson in the glory of his grandfather.

It is the intervention of Byron Bunch and Lena Grove, of life, that eventually brings Hightower to this realization. Lena also brings life to Byron. At, the outset of the novel Byron has been a stranger in Jefferson, a transient resident, for seven years. His boarding house residence symbolizes his relationship with the community; he remains uninvolved and anonymous in his rented room. His initial encounter with Lena reflects his desire to stay separated from her and from life, uninvolved in Jefferson and the community. He wants her to be someone else's responsibility: "It just seemed to him that if he could only get her across the square and into a house his responsibility would be discharged" (77). It is interesting to note that the matron of the orphanage felt similarly about her involvement with Joe. When she hears from the dietitian that Joe is part Negro, she wishes to rid herself of the responsibility. Her first thought is to place him in someone else's home at once. Byron takes Lena to the boarding house, but she wishes a more permanent domicile, one associated with her errant lover. The first sign of Byron's psychological progress, his movement toward life, is when he involves himself in her problem and cleans Joe's cabin, helping her to settle in it. He takes another step in the direction of life when he moves out of the confines of his rented room and into a tent placed a respectable distance from the cabin. As he becomes more determined to help Lena, he gains confidence in himself, symbolically suggested by the fact that he no longer stumbles over the bottom step when he enters Hightower's house.

Byron's attempts to establish Lena in a house are futile, however, and as the novel closes the two of them are on the open road. Byron's psychological progress, his movement toward others and life, is reflected by his relationship to houses: he moves from a boarding house to a tent to the open road. He has returned to life by rejecting the norms, the confines of the community--a steady job, a conventional relationship, and a house. Lena Grove is the only character in the book who is not defined in terms of a house. She is the representative of natural, instead of social, life. Pitavy in Faulkner's Light in August, summarizes ft her importance as follows:

It is she who endures and prevails as the serene incarnation of eternal feminity and of the earth's fertility. On the day of Joe's death she gives birth to a child in whom he is symbolically reborn. She restores life to the sterile Burden land, as well as to Hightower, the living-dead, and to Byron, who was trying to isolate himself, working overtime at the mill to avoid the temptations of the Saturday holiday: the invincible Lena, a genuine natural force, drives the one from his impregnable ivory tower and the other from his workshop-sanctuary. (105)

Early in the novel, Lena is described "like something moving forever and without progress across an urn" (5). The image of the urn, which for Joe represented confinement and contamination, and for Hightower represented sanctuary from life, represents life itself for Lena, something neither walled in nor walled out. Her close ties to the natural world are reflected by the few houses in which Lena does stay. Her parents' house is but a log cabin with a dirt floor. When she moves in with her brother, her room is not a part of the main house: "She slept in a leanto room at the back of the house" (3). When she begins to have sexual relations, a natural activity for her, she does so in an unconventional way, since her

activity is unconventional in the eyes of the community.

Even the minor characters of Light in August are reflected by their houses. The house in which Joe was born reflects the psyche of his grandfather, Doc Hines. Both Joe's mother and grandmother are forced to abide by Doc Hines' beliefs just as they are forced to remain within the walls of his house. Doc Hines refuses to allow his wife to go out for the doctor, who is needed to save their daughter Milly's life. Mrs. Hines later relates the incident to Gail Hightower, telling him that when she tried to go out the front door, her husband told her:

Get back into that house. Let the devil gather his own crop: he was the one that laid it by." And I tried to get out the back way and he heard me and run around the house with the gun and hit me with the barrel of it and I went back to Milly and he stood outside the hall door where he could see Milly until she died. (358)

Joe's mother thus dies as a direct result of the grandfather's refusal to allow anyone to interfere with his interpretation of divine will. Doc and Mrs. Hines now live "in a small bungalow in a neighborhood of negroes…in filthy poverty and complete idleness" (322). The walk is full of "rotting bricks and shards of concrete" (327). None of the townspeople know anything about the pair for certain, and the house is forbidden territory, figuratively speaking, for the community. When the townspeople bring a semi-conscious Doc Hines back to his home, Mrs. Hines refuses to allow them near the house: "Just before they reached the porch the front door opened and his wife came out and closed the door behind her . . . She stood before the door as if she were barring them from the house . . ." (327). She carries him inside herself and needlessly returns to lock the front door. The inside of the house is described as "dark and small and rankly-odored as a cave" (329), an apt description of Doc Hines' psyche. His closed mindedness, seen earlier in his conduct toward his daughter, remains unshaken; his tirades against bitchery and abomination continue unabated throughout his life.

He still believes himself to be God's personal spokesman: "going singlehanded into remote negro churches and interrupting the service to enter the pulpit and in his harsh, dead voice and at times with violent obscenity, . . . preaching the superiority of the white race, himself his own exhibit A, in fanatic and unconscious paradox" (325). The decay and isolation of the house reflect the physical and mental isolation of Doc and Mrs. Hines. Even the psychology of such minor characters as Mrs. Hightower and Lucas Burch is developed through imagery related to houses. When faced with a situation they find intolerable, they make an escape through a window. Lucas, confronted with Lena and his baby in the cabin, finds himself trapped by the representative of civil law, the sheriff, and by his moral obligation to Lena and the child. He cannot make a direct exit, and after mumbling a few jumbled words to Lena, he climbs out the back window of the cabin. Mrs. Hightower, driven to the city in a vain attempt to find love, eventually escapes from an intolerable life by jumping to her death from a hotel window. The rented room in the hotel is as empty of love as was her relationship with her husband.

These unhappy bedroom scenes are contrasted to the final scene of the novel, in which a happily married couple is experiencing normal sexual relations. Most critics tend to ignore this scene with its addition of a new character in another location, but the change in character, location, and atmosphere serves an important function in the novel. Harry Nash, in his article "Faulkner's 'Furniture Repairer and Dealer': Knitting Up Light in August," offers three key reasons for ending the novel with this couple:

Most obviously, they help to restore a normal continuity and stability (in social and sexual terms) . . . They project a vigorous natural intimacy . . . They reconstitute the novel's more or less central focus. The certain apocalyptic intensity of focus of the preceding twenty chapters is thereby dimmed, diffused, refracted, reset. (529)

This change of pace serves a Gothic purpose as well. As Elizabeth MacAndrew in The Gothic Tradition in Fiction observes, "When the tale is no longer set in the distant past, a system of 'nested,' concentric narration maintains the illusion of a strange world, isolating a symbolic landscape within the ordinary 'world'" (48). The furniture repairer and dealer return the reader from the closed, symbolic, Gothic world

of Jefferson to the normal outside world, making the world of Jefferson more alien by comparison.

Conclusion

The imagery pertaining to houses throughout the novel shows that although Faulkner clearly used them in the Gothic manner, as a symbol of the inhabitant, their symbolism is more pervasive and complex than this alone. In addition to reflecting the psyche of the inhabitant, the houses of Light in August also occasionally represent the psyche of the perceiver. The Burden house is but one example of this. As a symbol of Joanna, the house represents both her body and her mind, and is the scene of both her physical liberation and her entrapment by the past. But to the townspeople the Burden house, as the house of an abolitionist, threatens their way of life. For Byron, the smoke from her burning house symbolizes the end of his isolation from life. For Joe, her house evokes the feelings of contamination and confinement he associates with women. Additionally, houses are used as symbols of social life, as opposed to the natural life represented by the outside world. This use is most clearly seen by Lena Grove's relationship to houses and the natural world. As a symbol of the natural, Lena is essentially houseless. On the other hand, both Joanna Burden and Gail Hightower, although isolated from the community and from life by their "dark houses," nonetheless discover life, or a sense of community, in their kitchens.

Joanna finds Joe there, and is physically awakened; Hightower's kitchen, where he encounters and attempts to save Joe, becomes a place of life for him, the scene of his psychological' rebirth. But these wombs, to use Fiedler's terminology, are also "tombs" in that both Joanna Burden and Gail Hightower, as well as Joe, are destroyed as a result of their discoveries. Their deaths are symbolically appropriate in a Jefferson which lacks the true spirit of Christianity, as symbolized by the empty church steeples, even the Church is a "dark house." Since the buildings throughout the novel are so deeply symbolic, "Dark House," with its Gothic implications, remains an apt title for Light in August.

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SOCIAL AND ECOLOGICAL ISSUES IN CORMAC MCCARTHY'S THE ROAD

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ABSTRACT

This paper explores Cormac McCarthy's Pulitzer-prize winning book, The Road, is part of Eco-dystopian fantasy and American road fiction. The novel portrays, a dad and son, struggling to survive a post-collapse world where a determined nose-dive has taken place between the climate and the society. Readers are offered glimpses of a potential 21st-century world where many familiar civil structures are in ruins as the pair head southeast on their trip. Throughout the book, in this baffling post-natural and post-capitalist setting, McCarthy needs his protagonists and readers to recreate value structures, interpersonal ties, and judgments of themselves, and it also discuss the comparison between John Steinbeck's The Grapes of Wrath with The Road, both are dealing directly with the ongoing natural calamities and unrest social and political situation in America. The Road is not a dystopian novel unlike the general argument this paper analyzes hidden prophecy and its warning to the great upcoming disaster of mankind.

***Keywords**: Global Warming, Vietnam War, Steinbeck, Dystopia, Armageddon.*

Introduction

The Road can be called a dystopian update of John Steinbeck's 1939 book The Grapes of Wrath, which also earned a Pulitzer, as a story profoundly embedded in his day's issues and disputes. Both texts recount the struggles of protagonists in South America, where hopes of opportunity and development have been challenged in the face of the ecosystem and socioeconomic disasters. Although Steinbeck's plot portrays the severe drought epidemic that throughout the Great Depression the Joad family brought the Household from West to Texas. McCarthy's novel takes on the international environmental epidemic, predicting the global market collapse that occurred after McCarthy wrote his fiction in the process. While Steinbeck's story pins its trust on the kindness and consciousness of the lower class of sharecroppers and the society who understand that their only way of existence is as a single community, the book of McCarthy gives minimal potential. The family promises only a fragile and uncertain refuge in The Road, the environment is beyond fix, and the natural world seems to have changed for the nastier forever.

Political and Financial Upheaval

The Grapes of Wrath tells the story of the political and financial upheaval resulting from individual disassociation from non-human existence as a Depression-era American document. Met with an intensely dynamic market, landowners were forced to transform their farming activities in the 1920s and 1930s, replacing their jobs with more powerful machines. In brief, though it works, as production grows and costs decline. The investors soon discover, however, that continued support and encouragement is demanded by the method. "The bankers"do not breathe oxygen," they "keep breathing money," as the author states (32). The private bank, the beast, must still have huge profits. They will not wait. It eventually expires when the creature finishes rising. One shape cannot remain here. The focus on development and income in Steinbeck's book has dire ramifications for the soil and the human communities that rely on it. The ecological crisis that occurs is exposed as the unforeseen effects of the hyper-development of rampant globalization.

Similarly, throughout The Road, the dystopian world stresses a more comprehensive societal structure in turmoil. Geologist David Harvey discusses these interlinked questions, claiming that "all social and economic projects are environmental projects and conversely," such that with all we speak and do, a perception of "life and the atmosphere is omnipresent" (174). For Harvey, "essential analyses of the relationship with environment are critical assessments of community at the same time" (174). The protagonists experience a human and natural tragedy in both books, or what Donna Haraway terms a 'nature-heritage' catastrophe (26). Instead of having both entities apart, Haraway refers to the emotional connection that binds the two. Living just inside evolutionary biology really is about

living and working within societies in existence. It's more about living inside culture while also being within the marvel of the mystery of existence. The American Government suffered the greatest natural catastrophe in its record in Tornado Katrina, a year prior The Road was written, where class and wealth were defining variables in the degree and nature of tragedy that existed. As the cover of the book Chester Hartman and Gregory D. Squires aptly puts it, "there is no such occurrence as a natural tragedy." recorded human history undoubtedly led to the complexity of the New Orleans devastation; from global warming and years of slapdash urban planning before the disaster to government ineptness and negligence after the devastation, Tornado Katrina cannot properly be considered a "natural" phenomenon (2–3).

Climatic Change

McCarthy's work, like The Grapes of Wrath, is a tragic story, a terrifying description of ecological collapse in the sense of broader societal failures. In The Road, as the author explains the specificities of this post-dystopian world, the turmoil in the natural environment is mentioned in one phase. McCarthy writes, "Much of it shadowless lacking any function, the skeletons of dead animals crawling in the rinses. The road plummeted through a collapsed kudzu forest—a bog over the river where the sick reeds lie" (177). With a revealing connection to the oversized dead bindweed that covers the road and hinders the trip itself, the sequence provides some of the few depictions of real plant existence in the book. In the entire united states of America, this native weedy crop has a complex heritage; in the 1870s, kudzu (Pueraria lobata) was imported from either imperial Japan or South Korea and gradually became common in the American South for many household landscapes throughout the country. Kudzu was used to control deforestation on rivers and farms in the South throughout the 1930s, with the United state. The Agriculture Department is also paying villagers to cultivate this amazing soil protector. By the 1940s, kudzu, capable of rising nearly a foot per day, occupied more than a quarter a million square miles, ultimately proven to be that much of a positive thing.

McCarthy explains what may be considered climate change blowback, focusing on the natural and social past of resistant crop in the Southern United States, where social activities in the soil, in this scenario agricultural policy and economic forces, wind up causing unintended issues that could have potentially overshadowed the initial worries that were meant to be tackled.

Servitium of Machines

In The Road, the ravaged terrain in which the subject's trip is also polluted with the cumulative garbage of the industrial society of the 21st century, a warning for many American citizens of the greed and pollution that defines everyday existence. McCarthy places the grocery supermarket trolley in the story as a significant picture to contemplate in this sense. As the Joad's family drives in their vehicle from Oklahoma to California in pursuit of new futures, the father and son drive across the landscape in The Road, pulling a collection of deserted shopping carts containing discarded food products, clothes, household goods, and certain cast-off things they have accumulated throughout their travels.

Like Joad's vehicle, in The Road, the shopping trolley carries on a variety of nuanced definitions. The probability of movement and evacuation is portrayed by both the truck in The Grapes of Wrath and the trolley in McCarthy's story; no family can survive the devastation without these items. Around the same moment, the mechanism whose failure has produced such despair is portrayed by both the automobile and the shopping trolley. For e.g. The car is a result of the hypermodernity of The Grapes of Wrath, contributing to the impoverishment and expulsion of the Oklahoma plantation owners from the property. Ironically, with the old truck portrayed as nothing other than a part of the family, the new base of their mutual survival. The Joads' assumption that science could somehow rescue them by fixing the issues of their families in the western world. Jared Diamond examines this assumption as a "display of faith centered on a flawed assessment that innovation has somehow resolved more challenges it has

produced in the past years" (504) in Collapse: How Societies Choose to Fail or Succeed . Elizabeth Kolberg refers to the low faith that sometimes circulates in mainstream science evaluations in Field Notes from a Disaster: Man, Ecology, and Global Warming claiming that there is an immediate connection between "what we understand and also what we decline to understand" (3). Current optimism in technological advancement and new innovations often implies a desire not to understand what Diamond considers "the belief that technology can mainly operate to solve current difficulties from tomorrow onwards and will stop to produce new challenges" (504).

The automobile makes no such pledge in McCarthy's The Road, nevertheless. Life will not maintain new tech in the wake of tragedy; a fact demonstrated as the boy misuses numerous bits of scavenged machinery. Once he misses to switch off the gas jar valve, which makes their salvaged oven worthless, the kid later drops his father's gun abandoned on the shore, and the dad is compelled to pull back to recover it. With certain skepticism, McCarthy's latest views of tech swapping the Joads car with the operated shopping trolleys that provide a less than an ideal mode of transportation. At one stage, the kid questions his dad if they should depart after a pause in their journeys. By giving him a lift in the wagon, the man answers. The child refuses to use the supermarket trolley as a mode of travel and handles it with confidence. In a way, the reaction of the kid is taken as a hint to his increasing maturity, a move that indicates his frustration with the dad's fussing. The reluctance of the kid to accept the trip often leads to a specific skepticism in the text about the supermarket trolley as an item of character assistance. The trolley is a sign of the excessive enthusiasm that dominated contemporary U.S. economy, with its over-extended, austerity citizenship, many of whose existence were more endangered by "hyper abundance" than by some kind of poverty.

Green Consumerism

In "The Road," the central characters travel along with their supermarket trolley across the scattered areas of a dystopian America, providing what could, in essence, be called a "green consumerism" satirical and sporadic approach. Both characters enter the outskirts of the region and come across a store with scrambled parking.

The vehicle must be discarded on the car park for McCarthy's protagonists, as living standards have now rendered this once omnipresent asset worthless. The vehicle provides no further mobility and escapes the recession, much like the shopping trolley no more holds the new items in the supermarket. Only what will the ruined cities screen and rescue. The survivors have to contend with less; one axle begins to pinch on the cart, so they have no chance of repairing it.

Even if they look for a good location, dad and son don't reach a new Eden, as the American road novels promise several times. Instead, they are left with a collapsed and redemptive planet. There is no guarantee that they will travel to heaven or make it like it used to be. At some stage, McCarthy states that the guy knew that he was approaching great doom with a wrong front. "He thought it would be better if he knew that the world was becoming darker every day" (213). The world in which the protagonists reside has changed significantly, and the immediate challenge is to locate the essential elements that will keep their lives bearable yet significant.

Advertisements no longer inspire customers with tempting assurances about their commodity under this modern landscape. Rather, they repel and reprimand the observer and only show vanishing indications of a future missing. (127-28)

Past is not Dead

In The Road, however, the atmosphere retains the fantastic remnants of the goods which previously drive consumer consciousness but which now only remember what had occurred before, while some native Americans have invested much faith in consumerism, much as the kid himself often did, it no more assumes that these investments would serve a positive role in his current existence. As Susan Stewart points out in her study of the stock, while the activity of collecting items that we love promises to bind us including prelapsarian yore without flow and tradition, the task of

accumulating a set – the forgotten consumables of the past existence here – often connects us to the "land of the dead" (57). These products are indicators of what has once been and are also symbols of this world's collapse. The towns are plundered and tired in The Road, which can accommodate only a few foragers who are "carrying charcoal, anonymous foodstuffs in nylon networks such as shoppers on the shores of hell" (181).

Frederick Buell explores the manner in which a catastrophe specter has been so integral to United states contemporary society that it is domestically embedded into our daily lives. In the moment where many politicians are ignoring and deluding themselves regarding environmental issues and in the time when a strong anti-science campaign is seeking to disprove current thought about subjects such as climate change, our conviction that we ultimately face dire ecological issues always appears to be separated through the everyday life of the Americans. As he states, "in reality that the environmental problem has been a natural part of the human race today, particularly as it has constantly been challenged and rejected" (xvii). Buell reflects on what he terms the conceptualization of catastrophe, the forms in which communities attempt and recognize and handle crises. In general, the end itself and the elements contributing to the crisis have become the priority.

McCarthy's book reflects on the project of surviving through loss, tracking the main protagonist's path across a ravaged landscape while trying to feel the effects of life. In this manner, McCarthy writes "over the end" to focus on the significance of tragedy and what was missed and creates what Kenneth Lincoln, the critic, called "floor philosophy" (165). On The Road, the world's destruction is not a potential occurrence about America, but a catastrophe was already occurring. The readers and the protagonist's duty is to envision the next event to come, to be reclaimed, and to stay behind so that culture can be rebuilt and human connections to nature and one another can be re-conceptualized.

Therefore, McCarthy's book adds to Susan Sontag's vision of a tragedy seen in sci-fi and war films during the second world war. For Sontag, literature and film catastrophe narratives expose the great social hysteria of the cold war years in a manner that makes it possible for viewers and fans to "participate in the imagination of living through death and the destruction of cities, the extinction of society itself" (212). Such disaster fantasies carry tremendous cultural and psychological power.

While these catastrophe theories usually mold nuclear hysteria and concerns of the cold war, Sontag states that the rest provide only minimal societal commentary while presenting viewers with an "extreme moral simplification" of issues (215). The abuse of tech as a means of relieving the hero scientist from a Utopian act that recovers the destiny of the planet appears to be included in these catastrophe narratives. However, this is normally achieved by the stories that kept unchanged aspects of the very hyper-modernity and technology involved in the crisis.

Geographer Mike Davis spread Sontag's comments on the collective paranoia of the cold war by exploring the creativity of the millennium tragedy. Davis points out in Dead Cities and Other Stories, a culture of paranoia that has led to the emergence of Fear research as an academic field of interest by the turn of the 20th century, "acute hypochondria" which afflicts many Americans.

Replacement of Inequality

The issue for Davis, as well as other media commentators, is that several people in the United states have misguided their concerns by building this modern fear with a broader "replacement of real inequality" (5). Therefore, he concentrates on the interaction between accelerated modernity and socioeconomic inequity, the unhealthy Freudians, and their return to marginalized citizens. Davis addresses the far broader secret problems of American existence utilizing the research of the 20th cent Marxist Thinker Ernst Bloch. For Bloch, the fears of the contemporary era are directly linked to the innovations of the "urban technology," with the uncanny arising from the modern "non-integration with nature" or the mechanization "detachment of the natural landscape" (8). In his analysis of "lost cities," Davis extended the debate to demonstrate the harsh implications, particularly for less

fortunate groups and communities, of the underpinned existence following an unequal hypermodernity.

Buell is also concerned with the current culture of panic in the United States, especially as it affects current environmental stories. He suggests that the "environment wars" that are raging today should be seen as an unresolved work of the late 1960s and early 1970s social revolutions and a continuation of the 1980s. "Cultural wars," Buell states, could not occur without a wide national critique of the current environmental revolution itself, the perception that the US has recently "entered into a rapid decline," and that the country is not a total one (8). The study refers to the "decline appears in many fields: global power and reputation; world economic confidence; domestic economic confidence; social stability and moral; cultural cohesion and pedagogical excellence" (8). Latest bestsellers like Thomas Friedman's Hot, Flat and Crowded: Why we need a Green Revolution, and how America can renew the feeling. He suggests that holding the United States on track would also need to restore the nation's general economic wellbeing and its democratic prestige in the globe with the assistance of a modern green movement. Ecological issues provide a social foundation for Friedman, whose crisis imagination calls for a saving economist squad who can deliver reborn environmentalism in order to address the challenge of international American influence.

Exceptionalism in The Road

As a hyper-abundant allegory of America, The Road challenges many key constructs of national character, particularly US exceptionalism. At a moment when the financial system and the climate pose a set of convincing obstacles in the post-19 November 2001 war on terror, many American people are battling to re-define their national identities and the position of their government on the planet. The US is no doubt an anomaly, a national paradigm, or a special position model in the past of nations in McCarthy's book. The author more positions the nation as a country in recorded existence, portraying a well-known tale in a lengthy collection of civilizations. Then the Road reconstructs the narrative period in an obviously old and still very modern atmosphere of the book at once. For e.g., McCarthy says the father and son are like "pilgrims to a fable"[11] or as the "Last Host of Christianity"(16), going ever "in an ugly, time wind in the void"(11) in the late ace of the universe, trying to make sense of the "fossil winds in a dried sludge"(12) and the "mummy dead everywhere" (24). McCarthy stands alongside the primitive as well as the pharaonic in the American geography of The Road; his setting is either Homeric, biblical, or contemporary.

Lincoln explores The Road on which it situates the fear of contemporary America along with past "end times" myths, and describes "the charred consequences of denied environmental consequences" by the present "Industrial Military Blowback" (164). In repeats and fragmentations, the vocabulary of The Road is incantatory, like an old document exhumed in bits and pieces in the mountains, as if the story itself did not completely withstand the tragedy. Lincoln proposed the "writing of screens, flakes, fumes, fractals, fragments of bones, rotting flesh and sallow bone into a gram mark of postholocaust. .. Is this an unbuilt textbook for the survivors of the days after that scarcely numbered? " (165). As he states, vocabulary itself is met with a big job in the book, considering the horrific scenes of crime, misery, and torture. McCarthy's phrases must be fashioned with edge, power, pace, and stamina toward screen despoliation, character desperation, exhaustion of the reader. The language tries to epically rescue a collapsing planet, a mankind that is furiously mad," claims Lincoln. "How does a reader understand more about the story? " (164). The oddly poetic writings of McCarthy in The Road encourage readers to begin the journey through even devastating discoveries. There must be some help to them, for the pictures we place in our heads “are always there," as the man says to the kid (12).

Road Story Routing

The relentless flow of citizens in the novel ties The Road with the wider tradition of the past of the road novels. The novel uses conventions that can go back to Homer, Chaucer, and Cervantes, as well to US literature from the

20th century in an old as well as modern setting. While the father and son experience a traditional trip, confronting numerous dangers and a variety of adversaries, The Road can also be explored in the light of recent trends in the contemporary American road novel. In both cases, David Laderman sees the dual character of the road as a metaphor. The road for him is at once a core "part of American society and culture, and a fundamental sign of creation, of ambition, independence, and fate" (2). The road itself encompasses divided definitions in these ways.

McCarthy's road still includes all choices, and although the moving path itself does not promise a future, even the two characters cannot support existence in the destructive ecologies of this modern planet. At the conclusion of the story it is not obvious which destiny the boy would have when the dad dies, leaving his boy with adoptive parents who could hold "a fire" or who couldn't.

The Road gives another ironic image of the road story. During the time since World War II, Katie Mills explores what she terms the "democratisation of mobility," as more Americans were granted the opportunity to buy their own vehicles and were on the street more than ever (2). She claims that in the meantime, road literature and films used "automotive as a metaphor in defence of major social uprisings of the post-war period" such that the two associated attributes which [can be found] in the word 'automobility' are placed "as carriers of the Americans sense of themselves as independent and mobiles" (2–3). However, McCarthy's text is an automobile-free road book. In this nation, the hope of technology has been missed. A wasteland with numerous discarded and rare cars evident on the highway reveals the last indication of the motor community here. "The rugged wheel rims lying in a rigid, grey, molten rubber band in blackened metal rings" (273).

Mills refers to how United states subcultures utilised the tradition of road novels after the Second World War as a means to envision fresh prospects beyond popular society. McCarthy also reviews the genre in the after-collapse landscape of The Road according to status and economy, whereas the cart substitutes the cart as a modern form of transport. The guy of McCarthy's novel smartly alters a food cart to meet his new needs like the "tricky out cars made in the post-war neighbourhoods and suburban garages," (3)

In a motion that corresponds to other modes of motorised travel, often stated in the background of the road, the man regrets not saving a mirror from his preceding motorcycle. In an amusing manner, the man-rigging cart often tells us of the fortunes that homeless people sometimes create to live in the streets. Local shop owners have lately started to lament over the plight of their lost cart, many of which are situated miles removed from their initial parking lots. These carts have appeared to be born again by homeless artisans, who have experienced forced mobility and using the cart as an indoor vehicle and as a vehicle for moving the rescued goods which had previously been cast off as worthless.

American history on the road, according to Mills, offers resources for "philosophical meditation" (18), since they usually discuss topics such as "autonomy, mobility and identity" (12). Mills illustrates how road histories "usually narrate a conflict, a disturbance that motivates a character to follow the path" (12). These stories have taken many paths throughout the development of literature in America. The 1930's tales of displacement and dislocation, for example, which came about through the depression, played a significant role in the genre's growth such that post-war Beat authors noticed that the Grapes of Wrath and other "tragic tale of the migration of the Dust bowls into optimistic after war transformations" were drastically changed (15). The Road, thus, is possibly a nod to the famous counter-cultural road stories of bikes, such as the film Easy Rider of 1969, where the dad forgets he mounted in his last recovered cart. However, the post-disaster road-novel by McCarthy seems to be a reversal of the sensibilities of the 1930s, not taking its lead only from revisionist Beats, when mobility was not largely an option but a survival necessity and travel was carried out with lower exuberance.

Any critiques of the category are less concentrated on their pledge of liberation by means of road independence and comment on how the style incorporates possible reactionary

elements. Stephen Cohan and Ina Rae Hark, for example, explored American history as a tool to "promote a male escapist fantasy that links masculinity and technology" and as an awkward yet sexually dependent narrative tradition (3). In several American road tales, Timothy Corrigan often points at what he finds as a storytelling absence of women. For them, the genre has also been influenced by a male paranoia arising as a reaction to feminism and modern post-Vietnamese gender classes. The genre also functions as a reactionary tale of male power's descent through "the hysterical but impossible necessity of stabilising male identities within history" (138).

McCarthy's text could provide a condemnation of such male paranoia rather than actually joining in these main developments of the road novel. Although The Road features only certain women characters that play a small part in the plot itself, the text gives information into how the road past may really vary between males and females, and why those characters would choose to give up the trip oneself. In The Road the boy's mother appears just before she kills herself. At the opening of the chapter. She informs the man she does not see herself as a survivor, but rather "the dead walker in a horror movie" (55). In this, the woman warns the guy that eventually she is going to be found and murdered: "They will rape us and slaughter us and we will be eaten and you do not face it," she warns him (56).

While the dad and boy go on without women, they do so because of the agency of the female rather than their passiveness. The decision of the woman to kill herself and leave her journey does not derive from a post-traumatic reaction, but from another collection of embodied experiences which gave her different awareness and perception of what the potential could mean. The woman informs the man that the night her son had been born, "Hence, do not call for grief now. Nobody's there" (57). She picks the conditions of her own demise from the terms she thinks to be a more dehumanising and tortuous conclusion in a separate movie plot and narrative.

In a certain sense, women may potentially make a more rational prediction of what is the future than men. Existence on the street, with some more torment than others, is full of distress and agony. The guy and the child at some stage duck and wait as an army party of men 'go by two hundred feet and shudder softly on the field. Tramping. - Tramping. Behind them were waggons pulled in harness by slaves and piled with battle and then some people were pregnant, maybe a dozen in number" (92). The inference, we hear late in the book from an abominable moment, is that shortly after birth their children will be consumed. Although father and son manage largely to avoid these destinies on the street, most people experience horrific pain in the shape of cannibalism, starvation, drought and abuse.

Conclusion

Finally, McCarthy's earlier time novel No Country for Old Men can be interpreted as a supplement to The Road. Both stories act as contemporary western road novels and solve many of current modern America's similar problems. No Country for Old Men, with it's 2007 adaptation to the Oscar winner directed by Ethan and Joel Coen, is interpreted as an allegory of the dilemmas that the United States recently faced in the Iraq War and as a false narrative about contemporary America. There is no country for an old man in Western Texas at the beginning of the 1980's with Ed Tom Bell, a small-town sheriff who cannot address the current challenge he now confronts in a sufficiently conventional manner through law and order. The social environment that he once encountered has shifted dramatically and the central character tries to keep this perplexing modern setting. Ultimately, Bell's quest for a reneging hit man proves failing because the enemy has always remained out of control and the lawyer's perception of the offence is always one way ahead. The investigative instincts of the Sheriff and his willingness to grasp the circumstance around him no longer help to monitor the danger, and he is finally officially resigned to dropping his quest.

Anton Chigurh as the villain represents an evidently nonsensical potential threat; he is a humiliating outlaw which operates under none of the old laws. Instead, Chigurh actively seeks fresh, creative ways to erase his goals when controlling the rules. The others in the narrative begin to wonder at the ignorant ways of the hit guy. He cannot be captured, intimidated or

unintelligent. But Chigurh is still respected as a man of values in mocking national ideologies and ethnic conventions. This is because the sheriff and other characters in the document refuse to grasp these concepts. The plot itself is a curious storey with a very bizarre rogue and the description of its genres is as confounding as the dilemma itself.

The characters in No Country for Old Men are so puzzled as Americans are perplexed by such shifts in the new millennium. Just as in No Country for Old Men readers need to recognise this new kind of danger, in McCarthy's The Road Post-Disaster Account they also need a new truth. In this regard, the McCarthy text draws on Steinbeck's previous novel's indictment of a modern time in which economic and social crises are nevertheless identical. Much like characters in The Road, the predicament of Joads is terrible: the capitalist system declined to die, the bosses were hesitant to acknowledge the labour misery and the shareholders had no substitute. McCarthy takes the readers on a complicated journey through a radically changing social and natural environment, with less of the well-observed optimism which moulded Steinbeck's text. Regulations have changed and the ecosystem has been changed ever more. What remains is the fight to reinvent the United states and our position in the planet at a moment when political identity, populism and environmental issues all change quickly what we once believed we understood.

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VICTIMIZATION IN STEPHEN KING'S GERALD'S GAME

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ABSTRACT

Sexism, discrimination and particularly abuse of women, is a problem that continues to plague North American culture. Similarly, the books of American author Stephen King also contribute to enhancing the prominence of crimes against women as a serious issue, notably his novel Gerald's Game. In Gerald's Game, King pulls out his most dramatic images of gendered violence thus far with Jessie Burlingame. In the novels, Jessie endured sexual, physical, and domestic abuse inflicted by her spouses, fathers, and the patriarchal culture in which she dwells. As a method of illustrating the intrinsically violent character of the technologies which establish and police gender norms combined with the emotional anguish that frequently arises from patriarchal violence, King handles this story differently by using an aspect of the Gothic heritage: a solar eclipse. The eclipse signifies and therefore opens up a psychic, and invites the reader to look upon gendered violence as being an experience shared by many women. While Jessie resorts to using violence to revenge against her abusers, rather than encouraging violence as a suitable reaction to patriarchal oppression, the novel encourages admitting, discussing, and eventually rewriting narratives of trauma as strategies of non-violent vengeance. In this way, King's books constitute a feminist intervention that may operate alongside patriarchal society to further stress the issue of crimes against women as a current issue and, possibly, free up the space essential for evoking societal change. This article will investigate the implications of the eclipse in Gerald's Game in connection to gender and its historically hegemonic masculinity construction in North American culture, personal and society pain, and the resulting violence, relying on the conceptual writings of Laurie Collier Hillstrom, Kate Manne.

***Keywords**: MeToo, Patriarchal Society, Sexual Violence, Victimization, UFO.*

Introduction

The eclipse serves as a metaphor for Gerald's Game. Theresa Thompson and Carol Senf also examine gendered violence and its representation in Gerald's Game and Dolores Claiborne in Imagining the Worst: Stephen King and the Representation of Women, one of the most extensive assessments of King's representations of women to date. However, they do not go into detail about the eclipse's significance. In Rituals of Male Violence: Unlocking the (Fe)Male Self, Thompson briefly mentions the eclipse in relation to the feminine mystique, a "myth that dominated the 1950s and 1960s cult of the domestic," but ignores the eclipse's presence and how it might be linked to the violence that Jessie and Dolores witness and eventually participate in (48). Senf acknowledges that Jessie and Dolores connect during the eclipse in Gerald's Game and Dolores Claiborne: Stephen King and the Evolution of an Authentic Female Narrative Voice, but sees the eclipse primarily as a reference point to outline the chronology of progress women have made in achieving "greater political power, economic equality, and personal autonomy" between 1963 and the mid 1990s (100). The supernatural aspects of the eclipse are mostly ignored in both pieces, including the psychic connection it makes between Jessie and Dolores, the power Jessie and Dolores receive as a result of the psychic space, and the intertextual connection it forms between the novels themselves. This is odd because an examination of the eclipse is critical when considering portrayals of gendered violence in literature, a topic that runs across both pieces.

To say the least, the eclipse is a complicated phenomena in the literature. The eclipse not only exposes the brutality caused by gender standards, but it also blurs the lines between the novels, bringing Jessie and Dolores closer together in their ordeals. The significance of the eclipse in respect to gendered violence, generating solidarity through shared mental space, and the linkages it displays are explored in this section. Of course, the novel Gerald's Game works well on its own and has a stronger impact in terms of critiquing patriarchal social structures.

The moon, a literary symbol quite well for the link to the feminine, is at the center of Gerald's Game. Min Shen in an article titled Quite a moon!': The Archetypal Feminine in Our Town writes "[A]part from the cyclic phases associated with menstruation, life, and rebirth, the moon's trek across the night sky also

promises creative inspiration and qualitative timing, which leads to feminine wisdom" (2). Shen explicitly equates the moon with feminine traits in this passage. However, the novels are linked by a solar eclipse, in which the moon eclipses the sun: a celestial body traditionally associated with the masculine in traditional imagery. If the moon represents the feminine and the sun represents the masculine, a solar eclipse is a brief time when the feminine triumphs over the male. In Gerald's Game, this appears to be the case in the most literal sense, as the eclipse represents the point in time when Jessie's tolerance for abuse is reached and she refuses to be a victim.

Reflection of North American Society

Jessie uses violence to retaliate for her terrible circumstances, thus reversing the usual male-female power dynamic in North American society, a pattern that has been entrenched, indeed deeply internalized by both men and women.. It is worth noting that even when gender roles are reversed, the result is still violent; this implies that men and women have been socialized to accept and even expect violence in their social and personal life, the workplace and the home, both physically and mentally.

The eclipse, which highlights the importance of creating space in which victims might establish solidarity, is used by King to map out the mental connection onto the novels themselves. In Gothic and Gender: An Introduction, Donna Heiland writes "at its core...about transgressions" (3). By employing the eclipse to transgress and shatter the boundaries between Gerald's Game and Dolores Claiborne, King enhances this fundamental, transgression aspect of the Gothic. As a result, between the novels, a permanent psychic space is created. It is impossible to say whether this space generates a sense of solidarity in the reader in the same way as it does between Jessie and Dolores.

Ruth Neary, an old college roommate, is one of the voices who inhabits Jessie's psychic space in Gerald's Game, and she wisely reveals the following to Jessie: "[t]he total solar eclipse lasted just over a minute that day, Jessie...except in your mind." It is still going on in there" (114). Indeed, Jessie's childhood experience of sexual assault has an impact on her later life; she is tormented by sexual violence long into adulthood as her husband, Gerald, takes on the position of abuser that her father previously held. Jessie's experience could be classified as punctual trauma, according to Greg Forter's discussion of trauma in Freud, Faulkner, Caruth: Trauma and the Politics of Literary Form: "historical events of such singularity, magnitude, and horror that they can be read as shocks that disable the psychic system" (259). While Forter acknowledges that punctual trauma is frequently used to describe collective, historical trauma such as the Holocaust, he also claims that "critics have marshaled it to illuminate a range of important social phenomena, from rape and child sexual abuse to certain experiences of racist violence and even of class domination" (260). Although punctual clearly refers to a certain point in time when an event—in this case, a horrific experience—occurs, it also implies that the event happens on time. As a result, the term punctual trauma may also allude to the terrible reality that trauma is something that is to be expected and is not an uncommon occurrence. Jessie's punctual trauma occurs when her father, Tom, sexually assaults her during the eclipse when she was a child on Dark Score Lake. “[h]ow many of the choices…made since that day had been directly or indirectly influenced by what had happened during the final minute…she had spent on her Daddy’s lap, looking at a vast round mole in the sky through two or three pieces of smoked glass? And was her current situation a result of what had happened during the eclipse?” (207). This statement, when combined with Forter's definition of punctual trauma, captures the paradox of trauma: with trauma, one is attempting to both reveal and conceal the experience they have endured. Even if one is unaware of it, one's choices may be influenced by this paradox; for example, in Gerald's Game, it is revealed that Jessie's husband, Gerald, is a well-off lawyer like Tom, whose smile "reminded her of her father’s smile" (2).

Past is not Dead

Jessie's decision to kick Gerald in the stomach and provoke his heart attack when he tries to

rape her, similar to how she married a man with traits similar to her father's traits, could be linked to the assault that occurred during the eclipse; Jessie's repressed rage from the childhood assault is released in the form of violence toward Gerald. Although the act of murdering Gerald confines Jessie to her bed with no means of escape, it also forces her to subjectively relive her childhood experience of being abused through memory. This subjective revisiting allows Jessie to finally accept that she was mistreated and exploited by her father, leading to Jessie gaining agency by physically releasing herself from the chains that bound her to her bed and psychically releasing herself from the shackles of her childhood trauma.

Jessie's subjective reliving of the eclipse through memory helps her reclaim her sense of agency—which she lost as a child during her objective experience of the eclipse—by allowing her to reconnect and communicate with other female figures from her past, including an old college roommate, her therapist, and her adolescent self. Jessie is encouraged to liberate herself physically from the handcuffs and mentally from the horrific memories of the assault by the subjective reconnections. Furthermore, King's depiction of the relationship between Jessie's physical and emotional liberation argues that one must first admit that they have been abused before rejecting to remain a victim. After accepting that she was abused by her father, Jessie is able to oppose the repressive, patriarchal systems that caused her victimization in the first place; this is proved during her final face-to-face meeting with Raymond Andrew Joubert, who embodies patriarchy itself.

Subjective and Objective Trauma

In Gerald's Game, Jessie has both an objective, physical experience of the eclipse as a child and a subjective, psychological revisiting of the eclipse as an adult, implying that the eclipse is doubling for her. Throughout this section of the study, the doubling of the eclipse is discussed. Also, consider Dolores as Jessie's physical double. Although the double is more intricate in Gerald's Game than in, say, The Dark Tower Series (1982-2004), its presence cannot be overlooked, as it serves as a metaphor for the problematic nature of gendering and its relationship to trauma alongside the eclipse. In Gerald's Game, the double will lay the groundwork for examining Jessie's objective and subjective trauma experiences, as well as how they relate to her eventual recovery of identity and agency.

King’s use of the archetype in Gerald’s Game. Fred Botting in Gothic discusses the double as representing “gothic dynamics of internalisation and externalisation” (102). In Double Trouble: The Doppelgänger from Romanticism to Postmodernism, Eran Dorfman suggests that: …the double [is] used to represent an undesired element or trait of the protagonist, such as immorality, greed, or sexual desire. This element is projected outside onto an external figure, which is identical or attached to the protagonist (mirror image, shadow, etc.). But this figure, the double, gradually takes over and finally destroys the protagonist through a last moment introjection, in which the undesired element returns to the latter at the moment of death. (12)

It is obvious from the previous definitions that the double is strongly invested in both the internal and external worlds. Dorfman's usage of the phrase unwanted element repeatedly demonstrates that the double has negative connotations associated with it. However, what is deemed an unpleasant element in one situation may not be so in another. Desirability and other social norms are established by social norms, and these desirability standards are also linked to gendered norms. For example, it may not be desired for a woman to retaliate against her abuser, speak publicly about her experiences with her abuser, or refuse to remain a victim, particularly if her abuser is striving to keep power, as Jessie and her father are in Gerald's Game. The link that King establishes between Jessie and Dolores leads us to conclude that Dolores is, to some part, Jessie's duplicate, and that the unwanted element that Jessie internalizes and represses while Dolores externalizes and expresses is fear.

Gender Imbalances

Fear connects Jessie and Dolores, demonstrating a basic defect in society as shown in the novel, which parallels a social reality for women: exposing an abuser is regarded as intrinsically immoral, improper, or

even deadly. A woman may opt to remain silent out of fear of being accused of sexual or physical assault. This fear is what motivates Jessie to keep quiet about Tom's assault rather than confront him about his sexual misconduct. Jessie is only a child when the eclipse happens, thus she reacts to the assault like a child would: she is perplexed and repelled by her father's behavior, but "[tries] to smile" during the ordeal (189). Tom not only sexually assaults Jessie, but he also emotionally manipulates her by telling her that if he tells her mother about the encounter, he will be "sure—well, fairly sure—that [Jessie]" will not be held responsible (211). The use of italics on fairly shows that Tom is attempting to persuade Jessie that she will be held responsible for the assault, even if he is only fairly certain. Jessie's fear of being found out and being blamed for the assault prompts her to remain silent, reinforcing the gendered power imbalance between her and her father. Dolores, who is an adult at the time of the eclipse, uses the eclipse to murder Joe and flee her oppressive situation. Dolores' actions are partly motivated by fear: worry that Joe will continue to attack Selena unless she intervenes. Dolores' violent actions, like Jessie's non-response to Tom's abuse, have ramifications; they strain her relationship with Selena while also rendering her a social outcast on Little Tall Island. Thus, whether a woman internalizes or acts on her anxiety, the Gothic double illustrates that there are always consequences. This social defect is easily mappable to North American culture. In fact, using the situations of Betty Hundley, Margaret Ann Malott, and Barbara Sheehan as examples, I have previously done so.

Voices of the Voiceless

It is worth noting that in Gerald's Game, King deviates slightly from Dorfman's notion of the double. Rather of dread, the unwelcome element, destroying Jessie, as Dorfman's description suggests, Jessie's concerns are subverted by various voices inhabiting the psychic space formed by the eclipse throughout her subjective reliving of the eclipse. Jessie connects with numerous other voices while shackled to her bed, including "the voice she had over the years come to think of as Goodwife Burlingame" (19), Ruth Neary's "no-bullshit voice" (25), Nora Callighan's voice, "assorted UFOs" (219), and "the little girl her father had called Punkin" (237). Individuals with whom Jessie previously had connections include Ruth, Nora, and Punkin (Jessie's adolescent self). The voices of Goodwife and the UFOs, on the other hand, do not belong to any one person. Jessie speaks with a wide range of voices, some of which are familiar and others which are strange, all of which contribute to her physical escape in different ways.

Goodwife Burlingame and the UFOs are the first group of voices who unwittingly aid Jessie's escape. Retaliation of any type is usually discouraged by Goodwife and the UFOs. Goodwife even tells Jesse to let Gerald "shoot his squirt...just lie there and wait until he has got it out of his system" at the start of the novel (19). This is significant and problematic because, according to Theresa Thompson's analysis of Gerald's Game in relation to the "feminine mystique"—which could be summarized as the conservative housewife associated with 1950s and 1960s American popular culture such as June Cleaver of Leave it to Beaver—Goodwife could represent women from a period of time who were expected to be homemakers, mothers, and to just wait until he is gotten it out of his system (55). The UFOs are possibly even more hazardous than Goodwife because they might symbolize anybody or anything, albeit they do lean toward a misogynistic, even disparaging, mindset. In fact, Jessie's first line from a UFO is: "What is a woman...[a] life support system for a cunt" (47). Because it is so explicit, unfiltered, and disrespectful to women, the UFO voice's word choice is worth addressing here. The voice also reduces women to reproductive biological functions, a belief that promotes to male dominance and female servitude. One UFO voice indirectly blames Jessie for the sexual assault because she began menstruation at a young age, and "[m]aybe that was the problem," says another UFO voice later in the novel. Because of a biological function tied to her sex that she has no control over, the UFO voice blames Jessie for Tom's assault on her. Because the UFO voice implies that Jessie's pain was caused by a natural physiological function, it demonstrates how

brutal heteronormative gendering and the mechanisms that enforce the male-female binary are, because trauma, too, is natural or normal. Goodwife and the UFOs should prevent Jessie from escaping her restraints, but they don't. Instead, the voices appear to reflect the challenges Jessie has faced since the eclipse: the attack, emotional manipulation, her marriage to an abuser like her father, and the disciplining social forces that continue to reinforce gender norms at the basis of gendered violence. The other group of voices, which include Ruth, Nora, and Jessie herself, assist Jessie in overcoming the challenges posed by Goodwife and the UFOs.

The familiar voices of Ruth, Nora, and Jessie's adolescent self, Punkin, lead Jessie to confront and acknowledge her prior sexual trauma, allowing her to act on her newly discovered strength and physically free herself from the handcuffs and recover agency. Ruth Neary, the feminist, activist, and anarchist, is the one who starts Jessie's subjective reliving of the eclipse by refusing to let her forget it and declaring that "the time for shutting up is over, running away is out of the question, and waking up is not an option," at which point Jessie's "day begins to darken" and "the time of the eclipse...come[s]" (131). In terms of feminism, a voice like Ruth's is important for sparking the change from passive victim to active victim, as seen by Jessie's eventual awareness of her victimization and refusal to stay a victim. When a victim takes an active role in their victimhood, the issue of systematic patriarchal oppression is brought to light, which allows for societal change to be enacted. Nora's voice, on the other hand, is more subdued than Ruth's, and she serves as a mediator and therapist as Jessie reminisces. Nora's voice is the one who asks Jessie the crucial question: "Who were you kicking at when you finally lost your cool yesterday afternoon—when you finally kicked out?" Is it true that it was Gerald?" (219). Jessie is unsure how to react to this question right away, but it does prompt her to contemplate why she is in this situation. Punkin, who represents both a childhood endearment and the victim of a parental attack, is maybe the most essential voice in Jessie's escape. Punkin's presence serves as a reminder to Jessie that she was a victim of Tom's abuse and that she must acknowledge this before she can refuse to remain a victim. Punkin urges Jessie that she needs to "[j]ust go for it before [she] lose[s] [her] courage" despite Jessie's first difficulty recognizing Punkin's voice (290). The voices lay the groundwork for Jessie to physically free herself from the handcuffs by putting her in a position where she has no option but to confront her sexual trauma and give her the strength to do so.

Battle Between Past and Present

While Jessie's subjective reliving of the eclipse ultimately results in her physical liberation and reclamation of agency, King also includes instances in the novel where Jessie attempts to confront her sexual trauma but fails; the purpose of including such failed instances of confronting trauma is to emphasize the fact that trauma cannot be dealt with on solely an objective level, but must also be acknowledged on a subjective, personal level in order to free one's self from the emotional or psychic effects of trauma. There are suggestions that Jessie refused to discuss her sexual trauma with her therapist, Nora Callighan, throughout the novel. Yet the most apparent example of Jessie's failed attempt at confronting trauma occurs when she attends a "women's consciousness group" as a college student (84). Jessie attends the meeting by request of Ruth Neary and recalls the following:

There had been twenty women in the living room of the cottage attached to the Neuworth Interdenominational Chapel…twenty women between the ages of eighteen and forty something. They had joined hands and shared a moment of silence at the beginning of the session. When that was over, Jessie had been assaulted by ghastly stories of rape, of incest, of physical torture. If she lived to be a hundred she would never forget the calm, pretty blonde girl who had pulled up her sweater to show the old scars of cigarette burns on the undersides of her breasts. (85)

Jessie is confronted and overwhelmed with abuse narratives in the example above. This approach of communicating pain—hearing the stories and seeing the physical scars—does not allow Jessie to confront her own trauma in a meaningful way, as the words attacked and horrible reveal. Instead, this type of therapy

retraumatize Jessie; she will never forget the calm, lovely blonde girl with a similar story of incestual abuse to her own. Jessie's aversion to taking part is reinforced when she "sprint[s] out of the room" before her turn to speak (87). Jessie has not yet acknowledged or accepted her sexual trauma on a personal level, and hence cannot bear to be reminded of it at this stage in the narrative, when she is experimenting with personal and group treatment. Jessie ultimately confronts and admits her prior sexual trauma when she is physically shackled to her bed with no way of escaping her recollections.

Significantly, Jessie's situation—being tied to her bed and compelled to repeat Tom's assault on her through memory—is an example of her having to confront trauma both objectively and subjectively: she is physically and psychologically bound to her trauma. In terms of the Gothic, the fact that Jessie gains physical freedom after finally confronting her trauma subjectively through her recollections of the eclipse implies that subjective and objective trauma experiences are inextricably linked, and the line between the two is porous. Jessie's ability to retake agency, albeit violently, is due to the porous boundary between her objective and subjective experiences of the eclipse.

Jessie's subjective revisiting of her childhood trauma restores a sense of agency and identity in Jessie, which was lost during the eclipse, according to the major premise presented at the beginning of this section. However, slitting her wrist and literally degloving her hand to slip out of the handcuffs is the only way Jessie may truly attain agency, at least in a physical sense. "I am peeling my hand," Jessie says so eloquently. I am peeling it like an orange, oh dear Jesus" (280). Despite the fact that King provides occasions in the work where Jessie employs nonviolent measures to attain self-liberation, such as the inclusion of the voices of Ruth, Nora, and Punkin, he also includes this incident of extreme self-violence. This is significant because it demonstrates the intrinsic violence that patriarchal systems and technology produce: Jessie must not only use violence against Gerald to escape her violent conditions, but she must also use violence against herself. This is not to suggest that the novel condones self-harm because Jessie is genuinely in danger; rather, Jessie's act of self-violence is driven by her desire to escape a scenario produced by the patriarchal culture in which she lives. It is possible that Jessie's act of self-violence would not have been necessary if Gerald had respected Jessie's plea to be released from the handcuffs, or if her father had not struck her in the first place. At the same time, it is worth highlighting that Jessie, rather than Tom or Gerald, inflicts the violence on herself. So, to some extent, Jessie succeeds in dismantling traditional male-female power dynamics by robbing Tom, Gerald, and, eventually, Raymond Andrew Joubert of their ability to harm her physically. Jessie is the only one who has the power or the authority to do so. While self-mutilation is certainly not the best way to reclaim agency—after all, King encourages confronting trauma and establishing the psychic space needed for absorbing and finally rewriting trauma—it does allow Jessie to regain physical agency.

Space Cowboy

Raymond Andrew Joubert, or the "space cowboy," as Jessie refers to him (231). Since the release of the work, Joubert has garnered little attention from academics. In Imagining the Worst: Stephen King and the Representation of Women, Theresa Thompson describes Joubert is "an apt symbol for the ways the feminine mystique still controls the social scripts behind the legal system" because he "connects so readily to Jessie's and our own conceptions of female hysteria and hallucination" (55). Thompson's view goes a step further by suggesting that Joubert may be a symbol for patriarchy itself. Because of his physical appearance (acromegaly causes his greatly swollen hands, arms, and face), his quiet meetings with Jessie, and the fact that when Joubert initially appears in the corner of her bedroom, Jessie mistook him for her father: "'Daddy, is that you?'" (150). If Joubert is viewed as a symbol of patriarchy, Jessie's encounters with him have far more societal ramifications than they appear at first. Jessie is confronting not only Joubert in the trial, but sexism on a much bigger, systemic basis as well.

Aside from the fact that Jessie literally refers to Joubert as daddy, a patriarch, the combination

of his physical appearance and methods of instilling fear into Jessie through his gaze might be interpreted as patriarchy externalized. During one instance, Joubert is described in the following manner in Gerald's Game:

[Jessie] could see his dark eyes gazing at her with fixed, idiotic attention. She could see the waxy whiteness of his narrow cheeks and high forehead, although the intruder's actual features were blurred by the diorama of shadows which went flying across them…Her first terror of him began to abate a little, but what replaced it was somehow worse: horror and an unreasoning, atavistic revulsion…It had crept in here while she slept and now merely stood in the corner…staring at her with its strangely avid black eyes…they reminded her of the sockets in a skull. (143)

The fact that Joubert is characterized as both him and it is the first clue that he symbolizes a nonhuman, immaterial system. Although the use of his defines Joubert as a man, the use of it or its repeatedly suggests that he is not merely human. "[Jessie] could not stop it, because this was not a dream...she had become increasingly sure that the figure standing in the corner, as silent as Frankenstein's monster before the lightning-bolts, was real" (147-148). Frankenstein's monster, a man-made figure, is contrasted to Joubert. Patriarchy is also a man-made phenomenon. Joubert uses his look to inspire terror in Jessie in the above text, as he stares at her with unusually ardent dark eyes. Jessie is so terrified of Joubert's gaze that she agrees to let him abuse her in the same way Tom did during the eclipse, as long as he will "unlock [her] and let [her] go" thereafter (151). This conversation between Jessie and Joubert resembles the "gendered social relations within a patriarchal culture" that "normalize" "women's subordination" (46). As a result, the relationship between Jessie and Joubert exemplifies the troubling power imbalances that are frequently employed to perpetuate patriarchal dominance.

Joubert's ghostly look, including his thin cheekbones, high forehead, and intense black eyes, as well as his extended limbs, are later ascribed to a medical condition: acromegaly. The objective of adding such evident imperfections in the Gothic, according to Botting, is to "make negative attributes visible" so that they might "be seen for what they are and condemned or destroyed" (8). Gerald's Game may use Joubert's medical condition for a similar reason. King helps us to identify the cancer that pervades the system by concretizing this abstraction—patriarchy—in the character of Joubert. While this interpretation may appear to condemn the disabled—or disability—it is meant to link patriarchy to an illness that may be life-threatening if left untreated. Acromegaly can cause issues such as high blood pressure, eyesight loss, malignant growths, and death if left untreated. These problems are manifested by patriarchy in the form of social and political injustice, domestic and sexual abuse against women, and death, as demonstrated by Jessie's murder of Gerald to avoid marital rape. Perhaps King attributes acromegaly to Joubert because the chief symptom of acromegaly, extended limbs, forehead, and jaw, is caused by an overactive pituitary gland producing extra growth hormones in the body. Joubert's physical anomalies may be indicative of the gendered technologies and systems that continue to maintain and contribute to the expansion of patriarchy in North American society.

Conclusion

Jessie encounters Joubert on two occasions, the first of which happens when she attempts to flee the lodge after degloving her hand. Before she flees, Jessie runs into Joubert in Gerald's study, who is "holding his case open, as if expecting her to admire the contents" (315). "Golden glitters and diamond flashes amid [a heap] of bones" can be found in the case (314). It is important noticing that Joubert is physically occupying a place that belongs to Gerald at this moment. When Jessie incorrectly refers to Joubert as daddy, she links him with her father. Here, Joubert fills the role of Jessie's second abuser, her husband, bolstering my claim that he is a symbolic patriarch. Rather than being gripped by dread when she sees Joubert, Jessie "grasp[s] her wedding rings, the ones on the third finger of her left hand" and "throw[s] the rings at the open case" (316). Jessie is symbolically rejecting a fundamentally patriarchal system: marriage, by tossing her wedding rings in Joubert's court. Joubert's patriarchy appears to rely on marriage

to retain power, as seen by his response to Jessie removing her wedding bands: "[t]he smile on its pudgy, misshapen mouth faltered into some new expression which might have been anger or only confusion" (316). Anger or befuddlement in Joubert might signal a loss of power: Jessie has already broken free from her handcuffs physically, but she is also gaining social agency by removing the wedding bands linked with her problematic and overtly violent marriage. Furthermore, by volunteering her wedding rings, Jessie denies Joubert the option to forcefully take them. In other words, Jessie is denying Joubert the opportunity to rob her brutally, which, as we will see, is a very pleasurable act for him.

After being arrested for multiple crimes of grave thievery, necrophilia, and murder, including the death of his own parents, Jessie's second and final violent encounter with Joubert takes place in a courtroom. The fact that the confrontation takes place in a courtroom is significant because, unlike Jessie's first encounter with Joubert, which takes place in the privacy of her cabin, the second encounter takes place in a public space that (theoretically) exists solely to achieve justice, equality, and retribution for victims of all genders. Of course, there are numerous exceptions to this ostensible goal of the judicial system in North American culture, but the fact that Jessie and Joubert's last confrontation takes place in a courtroom is worth highlighting because of the public exposure it provides. In a letter to Ruth Neary at the conclusion of the novel, Jessie refers to her final encounter with Joubert in the courtroom as "the total, final eclipse" (382) and insists that she had to "do something that would matter, that would make a difference, that would show [her] that no eclipse lasts forever," so she "leaned forward and spit into [Joubert's] face" (384). Because Jessie equates Joubert with her father, spitting in his face demonstrates her acceptance and rejection of victimization. Furthermore, Jessie is spitting not only in Tom's face, but also in the face of patriarchy. That is, assuming we consider Joubert as a literal embodiment of patriarchy.

Jessie's personal story of suffering at the hands of an abusive father and husband, her struggle with accepting her past sexual trauma, and her eventual psychic and physical rejection of the patriarchal systems that ensnared her during the eclipse is depicted on a much larger scale on Little Tall Island.

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DEPRESSION IN JOHN UPDIKE'S RABBIT AT REST

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ABSTRACT

This paper examines John Updike's most well-known novel, Rabbit at Rest from the Rabbit Teratology and is best known for his perception of America during the first half of the 20th century. It also investigates the mindset and behavior of people at the time. The protagonist Harry Angstrom, also known as Rabbit, is the protagonist of the novel; all of his activities and immoral behaviors show America's accurate reflections. Illicit relationship, outlaw, and materialism is the main idea of this article. Rabbit is the representative of the whole generation. His way of life, decision-making strategies are the outcome of the particular age. Apart from all of the activities, Rabbit's son Nelson is deeply wounded by his family's parenting and is a drug addict. This article also examines the aftermath of the industrial revolution and its consequence by exploring American people's households. Rabbit's involvement in politics and his support for Reagan and his reason are clearly explained in this paper. Finally, the novel ended with a paradoxical edge which is that 'Rest' is a nightmare of the human life cycle.

Keywords: *Materialism, American Society, Ronald Reagan, Past, Pessimism.*

Introduction

The most condensed edition of all Updike's novels is *Rabbit at Rest*. The first sentence of the novel narrates the deteriorating posture of 55-year-old Harry Angstrom.Standing amid the tan, excited post-Christmas crowd at the South West Florida Regional Airport, Rabbit Angstrom has a funny sudden feeling that what he has come to meet, what's floating in unseen about to land, is not his son Nelson and daughter-in-law Pru and their two children but something more ominous and intimately his: his own death, shaped vaguely like an airplane. The 'Sensation chills him, above and beyond the terminal air-conditioning. But then facing Nelson has made him feel uneasy for thirty years.(*Rabbit at Rest* 3)

For Rabbit it is a big misunderstanding to think about his son and his country. The financial condition of his family is increasingly declining and his country is already experiencing significant financial crises. He identifies his own nation status. Life in America in the 1980s is daunting because it is impossible for citizens to retain and maintain their role.

Harry is a true man of Good Nature at heart. He still believes that human suffering has solutions in nature. When Rabbit goes with his family to Mirror Lake, he has a more influential relationship with Nature and is flooded by the richness and benevolence of Nature. Due to personal problems, Harry shuttles between Florida and Pennsylvania. His pain exacerbated his wretchedness throughout his life. His heart operates at fluctuating cycles, a direct symptom of a massive heart attack. He has serious heart attacks. Janice is concerned about the welfare of her husband. She is too dismissive of the family role and has her husband ready for angioplasty care.

Rabbit's Mind

Peace is steadily declining in his household. His son Nelson, who married Pru. Nelson is a hopeless son for Rabbit. Nelson becomes opioid dependent. Rabbit had an angioplasty and he can show where his heart functions during it visually. The technological era required Rabbit to investigate the whole operation. "Thirty seconds," breathes Dr. Breit, and the balloon is deflated by Dr. Raymond. "Look good, Ray." Harry has no pains in the very back of his throat above the cuddly sweet strain in his bladder and sadness as if drank all the saltwater in the gulf. "Harold, again, and we are going to call it a day" (274).

Harry recovers from his heart attack, but his family burden has not reduced. His son Nelson is Rabbit's true nightmare. All his son Nelson's behavior leads to problems, and it raises Rabbit's strain. In addition to Rabbit's woes, Nelson is involved with the misappropriation and swindling of Toyota's money owing to his opioid habit. In addition to his life negativity, Nelson has love and invests extensively on his friend, Lyle. Firstly, Rabbit and his wife Janice do their hardest to help their son get out of his abuse, to rehabilitate him from his opioid

addiction. The love of Mother is capable of curing, consoling and managing the most hard moments.

The pairs are attempting to contribute to the mental and financial crises in order to save their son, but Harry frequently loses his patience with his son, Nelson. Without a few pleasant times with his son, the father-son bond is still a chaos. Harry is nourished by the continuing help they offer her son in life. Nelson, though, does not heed the aspirations of his parents. Nelson is a worrying kid for his parents at the personal and educational stage. At one point, Harry asks his wife Janice to quit loving her son Nelson.

Undeniable Loss

Harry and Janice draw up a $200,000 incentive package for Toyota Motors that is attributed to Nelson's lavish spending. In any sadness there is pleasure, according to Rabbit he has been emotionally loyal to his wife Janice following a major heart attack. Janice's commitment to her husband's rehabilitation from heart failure is exceptional. Dr. Breit's words are a witness to Harry's affection and passion for his wife.

Rome wasn't built in a day, Harold, and your heart isn't going to be rebuilt in a week. "Neuroplasticity provides any good in around 80% of the instances, at least for a bit. You should not only owe it to yourself, but also to your wife and children. And those cunning little grandchildren I've heard about" (284-285). Harry's previous life is filled with surprises and passion. He wants to professionally and personally recall his previous active life. To his gritty horror, the nurse who uses his hospital blood pressure is a sign of his shady life in the past. Her looks are well known to Harry and this gave him in his early life a sense of a known friend. Harry goes back to his mind and fantasizes unexpectedly Ruth, his old love. He assumes the girl looks like his girlfriend in the past. In the meanwhile, the girl asks Harry: "What about the company of Toyota? "The reading of blood pressure continued to climb well above Harry's usual range. She asks Harry not to be anxious, to think of anything relaxing. Harry's subconscious uses a rewind button and returns dreaming of Ruth. Harry is sentimental and remembers his experience of Ruth. He needs to meet Ruth and is curious to know if he is happy with Ruth.

Rabbit's Sexual Urge

Rabbit ruminates on the feelings of his previous lives and is ready to recall Ruth's past friendship. It gives him a warm feeling and makes him stoic to life. During the span of time, his behavior and his love efforts have not improved. He also has a warm feeling about his romantic meetings in the past. Meanwhile the Rabbit family is in shambles. His son is the root cause of all his suffering, but for the remainder of his life, Rabbit plans differently. He feels like a bus to Pennsylvania and Florida. The climate in the country and in the Rabbit family is not enough to establish peace proposals. Rabbit's family is in a chaotic situation, chaos, and upheaval is key and Rabbit is out of place.

Rabbit goes crazy in his domestic and sexual lives to add fuel to the flames. He is a guy who never gets troubled by marital slavery and is a sex hungry. He is willing to compromise something for his own sake. 'Habits are dead heavy,' a phrase goes. Lust is the usual phenomena in Rabbit. Like applying salt to the injury, Rabbit is hesitant to assign attention to his sexual urges if the family is in the distressed state. It turns out to be a savage in the melee and is unable to live in a civilized society. Rabbit has never let down his love pursuits particularly in the midst of sorrow. It is primarily inhibitions.

In the middle of all the problems in his family and career, Rabbit's insanity for prurience has been the extreme of loving Pru, his daughter-in-law. This occurrence led the family to flood. Janice is frustrated and her amount of patience is drained. Janice is all about to reverence her husband Rabbit. He did not control the case. He is mentally upset and the strain in his family threatens his emotional balance. The character of Nelson shifts dramatically. He is violent and tough. A sense of self-belief and culture entangles Nelson's subconscious. Certain life conditions are assumed without introspection. Parental affection is a real world feeling. When tested for the injustice of fate, it destabilizes an individual's value-based trust. Nelson's situation is precarious; throughout his life he cannot reveal or forget this event. For

those souls are placed in this form of existence, then the noble souls on earth would be tested for dignity.

Rabbit's divisive sexual adventures build a storm in his family and the existential remedy of Rabbit falls back to his mind to escape the anger of his family. The main concern at this point in time in the novel is running out of pain or survival. Is it Rabbit's final run? Has he been running away through his life from all his misdeeds and follies? Or is this again Rabbit's exercise to slip free from his duties? The book would not address these concerns. Rabbit has spent a parallel life in the novel in line with his expectations and ambitions. But this duality did not serve Rabbit's intent. He lost the confidence to meet life's odds. He needs to exist through the best times of his life. Whenever trouble breaks out, he avoids coping with it. He is bringing everybody in the lung and his mighty weapon – racing. This mentality brought Rabbit to the end – destruction. His family members fall deep into the pit of vengeance. He is blindfolded with his yearning for sex and never stubborn in a civilized world. Rabbit eventually heads to Florida. He lives a solitary life, and his world is shrunk by friends. He exists in memories. Since it is Updike's last book, he establishes his appearance in every episode of the novel.

Where it Starts, There it Ends

There is an intense scene of Rabbit in the last phases of Rabbit at Rest. Rabbit sees some hoops boys competing. His memory lane goes down and his subconscious mind helps him to play basketball again immediately. He joins the game and attempts to compete with the same vigor as he played during his youth. Rabbit has another heart failure and Rabbit Angstrom is nearly gone. Despite his parent's misunderstandings, Nelson does not want to exist without the business of his father. He believes that without his father there will be a void in his existence but the decision of fate is above all introspection. In this turbulent life, Nelson yells at his dad not to abandon him behind. From his face and from the pitch of his voice, the child called out from the direction of his father against a fierce storm. "Do not die, father, do not do it! Do not die! "He yells, Existence eventually asserts its dominance by contributing to the demise of Rabbit. The long past goes by and the life of Rabbit finishes and Updike's Tetralogy also finishes in the final lines of the novel. "Well, Nelson," he says, "all the things I can tell you are, that it does not go so bad." Rabbit feels that he needs to say something. Maybe. Maybe. Sufficient" (512). Updike's focus on Rabbit is sharp images as America's embodiment and his biography portrays the life of contemporary America. It is a customer culture, and Harry pilgrims particularly in the marketing of emotions. Disciplined life is a long and rich life motto, but Harry's addiction to victuals and sex is a crucial psychological element in the destabilization of a happy family life. Harry's erratic existence is a fitting illustration of the ordinary Americans of that time living wrong lives. A case in which Rabbit encounters is used throughout the novel as a precursor to death.

Rabbit at Rest simply does not bet the Rabbit can rest out of happiness and fulfillment, but because of his exhaustion of emotional intelligence he is obliged to rest. His loss of his daughter, especially in out-of-home relations with his boy-in-law, the affair his wife Janice has with his co-worker, his house in flames, his intolerable emotional turbulence and the company loss triggered by Toyota's irresponsible administration – all these major financial and self confidence events have led him to lose his composure.

If Rabbit is rich, Rabbit had a good fortune from the oil crises of his country. But all does not go well with Rabbit in Rabbit at Rest. Its financial standing, family pleasure and personal wellbeing make it seem like everything goes downhill. In the book, Rabbit has been mentally secure. He knows the value of his wife Janice in Rabbit at Rest. He knows that his standing has grown to a certain degree thanks to Janice. In Rabbit Run, he was a hardcore shirt, but he transforms emotionally in this book. During a personal crisis, the authentic personality of a human mind would be revealed.

Pessimistic Perception

Harry requires a fortification device mentally. He expects to be provided about, called out and alert. He has become an addict of junk victuals.

He is in an isolation by himself. His universe was shrunk and he lives lonely. Without his own knowledge, he was brought to this state. Even his trust in God went bad. He does not have a purposeful existence. He is spiritually powerless and perpetuates trust in religion to ignore. When Thelma asks him to believe in Heaven, Harry responds negatively.

Implement via Harry's character the mindset of those trapped amid technical advances and science inventions. In Harry's psyche, he did not completely deny trust in Heaven. It is just the last priority of a prosperous life of existence. That is the general psychology of Americans since the Second World War. Harry is between conviction and experience mentally. He trusts in human trials and punishments, sorrows and happiness; this trust is enabled by certain external power. But he does not know it is God. He is truthfully prone to believe, but seldom does his logical celebration blame him for doing so. "When the young Rabbi had a mystical sense of himself as divinely sought, the mature person encovers God more as a remembrance than as a living reality," Ralph Wood puts in his novel (226).

Half a year in Florida, Harry lives without any exposure to job strain or socialization. He likes to recollect and regrets his life's vicissitudes. His psyche was checked without work or dedication. Harry's mind functions in fluctuating desequilibrio and he experiences a feeling of emptiness in his existence. Because Harry resides in Florida for half a year, all of his connections in the Flying Eagle Club have been a thing of the past. He is psychologically removed from all his interactions. Time challenged him tremendously and in time he became a puppet. This condition leads to a snap in Harry's mind and he decides to play golf in Florida to balance the act, but Florida is not the location appropriate for his emotional permutations and accumulations. As Gordon E. Slethaug in Freedom is made of Brambles, suggests:Harry is a person initially viewed marriage as a ritual in human life and Harry never viewed it as a commitment or bondage. At the beginning stages Harry viewed marriage as a matter of convenience and compromise. It is the attitude of Harry and a sizable number of youths in America as well. (245)

Sex & Violence

Another big disrupting aspect for Rabbit is his lack of sexual urge. According to Sigmund Freud, there are two main factors which promote noetic conceptions, behavioral habits and satisfied emotions. It is sex and violence. It is also regarded as 'Eros and Thanatos' or life and death. Gender is a central driver in human development. It is a reproductive expedient. Aggression is another form of behavioral pattern that penalizes the person to avoid damage caused by other people. Rabbit is pretending to be truculent to escape embarrassment and dishonour. It is the dwindling interest in sex; the psyche of Rabbit is badly confused. He thinks he is losing an ascendant male's place. "Sexuality is the secret to the issue of psychoneurosis and neuroses in general, as Sigmund Freud verbally placed it. No one who refuses the key will ever open the lock" (115).

The internal make-up of Harry is not made up of virtues. He may not believe or refute that. Its character may be defined as taking life as it comes, but Harry's acts can never be explained in a civilized community. Updike reflects on Harry's situation and the time he lives in expresses that stuff appeared functional but were inherently unhealthy.

When Harry indulged in a sexual act with his own daughter-in-law Pru, he became the centre of reproval. The entire family is with swords to contravene the beastly action of Harry. But Harry is not perturbed with it. Janice calls Harry’s action the most “perverted” and “monstrous” one. But Harry is not penitent. He endeavours to flee from the spot. Here one can understand that Harry is not for retribution or regret. His emotions dominate at the cost of human values, which is unacceptable in a civilized society. When Melvyn Bragg queried about this picturisation of Harry, Updike replied:Here lies an American man ... something like that, something kind of vague. The last book tries to pick up the epigraph of the first one, which was a quotation from Pascal. I talk about the movements of grace, the hardness of heart, external circumstances. I think over life is a mixture of these things, and in the fourth book I perhaps especially show the hardened heart becomes no longer a metaphor, but an actual physical thing.

External circumstances are always there, and the movements of grace have become somewhat dimmed, but not entirely. (227-228)

The character of Harry Angstrom prioritizes personal liberation at the cost of moral conventions, values and societal structure. But in general the psychology of Harry is reprehensible and is not worth admiring. It is not right to claim supremacy for the self which is devoid of moral convictions. This accurately describes the psychology of Harry Angstrom. However, it is better to be human than being selfish. As Karl Barth projects in The Quandary of Ethics Today:

The answer to the problem of the ethical lies not in what man is doing or might attempt to do. It lies wholly in what God has done and continues to do for and to man and the world in Jesus Christ. The meaning of God's action is enclosed in the word 'grace.' And this means, quite simply, that God does one very definite thing: He forgives men their sins. Human existence occurs always only under the judgement and forgiveness of God. (29-30)

After Harry's wife Janice has been appalled by the moral indignation at his ethical, unbloody and uncivilized behavior, Harry attempts to put his history, intuitive and secure elude, namely, running. He spends a long period in Deleon, recollecting his former basketball tournaments and enjoying basketball again.

Logical Situation

Harry's attitude to life is incredibly realistic. He did not philosophize his genealogy. He is logical, but at the same time a continuous seeker of external forces that work human destiny if human prospects collapse. Updike carves Rabbit as a character to compare with Karl Barth's theory. The intent of Rabbit to recapture his young glory to several sexual experiences, his violence in collecting money, and other goals did not lead him to the upper level of fullness of life. Rabbit was hoping that these stuff would carry glory and rejoicing into life at the early stage of Rabbit's life, but that the money gained and numerous sexual experiences did not lift him out of his vacuity. Psychologically, he also has a sense of meaninglessness in general.

Updike in his Introduction to Barth's Wolfgang Amadeus Mozart, states that the theory goes well with his character Rabbit Angstrom.

Rabbit's fondness for tobacco and other physical comforts, his tastes in art and entertainment were heartily worldly, worldly not in the fashion of those who treat this life as a way-station and testing ground but of those who embrace it as a piece of creation. (Updike 228)

Rabbit is not in an ethical system; he has appreciated life as an incarnation of generation. Inside, Rabbit is mentally upset by his irrecoverable past glory as a basketball star. But he feels he is a component of America's history. He feels excited for life's most happy times. His psyche never blamed him for acknowledging the natural events of human life. This is Harry's place of contradiction and the root cause of his misery. All throughout the novel, Updike strived to make his audience understand that Harry Angstrom is an epitome of history. Indeed, Updike's creation of Harry is trustworthy and efficient proof that he can generate history. Commenting on John Updike, Suzanne Henning Uphaus says: "Updike considers men to be dichotomous, to be divided between their physical desires and their spiritual desires on the one hand... Man's physical and metaphysical aspects remain stubbornly distinct. You should not integrate." (6)

In Harry's mindset, there is a psychological doubt about his physical compulsions and thirst for faith. Faith in God erupts in his personal life when there is turbulence. There is no practical structure or philosophy to explain the combination of religious faith and contemporary life. Dilvo Ristoff says, when interpreting Harry's character: "And he is the middle-man,' pressed between life and death, past and future, an object of the Cosmos, an object of history." (28)

His own stance of being unserviceable and his wife and son's upswing make Rabbit psychologically unstable. Harry only makes the last run to find the final choice – death. His anger at his son Nelson proves that he felt deplorable at the bottom of her heart at his sexual progress towards his daughter in law: "It is sorry for the child he did, but now he is favoring it although Nelson does not seem to

know it" (Rest 511). Harry's final huge heart attack in Florida during the final basketball game with the boys. His psychological thirst is his game and in his early days, this thirst gave him fame and liberation and in his last days he was eternally free. Harry's thwarted efforts were often suggested to be simply metaphors on one level for the greater social problems of his era. Rabbit at Rest is a virtual directory of actual disasters; AIDS, Pan Am Flight 103 and Challenger, to name but a few. No wonder Harry Angstrom and his family are struggling, Updike seems to say, things are hard all over.

Complexity of Human Mind

Everywhere in this novel one switches, agreements are broken, commitments breached, ties compromised. To underline the dishonesty of the relationships of his protagonists, Updike undoubtedly evokes the tacky, cheesy quality of US reality during the Reagan–Bush years. But the key aim of Updike is not to create a political declaration. As a human, he remains essential to Harry Angstrom. The important problem is private activities. His true focus is the complexity of the human mind, the swarming upheaval of thoughts, perceptions and desires.

Technically, the story is told from the author's all-knowing point of view. But whole sentences and paragraphs must be read as Harry's despite the purposeful omission of quotation marks and attributing phrases. Updike's subtle blending of voices enables him to maintain a strong sense of immediacy and realism without sacrificing the advantages of authorial omniscience. (Searles 21)

The conception and research by Updike to portray its age's inaccessible gregorian mishaps is not an attempt to radicalize the system; it is instead Updike's adventure to project authentic and contradictory convivial stigmas found among his age people. In a culture, a certain type of laws and philosophy of virtue are framed for a disciplined life. Even if the civilized code of conduct has been broken, a cure for a slack, healthy and peaceful existence has been created by the denomination of faith. In the book, though, Rabbit is not finding refuge in a religion that reveals himself to be a reflection of the Americans who have lost trust in the divine universe – a powerful hypothesis for peaceful life. In a democratic community, compromises in the minds of the citizens still emerge for real existence and realistic living. Updike would not attempt to dig straight into the difficulty of life in a patriarchal society. He seeks to discriminate between materialistic and moral lifestyles. Regardless of the laws the community has developed in order to survive, they have been broken and eradicated. The social concern of Updike is regarding culture and the inconsistencies and hypocrisy existing in people's minds.

When we analyze Harry's attitude, he is mentally mature but lacks clever and mental stability. Moreover, Harry's noetic, physical and moral regression is attributed to contemporary America's carelessness and spiritual sloth. The key subject of the novel from Harry's character is the middle-class families of the 1980s and 1990s. In every culture, the coalescence of patterns and the character of individuals is a forum for raising a family. A community of citizens make up a culture in which the perspectives of personalities are exchanged and thus become the mindset of the people of that era and society.

Social Supersession

The basic way of life in contemporary American society in the 1980s and 1990s is not remarkable or exceptional. As far as eating preferences are concerned, it is a culture that does not obey certain laws about food. Dining has become a culture and most junk food has become a supersession for the culture of the past. It is a cosmopolitan world predicted by Updike and the disintegration of the conventional structure in all facets of existence is now the order of the day. Anarchy in the family system is due to lack of faith among people in the family. Adultery is indeed a significant cause that influenced culture in the 80's and 90's. Genuinity, trustworthiness, trust and religion are both weak in the majority of society's households. In the context of socialization, people migrate to nightclubs, restaurants and other sources of adventure and momentary excitement. In the contract, childcare and passion have a rigorous effect and uncertainty in the family structure. Harry and Janice's guilty position has made their son's life unbearable. Harry and Janice's erratic sex

life did not earn them the role of Nelson's responsible parents. All remain accused of their misconduct. They aspire to save Nelson with liberation and security in the task of suppressing the shady lifestyle. Nelson, on the other hand, wants to live comfortably and be a little extravagant. The other major disaster of culture is that young people go after narcotics to experience an early sensation of being drunk. Nelson is caught in the cocaine user's website and becomes a toxic person. The great causes found in culture are indiscipline, addiction and alcoholism and most households are trapped in the catastrophic lifestyle. An violence leads to a chain of harassment. As a crack abuser, Nelson loves drug trafficking and misuse of Springer Engines. The addiction of Nelson leads to a complete misunderstanding between him and his wife. Nelson had an astronomical loss on the Toyota franchise and as a consequence his grandfather's well known company stopped running.

Harry's personal situations are an illustration to numerous households in the United States. Updike attempts through the protagonists to reflect the prevailing onerous condition in America. He even wonders for living well in a ruthless, wealthy consumer culture. It is a culture which aims to discard all the principles in the air during the pilgrimage to material riches.

It is not only a transitional time for the Rabbit family but also for America. Since Harry opts for semi-retirement in Florida, his country also strives to develop its supranational dominance in world affairs. Harry has a double role in the book - as a gritty basketball player he projects himself to the outside world. But he has in himself a delicate, thoughtful character. Harry longs for an ecstatic feeling in the world and in communities in the 1940s. But he did not match America's quickly transmuting culture. Everything is sold and all is for material enjoyment. The American way of living has been swift and Harry believes that an in-depth study of a healthier life in America cannot be sought. Harry lives in an era when everything is open. The youths are not forced to wait in order to taste ecstasy. The millennial generation challenges the conventional idea of jubilation.

Harry is pellucid that in materialistic consumer society, not all conventional values of the American society are venerated. He even questions the people of his generation, because his whole life was used to help stabilize and nurture his children. But people in his household have never realized that and he is obliged to move quietly out of his house. Only in his remembrances could Harry find his bliss. It is a difficult world after momentary pleasure and Harry is a representative of an old generation who tries to get accustomed to the early theory of junk food addiction.

Impulsive Society

Updike projects the society of the 1980s and 1990s as a society craving for momentary pleasure, transitory and instant bliss. It is a society which feels negative about perpetual bliss and gratification of the soul. Updike hints that the society is a practical society, a consumer materialistic society which never bothers about fine tuned values and practices. As a critic Sven Birkets in *The Inner rabbit, In Chicago Tribune - Book* says:

I do not mean to suggest that Rabbit lives only in the past or that the other characters do not push forward to claim their need of attention, or that the vast and complex public world is not sharply etched – in all about. To the contrary, here, as in the earlier books the variegated hard walks of reality are everywhere to be knocked against. And Rabbit remains an inveterate sniffer and noticer – of places, atmospheres, things great and small. (1-4)

In the novel, Rabbit is a consumer society. There is no room for ethics or values in this society. Individuals are revered for their material wealth and possessions. They look like commodities. Consuming ultra-modern food and socializing in high-end restaurants has become a way of life under the denomination of the consumerist culture. People lived because of their avarice and not because of their desideratum and the needs are all mendacious.

The seventies and eighties saw a drastic transmutation in the material prosperity of the Americans. The emergence of great inventions in science and technology and other innovations in all spheres of life brought a positive and a sizable amount of negative

effects in the lifestyle of the Americans. The negative effects include energy crisis, suspicious attitude in marital life, extramarital sexual issues, dreadful diseases like AIDS and ultimately an exhaustive decline in human values. As Christopher Booker in Dear American: Meditation on a Lost Dream, in his The Seventies: The Decade that Changes the Future says:

We have seen the beginnings of the world energy crisis; we have seen mounting worries over population and the whole balance between man and nature. We have seen the dottiness and superficiality which can come over societies as they embrace the values of materialism and surrender to the omnipresent invasion of television – which brings a wholesale regression into infantilism, a subtle undermining of the sense of reality. (76)

Hypocrisy prevailed in most of the households and in order to gratify their class consciousness people thronged to restaurants which opted for food that did not suit the stomach but for the tongue. This stance of the consumer society laid the death nail on the coffin which is confined with social values and faith. John Kenneth Galbraith wrote in *The Affluent Society*:

Because society sets great store by ability to produce a high living standard, it evaluates people by the products they possess. The urge to consume is fathered by the value system which emphasizes the ability of the society to produce. The more that is produced the more that must be owned in order to maintain the appropriate prestige. (155)

The mentality of the people of the 1970s is zigzag in nature and never reflects a specific theory or principle. Any society that goes through this transitional period faces a distantly turbulent environment because people are not equipped to cater for the rapidly changing consumer society. It takes at least ten years for any transmutation to accustom and to know the positive and the negative aspects of the transmutation. Sometimes the peregrination of adaptation takes the jolt of a generation. As Michiko Kakutani points out, “Instead of charting Rabbit's growth and his struggles against temperament as he did in previous books, Updike appears more interested in defining the mindset of his character" (14). Throughout this novel, Updike projects confused and lethargic characters against the background of cultural and friendly changes. It is a society without God's compassion and social will. The choices of people differ in nature and all of these decisions are probably shortcuts to personal developments.

In fact, Updike sees the authentic American values recognizing the individual thinking and freedom to live truly, with obligation and prosperity. Wealth denotes spiritual richness. Updike is strongly criticized for projecting a costly life full of self-centered posture and selfishness. In the novel, the life of little boy Nelson oscillates into his parents temporary, shady life. It is a fitting example of the false ideologies of parenthood that have embraced the materialistic minds of spouses. It is a society with egoistic vices and a strong reflection on our brothers and sisters at home.

Conclusion

Rabbit's last ride to the south is a remembrance for his past. Rabbit is in a state of mystification and cannot align his thoughts with the modern American way of life. Rabbit certainly performs his last basketball game fiercely, but his fitness deteriorates this period and his lengthy struggle-for-Reagan America takes place. He crashes in the courtyard. Looking at Harry's admiration for President Reagan, it is a hair-raising ceremony of men who work and glorify the past. The veneration of human liberation and autonomous businessmen is America's pride. They are not just department stores but symbolize the success of American entrepreneurship.

In his early childhood, Rabbit looked very confident where all was true and constructive and a person had the capacity to flourish in harmony. But today he says "Everything is ready, ready to make a rapid profit" (419). Garry Wills observes in favor of this vision, "Reagan's land is just like bringing kids to Disneyland... It is a safe history with no rough edges on which to stumble. The more one visits such a history, the better one is immune from disturbing incursions." (459)

Rabbit perpetuates bigotry, advertising, faith, ideology and the complexities of the home. He is away from America's mendicant world and wonderful teens. The belief in Protestantism

and human fellowship with God is an American real identity. And after his reaganism love that imitates the past and bridges the current, life goes on and if there is no hindrance between God's communion and the individual, then that communion becomes sacred. Interfering with gregarious influences contributes to instability and sabotage of transition. It is a phase and transition is life's root. It cannot be stuck at one time and proceeds to display the beauty. The mantle of transition needs to begin generation after generation as days advance. It is Nelson after Rabbit, great children after Nelson, and the tradition of progress persists until the very end with regards to the Rabbit family.

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REVENGE, RETALIATION AND RETRIBUTION IN THE COLLECTOR OF TREASURES BY BESSIE HEAD

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ABSTRACT

Bessie Head is a celebrated South African writer who is considered to be the most influential writer of Botswana. In her relatively short life on earth, she wrote many novels, short fiction and autobiographical works which give the readers a deep and personal insight into the colonial oppression of South Africa in particular as well as the patriarchal and tribal oppressions. This article intends to study the oppression suffered by the African women and their consequent retaliation, revenge against their oppressor, and also the retribution faced by the oppressors with reference to The Collector of Treasures by Bessie Head, an anthology of short fiction.

Keywords: *Oppression, colonialism, suffering, revenge, retaliation, retribution*

Introduction

Bessie Amelia Emery Head, who is celebrated as Botswana's most prominent writer, was born in South Africa in 1937.She is a mixed-race writer who migrated to Botswana from South Africa to flee from a horrendous past riddled with rejection and humiliation. She distinguished herself in various genres like short stories, novels and autobiographical works. It is almost inevitable for writers to draw from their life experiences to produce literary works. Their ideas and personalities are spread throughout their works to be interpreted by those who read them. Craig Mackenzie found all her works of fiction "fashioned in some way from the author's experiences" (19). Born of an illegal union between a white mother and a black father, she was raised in a foster home. Her misfortunes doggedly followed her into marriage also. It lasted only for three years before she fled to Botswana with her son. There she had to wrestle for fifteen years as a refugee before she was granted citizenship. Her life experience of suffering made her poignantly aware of oppression against the women of her country and their struggles to survive against the tide of illiteracy, poverty and sex discrimination. According to Femo Ojo Ade "Bessie Head takes sides with the woman whose story must be told" (81). She champions the oppressed and exploited African women thus becoming the voice of the voiceless. Craig Mackenzie describes "the hardship women of the village experience" as the main focus of her stories.

The Collector of Treasures, with the subtitle Batswana Village Tales, is a collection of short stories by Bessie Head published in 1977. She took a longer time to write this than it took her to write a novel. She started work on this book after he was able to find a home for herself in Botswana, where she felt that the African experience was continuous and unbroken (45) as she said in an interview. The collection consists of "brief vignettes of traditional Botswana village life, macabre tales of witchcrafts and passionate attacks on male chauvinism". Bessie Head took immense care to complete these thirteen short stories as it was her desire "to shape the individual stories in such a way that one trailed into the other" (11). This paper intends to analyse the themes of oppression, resistance, revenge and retaliation in a few stories from this collection.

Revenge and Retaliation of Dikeledi:

"The Collector of Treasures", the title story of the 1977 collection produced by Bessie Head indicts Botswanan men for objectifying and abusing women in their lives. The story begins in medias res with an unnamed woman being taken in a police truck to the state prison in Gabarone, the new capital of Botswana. The prisoner stares disinterestedly at the passing landscape. The long and lonely journey takes its toll on the woman that at a certain point "she slowly crumpled forward in a wasted heap" as she becomes "oblivious to everything but her pain." She reaches the prison by night. She is incarcerated along with four other inmates, all guilty of murdering their husbands. The night wardress after recording the protagonist's crime as 'man slaughter', remarks that "it's becoming the fashion these days" (CT 88). When questioned by her

inmates about her crime she replies without a trace of remorse or emotion that it was death by castration. The element of revenge and retribution is thus introduced into the story. In the given context, revenge and retribution seem to be at odds with the protagonist in shackles, and the readers are curious to learn the sequence of events which is unfolded through flashback.

The story revolves around the central character whose name is Dikeledi, meaning 'tears.' True to her name, her life turns out to be pathetic. Losing her parents while young, she is married to Garesego Makopi, who abandons her with three children in pursuit of a life of dissipation and sexual gratification. Ironically, this happens in the year 1966, the year of Botswana's independence. The author cleverly implies that it is also the year of liberation for Dikeledi. She possesses "hands of strange power" making her adept at needle work—knitting, sewing and weaving wherewith she is able to provide for her family and give her children primary education. Her life becomes meaningful when she befriends her new neighbours, Kenelope and Paul Thebolo. The deep bond of friendship that develops with them gives her a taste of paradise. For the first time she realises, that not all men are like Garesego, "a broken wreck with no inner resources at all" (CT 92). Paul Thebolo proves himself to be a devoted husband, father, a responsible leader and a caring neighbour, with the power to create himself anew. In fact, he is an antithesis of Garesego who left his family to spend his undeserved exorbitant income on himself. The national income promises a two hundred percent increase in salary which grants him to participate in a "dizzy kind of death dance of wild dissipation". Bessie Head describes Paul Thebolo as a "poem of tenderness".

Dikeledi's eldest son Banabothe needs money to go to secondary school. Dikeledi has saved money for her son's education, but she is running a little short of the required amount. Under normal circumstances Dikeledi would not have thought of seeking assistance from her husband. Her association with the Thebolos, however, introduces her to a normal household where the woman is not treated as an object created to please men but the man as the head of the family is under an obligation to provide for the family and it is not to be deemed as a favour. The protagonist decides to ask her husband, Garesego for the little money she needs. Garesego insults Dikeledi, accusing her of illicit relationship with Paul Thebolo who confronts him. Later he writes to her about his intention to come home after eight years insinuating intimacy with her wherein, he would consider extending his help. Garesego's audacity proves to be the last straw for her (CT 88). No longer could she repress her anger, nor could she cope with this untenable relationship. Dikeledi waits till her husband falls fast asleep. She takes the knife she had been sharpening the whole afternoon prior to her husband's visit and chops off his genitals. "With an intent and brooding look, missing not one detail of it" (CT 103), Dikeledi unflinchingly stared at her husband slowly slipping away into the realm of gory death. Before being taken away Paul reassures her about her children saying "I will take them as my own and give them all a secondary school education (CT 103).

The story in itself is gripping, with Garesego getting what he deserved though he never suspects his wife is capable of avenging the abuse she was subjected to. The readers feel a sense of dissatisfaction as revenge and retribution seem to defeat its purpose with Dikeledi sentenced for life. Her fight for freedom seems to have boomeranged on her. The possibility of her predicament that despite separation, Garesego could come back anytime and has to be always wary of him coming back and resuming his abuse, one could see this is more of an inner victory. She killed him by castration because he used his organ to abuse women by objectifying them. Removing it showed the ultimate victory Dikeledi had over him. The years of oppression were so terrifying that her life behind bars seems less intimidating. Belling asks "what does one do with a female hero once she has discovered that her heroism is at odds with the social order that dictates happy endings?" (49). The reader has to get into the shoes of the protagonist and understand that they learn to live by their standards, taught by their life experiences and not bother about the social order that turns a blind eye to the sufferings of women. Anyway, Dikeledi is indeed the collector of treasures and

collects little acts of love and kindness which would stand in good stead for her during her ordeal, as it had strengthened her in the past.

Oppression, Retaliation and Revenge in "Life"

In "The Collector of Treasures", Dikeledi avenges the abuse inflicted on her by her husband Garesego though it meant sentenced for life. In "Life", another short story in the Collector of Treasures, a husband takes revenge on his wife. The story begins with all the Botswana born citizens sent back to their native country.This is how a young woman Life, the protagonist, is introduced to the readers. She migrated to Johannesburg with her parents when she was just ten years old. She is forced to return to her native village alone having lost both her parents in Johannesburg. Life appeared as a breath of fresh air for the village women who welcome her with open arms.

As per her village custom, her family's land is not occupied. Her village women help her in weeding out the yard and repairing her mud hut. They expect her to contribute towards enhancing their lifestyle. They are impressed to see Life loaded with money. She explains to them that it is easy to make money in Johannesburg if one knows where and how to tap it. Women become alert as they cannot see how being rich and honest simultaneously is possible. Their intuition proves right eventually as they learn that she is prostituting herself. As respectable women distance themselves from Life, she is sought by beer-brewing women. She continues her profession and soon her yard becomes as busy as Johannesburg township. Thanks to the influence of Life, the first pub is opened in the village. Life uses the pub for her business. Here she meets a wealthy and well-respected cattleman, Lesego for the first time as he had been away for three months at his cattle-post. Both Life and Lesego feel attracted to each other. They fall hard for one another though they have not met the other before. He reminded Life of the powerful gangsters she has seen in Johannesburg and Lesego is fascinated by the fact that she is very different from the women of her village.

Much to the consternation of Lesego's friends, the marriage between Lesego and Life is announced after a brief courtship. His friends are distraught as they know the promiscuous life-style of Life whereas their friend Lesego is not only well respected but the most eligible bachelor in the village. Sianana, Lesego's best friend tries to dissuade his friend from making the worst choice by revealing the truth about his fiancée. Lesego however says that Life has already confessed about her shady past. Life also announces her marriage to her beer-brewing friends resolving to turn over a new leaf and settle down to a decent life and give up her life of prostitution.

Lesego and Life get married to the surprise of the whole village. It is a patriarchal society in the village community and inevitably Lesego rules the roost. He lays down three rules to his wife which seem unacceptable to Life who had had all the freedom in her life before she met Lesego. She is not allowed to handle money, listening to radio is restricted and it is taboo to get involved with any other men. He threatens her with death if she is ever found to have reverted to her former lifestyle. Lesego overestimates his power since he is looked up to by the villagers. He comes to believe he exudes the same power over his wife too. Life is bored by her new lifestyle of harsh restrictions and tight leash, devoid of excitement, money and her so-called freedom.

One day, she finds herself alone with her husband gone to his cattle-post. He is gone just for three days but Life finds her old lifestyle irresistible. Throwing caution to winds, she plunges headlong into her promiscuous lifestyle once again, flouting her marriage vows. She lives for the day, forgetting that she lives in a village community where there is close bonding and nothing can be kept a secret. On his return, Lesego learns about his wife dating another man at his neighbour's house, enters there and murders her as he had already warned her earlier.

Lesego is arrested for murder. He remains calm and collected, though his crime is described as a crime of passion. His cool behaviour proves it otherwise. At the trial, Lesego does not plead for mercy. He narrates what happened and the white judge seems very sympathetic. He is given a lenient punishment of just five years behind bars. His friend Sianana asks him a million-dollar question as to why he had to

murder his wife instead of walking out on her. Lesego deigns not to answer the question. It is anybody's guess as to why he murdered his wife.

Lesego, when he first laid his eyes on Life, was attracted towards her as her personality exuded confidence which she had acquired through her money and a free lifestyle. His love for her is indeed genuine and deep. That is why he decides to marry her despite her lewd way of life in her past. He demands as her husband, that she renounce her old ways and be a worthy wife to him and a responsible mother to his children. It is evident that Life had not given serious thought to her marriage, which is a life-long commitment, trusting each other and living for each other. She, being used to excitement gets carried away by something as exciting as marriage until she finds how it controls her manner of living. She seems to live for herself alone and for the moment which do not augur anything good for their future. Her husband, Lesego values and honours conjugal bed and is appalled to see his wife throwing it away for fleeting pleasures, trampling his reputation underfoot. She seems to have scant love or respect for her husband. No self-respecting man can allow his wife or any other woman for that matter to hold him in contempt. Moreover, he had warned her beforehand of murder if she resorts to her old ways. The gory and untimely death of Life goes to prove that Lesego had meant every word he had told his wife as a warning. This story describes how a vindictive husband avenges his unfaithful and adulterous wife.

Divine Retribution in "Looking for a Rain God"

"Looking for a Rain God", is another short story which is based on a true incident. It is also about retribution but entirely different from the stories analysed earlier. This story birthed out of a newspaper report Bessie Head had read. It is about a gruesome incident which had taken place in Serowe in 1958. This story is about a village ravaged by drought for seven years, the impact it had on the villagers and their response with a special reference to Mokobja's family.

The setting for the story is an African village where the villagers being farmers, solely depend on the land for their very existence. They cleared the wild bush and ploughed it for farming. The farming families usually relocate to these lands at the behest of the village headmen announcing the advent of the cropping season. "The family of the old man, Mokobja were among those who left early for the lands" (CT 63) to prepare the land for cultivation at the promise of rain. Mokobja, along with his son Ramadi and his family prepare the land in readiness for cultivation when they receive a few showers. When they realize that their respite is short-lived, and all their efforts prove futile, they are desperate.

The villagers suffer from starvation as the rains on which they were dependent have failed them for seven years in a row. Some starving villagers resort to suicide while some others seek the help of charlatans and witch doctors who prey on the ignorance and superstition prevalent among the villagers who are unable to cope with the unrelenting Mother Nature, to grow rich. Mokobja's daughter in law, Tiro and her sister Nesta assist the men in farming. When the two women face the reality of failed rains again, they are totally shattered. Their desperation progresses into a complete breakdown. Every night, they both wail, mourning their pathetic condition. Both the men, Mokobja and Ramadi were rattled by this constant wailing of the two sisters. In contrast Ramadi's two girls Neo and Boseyong are in their happy, playful world of their own, oblivious to the harsh realities of the adult world. The two children play house with two improvised dolls, mimicking their very strict mother in whose presence they felt safe and reassured.

Wailing every night by the two women turns into a ritual, though nerve racking. But this ritual which aggravates the hopelessness felt by the two men, also serves to trigger Mokobja's memory of a ritual in the distant pre-Christian past in his community: "And he came alive a little struggling to recall the details which had been buried by years and years of prayers in a Christian church" (CT 65). The ritual involved offering human sacrifice to appease the rain god. Mokobja discusses this proposal with his son Ramadi. "There was", he said, "a certain rain god who accepted only the sacrifice of the bodies of children. The rain would fall and the

crops would grow" (CT 65). Ramadi grabs this as lifeline. It is distressing to see it is decided to be executed by the men with the connivance of the two women, especially the mother. Tragedy is compounded by the fact that the children are totally lost in their make-believe world, as children ought to, surrounded by their loved ones. Little do they know that they would be safer anywhere else but their family. Ultimately, they are sacrificed to the gods as an offering to bring down the eluding rain. The grandfather is convinced that his two granddaughters are sacrificed for general good for in their death the whole community will find life. Whatever be the justification, it only brings out the unpalatable and unimaginable truth of what man would not do to save himself.

A man pushed to the extremes, loses his humanity and rationality. He regresses to tribalism and barbarism. In the face of starvation and death, he succumbs to the survival instinct which insists on self-preservation over sanity and benevolence. When man experiences unkindness from nature, the milk of human kindness dries in him too and turns him into a monster. This ritual of child sacrifice had been prevalent in the erstwhile tribal society. It was acceptable in times of ignorance. But with the advent of Christianity, barbaric rituals lost its validity. People were taught not to fear the created but the Creator. It is true nature is intimidating and overwhelming, but to remain humane and sane, they were taught that faith can save them from what they fear. One's faith is tested during times of trials. When overcome by drought, the starvation and hysteria of the two sisters Tiro and Nesta reaches the limits. Mokobja buckles under the pressure. Instead of trusting God for provision, Mokobja plays God pronouncing doom upon the family and sealing the fate of so many.

After shedding the innocent blood of the two young children, Neo and Boseyong, their bodies are left lying on the ground as a sacrifice by Mokobja and Ramadi. The irony and tragedy are that there is not even the sign of rain. The sky remains brazen. The enormity of their crime just sinks in. There is no way of going back in time and correct the atrocious crime committed by the members of the family. Having fought a losing battle, the family retraces its steps back to the village. The villagers immediately notice the absence of the two girls. When asked about the two girls, Mokobja and Ramadi lie to them saying they both died of natural causes. Suspicious villagers inform the police. Under the police interrogation, Tiro breaks down and confesses about the sacrifice offered to appease the rain god. Now their recourse to solve the problem sound very hollow.

There are two components to man's law - modern law and tribal law. They are not always in tandem. Sometimes they would be in conflict. The community at large has embraced the modern law. Ritual killing of children as a sacrifice was acceptable in the tribal law but not allowed in the modern law. Both the father Mokobja and the son Ramadi are brought to justice. They have to face the consequences of their action. Both are executed, thus meeting the same fate they both meted out to the two young girls who had had their whole life before them. Whereas the catalysts for these murders, both the wailing sisters seem to go unpunished. In fact, they both suffer the worst punishment surviving their entire family. This story brings out divine retribution where the two innocent children are avenged.

Conclusion

The author Bessie Head is a victim of injustice since birth and till her untimely death she had to struggle incessantly with odds in her life. She could never set right the wrongs galore in her life let alone avenge all the wrongs meted out to her by her own parents and later by her husband. But the afore mentioned stories are built around the theme of revenge and retribution which could have given her vicarious satisfaction. According to Sara Letourneau revenge "is one of the classic literary master plots, where the protagonist believes he's been wronged and seeks to retaliate against the antagonist". She elaborates on this topic by pointing out, "But regardless of the protagonist's motivations, his target, and the impact his pursuit has on other characters, all revenge tales shed light on the destruction resulting from the protagonist's actions, from the loss of his morality to the price he and others may have to pay". The

stories of Bessie Head best substantiate the above quote, highlighting the fact that one can never thrive on revenge and retribution as there is always divine retribution which cannot be contained by man.

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STUDY ON GENDER AND AGE DIFFERENCES IN COVID-19 PATIENTS: RISK FACTORS FOR SEVERE DISEASE AND DEATH

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ABSTRACT

The COVID-19 pandemic is the Centre of focus since beginning of 2020 and Outbreak of virus took place in china and got spread across the world in very short span of time. More than 200 countries around the World are host of COVID-19 and fighting towards to control the severity of infection. This pandemic has considered as a greatest, most serious and challenging global health emergency faced by the human kind since after World War II. In the year 2002- 2003, 774 people were died and more than 8000 got suffered due to corona virus (World Health Organization). The rapid human to human transmission of corona is causing uncountable serious health problems related to respiratory, neurological, cardiovascular, nephrology etc. and further leading towards death. Over the months, every aspect of human life and environment have been suffering due to this pandemic such as social, psychological, cultural, economic, political and health severely. This research paper would get analysis the impacts of COVID-19 outbreak in context of demography, age difference and Gender. Moreover, it would highlights the associated risk factors of corona virus, which are responsible for sudden trigger of infection, complications and deaths.

Keywords: *COVID-19, Risk Factors, Impacts, Strategies and Standing plans.*

Introduction

The COVID-19 infection is spreading like anything even after 7 to 8 months of its outbreak and none of the health organization of the World had come up with any specific medicine or vaccine so far. The World Health Organization (WHO) and respective Governments have suggested some important precautions such as social distancing, uses of face mask, washing hands frequently, stay indoors, taking healthy and immunity booster diets, get aware and updated and work from home, in order to control and avoid transmission of the virus. As of 7:08 pm 11th September 2020 there have been 288787 new cases, 28040853 confirmed cases and 906092 deaths reported to world health organization due to corona infection. In term of region wise statistics Americas (North & South) are at top with 14447680 confirmed cases followed by Europe 4707944, Eastern Mediterranean 2071058, Africa 1106919 and Western Pacific has 535413 confirmed cases. Furthermore, table 1.1 shows the COVID-19 statistics in term confirmed cases and deaths country wise.

Table 1.1. COVID-19 Global Statistics up till 7:08 pm 11th September 2020

S.NO.	Country Name	Confirmed Cases	Deaths
1.	USA	6341309	190787
2.	India	4659984	77472
3.	Brazil	4238446	129522
4	Russian Federation	1051874	18365
5.	Peru	710067	30344
6.	Colombia	694664	22275
7.	Mexico	652364	69649
8.	South Africa	644438	15265
9.	Spain	554143	29699
10.	Argentina	524198	10994

- Source; World Health Organization (WHO) www.who.int.

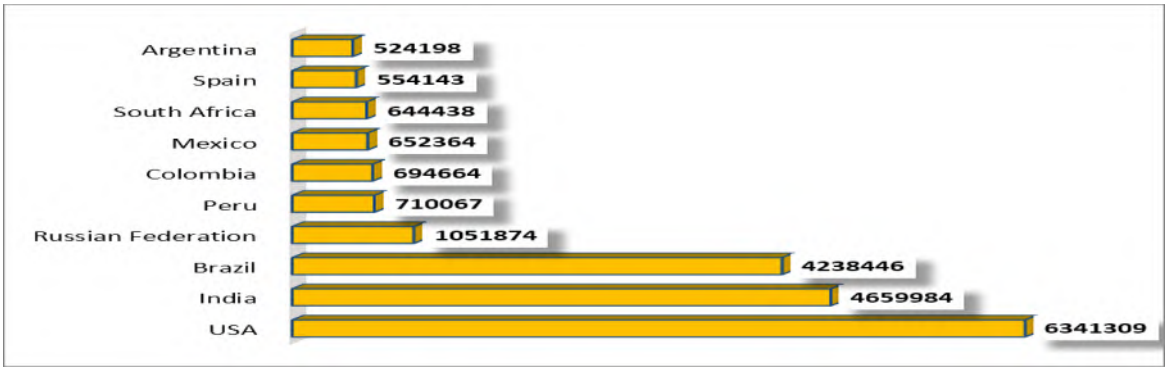


Figure 1.1. Top 10 highest number of COVID-19 cases country wise

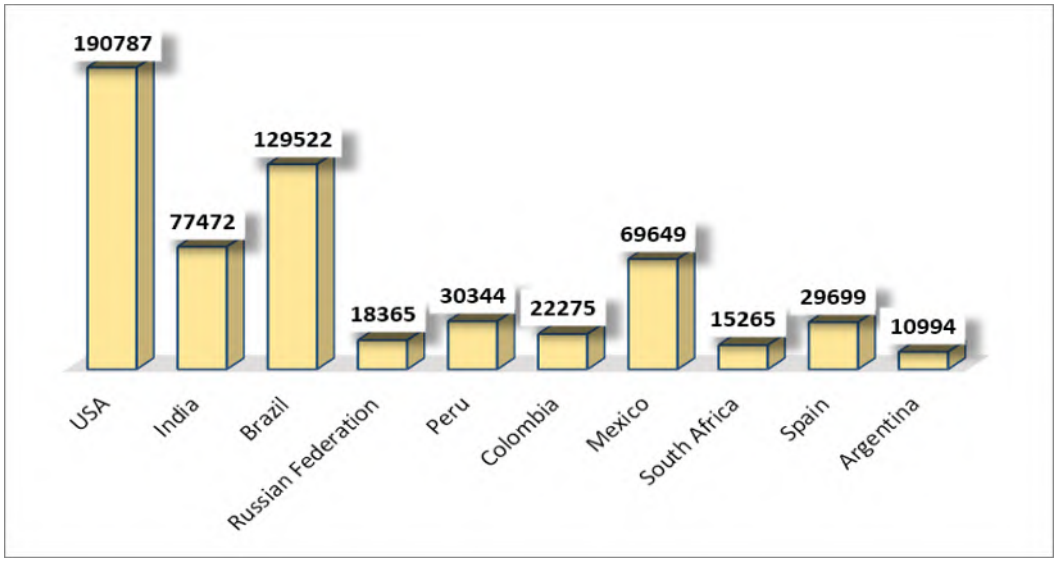


Figure 1.2. Top 10 highest number of COVID-19 deaths country wise

The figure 1.1 shows that how number of corona cases keep increasing every single day. As of 11th September 2020, United States of America has reported highest number of COVID-19 cases (6341309) across the World followed by India 4659984, Brazil 4238446, Russian Federation 1051874, Peru 710067, Colombia 694664, Mexico 652364, South Africa 644438, Spain 554143 and Argentina 524198. Whereas figure 1.2 shows the number of deaths across the Globe due to COVID-19 pandemic, unfortunately here also United States of America (USA) has reported heighted number of deaths (190787) followed by Brazil 129522, India
77472, Mexico 69649, Peru 30344, Spain 29699, Colombia 22275, Russian Federation 18365, South Africa 15265 and Argentina 10994.

1. Gender and Age Differences Among Covid-19 Patients

The male and female of all age groups, social classes and economic status are equal susceptible for COVID-19 infection. Even though there are difference in COVID-19 patients as per the gender and age across the World. As lifestyle, immunity power, age group, gender, person suffering from any other disease or complications and workplace etc. are matters in order to get COVID-19 infection. As per the World Health Organization (WHO) report there are more male patients than female who are suffering from COVID-19 in the World.

Table 1.2 COVID-19 Gender base Statistics in the World as on 7:08pm 11th Sept. 2020

Total COVID-19 cases	Gender	Total cases	Percentage
28040853	Male	15226183	54.3%
	Female	12814670	45.7%

Source; World Health Organization

Table 1.2 shows that across the world there is 45.7% female and 54.3% male patients of corona infection. That's mean male are more prone to get infection as compare to female.

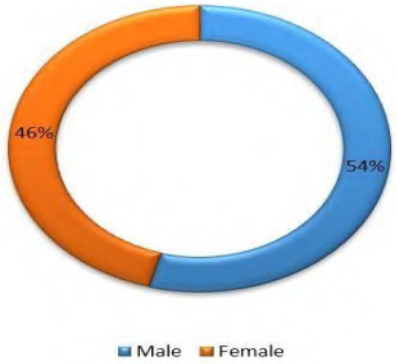


Figure 1.3 Share of Male and Female in COVID-19 Cases across the World.

Table 1.3 COVID-19 Gender base Statistics in the India as on 7:08pm 11th Sept. 2020

Total COVID-19 cases	Gender	Total cases	Percentage
4659984	Male	3541588	76%
	Female	1118396	24%

Source; World Health organization (WHO)

Table 1.3 shows that across the India there is 24% female and 76% male patients of corona infection. That's mean male are more prone to get infection as compare to female.

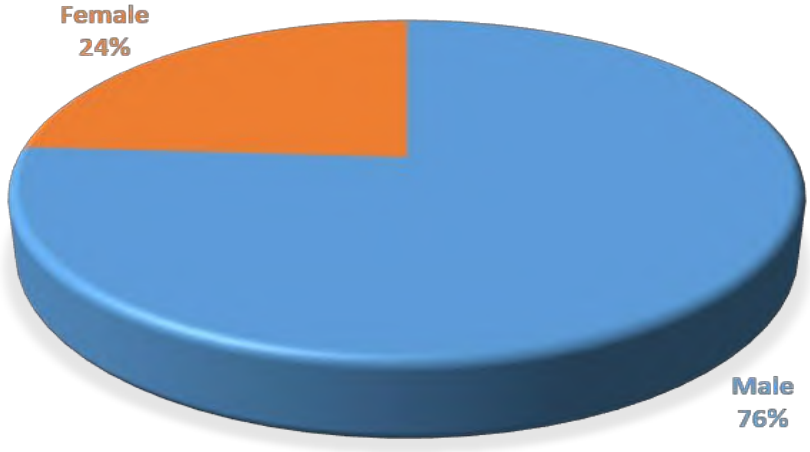


Figure 1.4 Share of Male and Female in COVID-19 cases across the India

From the figure 1.4 it is clear that county like India, where percentage of male COVID-19 patients
(76%) are significantly higher than female patients (24%). Moreover, age group is also play a significant role in order to lodgment and transmission of COVID-19 infection. As different age group would carry different level of immunity power and susceptibility towards corona infection. World health organization (WHO) suggested age group wise percentage share of COVID-19 cases which is computed in table 1.4.

Table 1.4 Age group wise COVID-19 Statistics as on 7:08pm 11th Sept. 2020

Age Group	Percentage of Cases
0-15	0.5%
15-25	0.8%
25-35	5.2%
35-45	7%
45-55	13%
55-65	24.5%
Above 65	62%

Source; World Health organization (WHO)

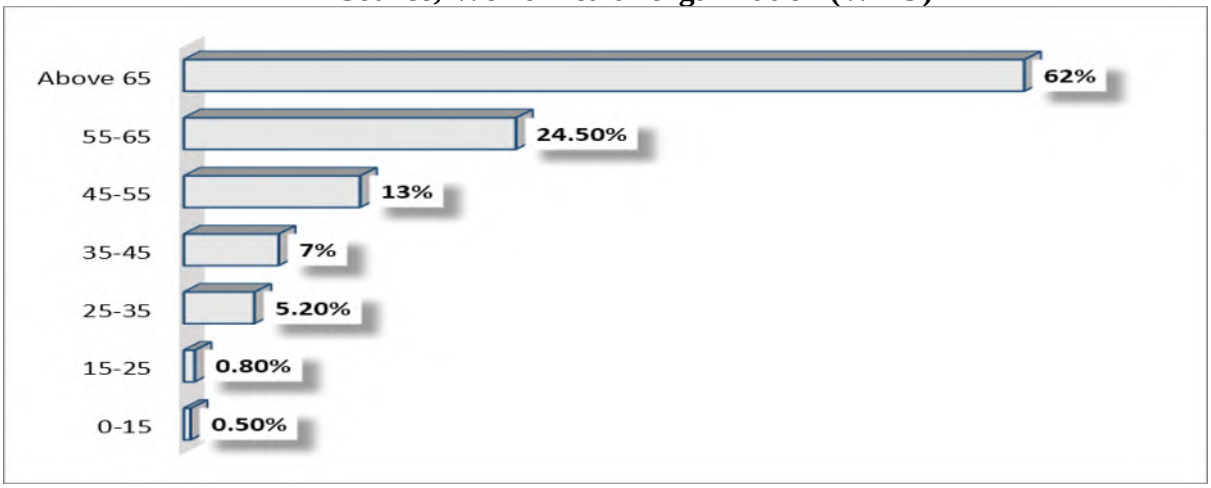


Figure 1.5 Age group wise COVID-19 cases across the World

2. Findings a nd Conclusions

From the above quantitative analysis of studied variables such as Gender and age group differences of COVID -19 patients, following major findings have been drawn and based on these findings conclusions would also been suggested;

1. Findings revealed that COVID-19 cases keep increasing day to day in substantial number as on 7:08 pm11th September 2020, United States of America has reported highest number of COVID-19 cases across the World followed by India, Brazil, Russian Federation, Peru, Colombia, Mexico, South Africa, Spain and Argentina, therefore there is need to take urgent and necessary steps in order to minimize transmission of virus.
2. United States of America has reported heighted number of deaths also followed by Brazil, India, Mexico, Peru, Spain, Colombia, Russian Federation, South Africa and Argentina. Increasing number of deaths leads our focus towards the betterment of health care system and speedy recovery of infected patients.
3. There are 45.7% female and 54.3% male patients suffering from corona infection in the World. This could be because of more number of women are staying indoors as compare to men and looking after them seriously. Whereas in India percentage of male and female COVID-19 patients are 76% and 24% respectively. This shows that most of Indian men are taking care of families, businesses and job that's why they are going out their houses which leads them to get more prone to COVID-19 as compare of women. Findings suggested that old age people are more prone to get COVID infection because of certain risk factors such as low immunity, etiological factors of other diseases, sugar, diabetes and blood pressures problems etc. As per World health organization report 015 age group kids are least susceptible to COVID -19 infection (0.5%) followed by 15- 25 age group (0.8%) 25-35 age group (5.2%), age group 35-45 (7%), age group 4555 (13%), age group 55-65 (24.5%) and Above 65 (62%).

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YOUTH LEADERSHIP IN INDIAN POLITICAL PARTIES: A SOCIOLOGICAL ANALYSIS

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ABSTRACT

This paper seeks to understand the nature of youth leadership in Indian political parties, and to examine that which type of youths wants to engage in political activities. It also tries to explain the nature, process and aspects of youth adopting politics as a career in contemporary India. In Indian politics, youth activism is found to some extent, but youth leaders at the higher level of politics are relatively limited. Generally, youth leaders in India are politicians' sons/daughters or family members. A common youth or a common student leader has fewer opportunities to become a leader in existing political system, either at the national level or the regional level. It is argued that nepotism is quite prevalent in the power politics in contemporary India, influencing the nature and process of power politics. Presently scenario Kanhaiya Kumar, Jignesh Mevani, Shehla Rashid and other youths are trying to emerge political leaders. Some important relevant issues/questions can be raised. What are socio-political factors of nepotism in the recruitment of youth leadership in power politics? What kind of fresh youth leadership is emerging? What is the social background of the fresh youth leaders? What kind changes it will bring about? The present paper analyzes these issues from a sociological point of view. This is a descriptive study and data have been collected through secondary sources and observations.

Key words: *youth, organization, leadership, political parties, participation.*

In Contemporary society youth and political parties have very effective place. They both influence each other for their interests. Youth interest and participation in politics are increasing for obtain objectives such as: - nation building, career opportunity, name, fame, power, money and decision makings. However now a days so many political parties are mobilizing youth for their political objectives. They mobilize youth through their political youth wings.

Youth is a social phenomenon which is ubiquitous. Basically it is biological aspect and often it is defined as the cultural aspect (Eisenstadt, 1972). Mostly youth has been defined in different age groups. According to UNESCO youth refer the group of people between 15 to 24 years of age. While the National Youth Policy 2003, initially described the youth in the age group from 15 to 35. However National youth policy 2014 modified it and considered youth as the person age from 15 to 29. All above the mention definitions of youth are similar because they are based on age group. In the present paper it is found that youth are from 14 to 40 years of age.

They both definitions of youth given by UNESCO and NYP 2013 are similar, because they are based on same parameter which is age – groups of youth. However in reality youth involves in different political activities are come from different age groups. Here it can be argued that the concept of youth can't be described in age groups. Age groups are not a parameter for describing youth features involve in politics.

Youths have incredible thoughts about the every aspects of society. They can be defined as a set of revolutionary thoughts. Youth apply their innovative thoughts in every field including politics. They can change the future of the society with their wellbeing and courageous behavior and innovative thinking.

Some thinkers arguethat youth can be described as the biological fact (Colman 1980, futches 1976). According to oxford advanced learner's dictionary "The time of life when a person is young, especially the time before a child becomes an adult" (8th edition).

Psychologically youth can be seen as adolescence, where they learn the society's behavior, values, pattern, ideal rules, and sexual behavior. This perspective of youth is relatively closer to the sociological concept of youth (Hall, 1904).

All above the mention concepts of youths focuses that youth neither described as age groups nor a biological and psychological fact. Youth is an experience that shapes an individual, s level of dependency. Youth can be seen as any person's characteristics such as freshness, ideology, appearance, enthusiasm,

vigor, and spirit. In spite of all these qualities youth can be seen as sign- post of any society, region and state. Because of these qualities of dominance, youth dominance can be seen in every field especially in politics.

Presently youth interest and involvement in politics is increasing because Political parties attracts youths in politics through implementation and offering new plans and program. So they can remain their vote bank and power in political system. Other side youth also take politics as career opportunity. Most of the youth and student leaders can be seen in universities and colleges who want to join politics. In this sense it can be said that political mobilization of youth is increasing. Therefore this paper analyzes the nature of youth leadership in contemporary Indian political process.

Emergence and Nature of fresh Youth Leadership

Students and youth movements have gained a place in the history of the national movement of India. They played a very important role in Indian national movement. In the beginning their organizations was not politically established. They fought against British government by their small clubs and no political organization. At the same time so many non-political youth organizations were established.

Before independence there were many political and non-political students and youth organization which were established for the mobilization of youth in the Indian national movement. Calcutta students association, one of the earliest and oldest organizations was founded in 1875 by A.M. Bose. Through this organization Surendranath Banerjee mobilized youth movement. The Bombay youth league was active at the same time for students movements. A large number of students were participated against Bengal partition (Saraswathi, 1988; & Chandra). Around the same time in 1885 Indian national congress was established in the form of social organization which was gradually developed as the political party. It was first Indian political party. Indian national congress had a very significant role in the development of Indian nationalism and independence movement of India (Desai, 1948& Chandra, 1988). Youth took participation in the Swadesi movement, non-cooperation movement, all India college students' conference & all Bengal students' conference. Jawaharlal Nehru and M.A. Jinnah were organized all India students conference at Lucknow in 1936.

These all conferences have helped to shape students union and created an atmosphere for the youths. Where youths come for their rights and they start struggle with unity. However gradually political organizations of youth and students were established like Bhartiya janta yuva moarcha(BJYM), Indian youth congress (IYC), All India student federation (AISF), Akhil Bhartiya Vidhyarthi Parishad (ABVP), Democratic Youth Federation of India (DYFI), National Students Union of India (NSUI), and All India Student Association (AISA), Student federation of India(SFI) etc.So it can be said that earlier students and youth were joined with some local level youth leagues and organization which is non-political.

Gradually when Indian national congress and other political parties was formed, then they mobilizes youth under their youth or student wings. And student movements guided by congress, socialist, communist and Rashtriya Swayamsevak sangh (RSS).Therefore within the student community, students divided into two groups. One group of students were taking interest in the movement of Indian freedom, however other group of students were dividing on the ideological based (Saraswathi, 1988).

Today we can see various political parties and each of them have their own political youth wings or student organization. These youth wings are followed by their political party, s ideology. Therefore it can be argued that pre independence youth had their own ideas, thoughts, energy and motive but post-independence youth are influenced by political parties.

Political parties use youth as pressure groups (weiner, 1963). Some research shows the political involvement of youth in university and college campuses in which it is explained that how political parties use youth organizations for doing bad activities in educational system (Kabir; 1958, Carmack; 1961, Singh; 1968,Ross; 1969, Gasfield, 1970).

So it can be argued that the political background and emergence of youth has come in the existence from the independence movement. Youth can be defined as the set of innovative thoughts. They are energetic, enthuse, full of mightiness. Therefore they decided to involve in independence movement.Eventually they came in the touch of political parties. Every political party has a youth and student organization. Through this they can relates their party goals with other youth. And they can remain in the power politics.

But today's scenario has been changed. In present time not only political parties has their goals and benefits but youth also take interest in politics for many reasons. So youth also use political parties for their political career. Therefore it can be observed that dialectical relations have been found between political parties and youth organizations. Today's youth protest with their formative ideas with the support of their political parties.

Directly ideology level youth are organized by their political parties but indirectly youth wants to make their place and identity in political parties by their activities. And they want to emerge as a powerful personality in the context of society.

On the other hand by using the capacity of youth as pressure groups political parties want to remain their place position and power in politics. So it can be said that directly cooperative relations are found between political parties and youth& student, organizations but indirectly their relations are dialectical and comparatives.

So it can be argued that nature of youth leadership in contemporary India is also based and depends on the political parties and that is the reason we can find two types of youth leadership.

1- Youth leadership followed by the left wing ,s ideology
2- Youth leadership followed by the right wing ,s ideology

Normally the left wing ideology is described by an emphasis on ideas such as liberty, Similarity, companionship, rights, progress, reformation, and internationalism while the right wing ideology is described by an emphasis on thoughts such as authority, hierarchy, order, duty, tradition, reaction and nationalism.

Youth are mainly organized by political parties. So it is normal to see their impact on the youth organizations. In Indian politics youth activism is found to some extent but youth leaders at the higher level of politics are relatively limited. Generally youth larders in India are politicians, sons and daughters or family members. A common youth or common student leaders have fewer opportunities to become leaders in existing political system. Either at the national level or the regional level it is argued that nepotism is quit prevalent in the power politics in contemporary India, influencing the nature and process of power politics. Because of nepotism fresh or common youth have fewer changes to go in politics, and this can be observed the division of power politics in society. Only son and daughters of political leaders gets chance in entry the politics and youth don't get opportunity to improve politics by their revolutionary and innovative ideas.

Therefore reformative changes could not come in the politics; people have to cast their vote to the old political parties because opposition or any other candidate takes over the place in the political system. Today there is a need of fresh leaders without any political background, for this government should encourages youth for joining politics, government should reserves seat for the youth in the Loksabha and Rajyasabha election. In the present scenario we can see many youth like kanhaiyakumar, jigneshmevani, Shehla Rashid, Hardikpatel, and other youths are trying to participate in the politics by their protests against the present political system.

Increasing nepotism in politics is the root cause of the youth disenchantment in current political system. In spite of all youth are also not taking interest to cast their vote. The percentages of youth voters are high but they are not interested to cast their vote, because they think that the existing political parties are corrupted. But they don't think that they can change the political system as well as social system by casting their vote.

Conclusion

If fresh youth leaders will take participation in the politics, they will bring new political system by their fresh and innovative thoughts. Comparatively young people have less responsibilities and more zeal towards the betterment of society. Youths are tending to more enthusiastic, energetic and flexible. The involvement of young people in politics ensures inclusiveness. Youth political leaders can be erased the negative perception about politics in the mind set of people. Youth leadership is the need of the hour in Indian society as well as politics, because current political leaders have old mentality about development. At times they oppose new ideas. Their main objective is to remain in the politics for a long time they don't focuses on peoples need. Today's youth have all types all knowledge, they can handle every situation. They know how to use modern technologies. They can change old political values and replace them form secularism, democratic, scientific, socialism. Freedom, social justice loaded values. However it can also be a possibility that youth leaders ideology will change with their political parties. Young people can easily be manipulated and can be used as pressure groups of older political parties, because today's youth take politics as career and they also want to become a powerful dominating personality in the society. So today there is a need to support young leadership in an appropriate way. For increasing participation of common youth in politics in the politics reservation policy should be created in the political parties and parliament as well. This reservation should only for common people not for politician's son and daughters. Political awareness should be given to the students in schools, colleges and the universities. Youth should be given opportunity to do internship in the parliament.

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FACTORS AFFECTING ELECTRONIC SHOPPING CART ABANDONMENT AND FUTURE RESEARCH DIRECTIONS

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ABSTRACT

The study reviewed 33 empirical research studies related to online shopping for a period of 2000-2020. This is one of the first studies that critically analyzed the reasons for electronic shopping cart abandonment with special reference to the process of online shopping. The present research study uses multiple technology based and behavioral theories to identify various prevalent motives, facilitators and barriers affecting online shopping decisions. All these factors have been organized as uniquely attributable to each stage of online shopping process. The major factors that emerged from the review are: hedonic motive, functional motive, organization and research motive, consumer characteristics (experience, perceptions and attitude) and uncertainty factors. The present study has multiple implications for academicians and industry. It will help policy makers and managers in formulating and implementing customer focused strategies to curb down electronic shopping cart abandonment.

Keywords: *E- Commerce, Electronic shopping cart abandonment, Online shopping process, Online retailing, Non-buying behavior*

JEL Classification- M31, L81, O33

1. Introduction

The evolution of E-commerce has changed the sphere of retailing business as momentum has shifted towards online retailing. The way in which retailing was done and the way customers used to buy and engage with the products has been changed (Sondhi, 2017). Many retailers have brought their offline business online and others have started a new business online (Wildeboer and Donkers, 2014).

The E-commerce industry has proved a boon for e-retailers all over the world and is showing a steady growth rate. It is expected to show an annual growth rate of 7.8 percent from the year 2020 to 2024. This will increase the market volume of the E-commerce industry up to US$3,116,089 million by 2024. It is expected that in the year 2024, 4658.1 million internet users will be E-commerce buyers. In the year 2018, the percentage of online shoppers was increased with tremendous speed (92 percent of internet users in China, 93 percent in the U.S. and 97 percent in the U.K.). Thus, the E-commerce industry has a promising future with a steady growth rate.

The sudden outbreak of the pandemic COVID-19 has caused customers to adopt online shopping due to lockdown, social distancing and other measures. According to the World Trade Organization (WTO) report 2020, this sudden scenario has resulted in the spike of the business to commerce (B2C) sale particularly for household products, foods and medical supplies. The organization also reported that E-commerce will support small businesses and can act as a solution for customers. According to the Hello Heart Blog, 2020 shopping can act as a tool to relieve stress and the negative vibes created by this pandemic. So online shopping can give customers a break from this stressful environment and they can invest themselves in browsing and purchasing products and services that they like.

Globally, online shoppers are increasing each year but their online spending is very low which causes losses to the e-retailers. Electronic shopping cart abandonment is hurting the e-retailers' efforts as 43.8 percent of customers leave the retail website only after browsing the product pages and on average, globally about 75% of online retail orders are abandoned (Charlton, 2019). As per the Baymard Institute report 2020, the average global electronic shopping cart abandonment rate is about 70 percent.

Xu and Huang (2015) gave a new perspective by defining abandonment as leaving the products in the electronic shopping at any stage of the buying process i.e., from logging into the shopping website to the final payment stage. Kristensen (2021) reported that on average

customers leave $4 trillion merchandise in the cart every year. Electronic shopping cart abandonment costs a loss of $18 billion of E-commerce revenue opportunity every year. Therefore, for the future growth of the E-commerce industry and to increase the revenue and growth of the online retailing sector, it is important to understand the reasons for electronic shopping cart abandonment as cart abandonment is not the problem but the symptom of the problem (Nair, 2016).

2. Research Methodology

This paper aims to assess the current state of applicability of various theories related to online purchase behavior and understand the intricacies of the online purchase process. Keeping in view the above objective, the existing literature on the factors affecting online shopping and electronic shopping cart abandonment (ESCA) has been analyzed to provide a comprehensive framework for future researchers and marketers who may be interested in it.

2.1 Scope

The present study explored and synthesized the existing review of literature on the phenomenon of ESCA from the year 2000-2020. The reason for choosing such a period is because during the late nineties online shopping websites evolved worldwide. As in 1994 first online transaction was done through the Net Market website and immediately after this Amazon and eBay launched their online website in 1995. Towards the end of the 1990s, the online marketing concept became mature and commercialization of the internet took place at a faster pace.

2.2 Selection criteria

The keywords used for searching the relevant studies were: 'online buying behavior', 'ESCA', 'online shopping' and 'non-buying behavior'. A total of 33 studies which were most relevant to the present study were examined. These studies were analyzed by making both comparisons within the studies and between the studies as suggested by Kaushik and Rahman (2014).

2.3 Organization of the paper

The review section of the paper is divided into three sections, the first section discusses the theoretical framework related to an online purchase, the second section elaborates the stages in the online shopping process and the motives at each stage, and the third section compiles and discusses the critical analysis of the factors that may affect ESCA. The research paper ends with a brief discussion of implications, limitations and future scope for studies.

3. Stages of Online Purchase- Motives and Challenges

It is necessary to figure out the process involved in online shopping and the psychological motivators at each stage of customer decision making to understand the customers' buying and non-buying behavior in the online shopping environment. Howard and Sheth (1969) gave a model on 'Theory of Buyer Behavior' which recommends that there are four stages in the online shopping process: electronic search stage, electronic consideration stage, electronic evaluation stage and lastly electronic purchase stage (Close and Kukar- Kinney, 2010; Li and Chatterjee, 2005).

3.1 Electronic search stage- attitude, social influence, hedonic and utilitarian motive

The electronic search stage mainly includes the reason for preferring online shopping over offline shopping. The acceptance of online shopping is influenced by the attitude that customers have towards online shopping. The theory of planned behavior is usually considered in the understanding of customers' intention and behavior in different contexts. As per this theory, the three variables: attitude, subjective norms (social influence) and perceived behavioral control influence the customers' intention and behavior.

In an online environment customers' attitude towards online shopping may affect the customers' intention to purchase the products and services online. Customers who have a favorable attitude towards online shopping are more likely to make the purchase rather than abandoning the electronic shopping cart (Javadi et.al, 2012). Thus, it can be proposed that attitude towards electronic shopping has a

negative relationship with ESCA. Social influence may affect the customers' online product preferences. If the referral group has a negative opinion, then the customers are more likely to abandon the electronic shopping cart (Ashraf et al., 2014).

The customer generally visits an online shopping website with hedonic and utilitarian motive (Zeba et. al, 2020; Krithika and Rajini, 2017; Wildeboer and Donkers, 2014: Arnold and Reynolds, 2003). Hedonic motives can be defined as when a customer is involved in shopping for experiences related to fun and pleasure (Zeba et. al, 2020). The various experiences that customers can have from online shopping are: idea shopping, value shopping, gratification shopping, and adventure shopping (Arnold and Reynolds, 2003).

The customers who visit online shopping websites with an intention to overcome boredom or for fun and entertainment are more likely to browse the pages of online shopping websites than making the purchases (Wildeboer and Donkers, 2014; Close and Kukar- Kinney, 2012). Such customers want to satisfy their browsing motive and are more likely to abandon the electronic shopping cart (Erdil, 2018; Arumugam and Parasuraman, 2017; Krithika and Rajni, 2017).

The utilitarian motive is associated with the functional aspect with which customers indulge themselves in an activity. The functional aspect of online shopping is either the purchase intent of the customer at the given online session or to acquire the functional benefits of online shopping.

Utilitarian motives behind electronic shopping are largely goal-oriented and task-based (Close and Kukar- Kinney, 2012; Franz, 2014). Customers with utilitarian motives are more likely to make a purchase of the products rather than abandoning the electronic shopping cart.

Hedonic and utilitarian motives may also have an indirect effect on ESCA via customer's perceived risk and benefit (Krithika and Rajni 2017; Wildeboer and Donkers, 2014). Thus, hedonic and utilitarian motives are important factors that may affect customers' purchase intention and buying behavior.

3.2 Electronic consideration stage- research and organization motive

During the electronic consideration stage, customers use the electronic shopping carts as a means of research and organizational tool. The customer tries to get information about the product by browsing through pages of one online shopping website or by browsing on different online shopping websites (Close and Kukar- Kinney, 2010). There are unlimited choices online that lead to choice conflict or cynical attitude (Arumugam and Parasuraman, 2017).

In the efforts to overcome choice conflict, they sometimes involve themselves in perceived decision difficulty because of over information, which may lead to ESCA (Xu and Huang, 2015; Close and Kukar- Kinney, 2012). Over cautiousness/rationality, postponement of purchase decisions due to overthinking about the quality and value of the product may also lead to ESCA (Negra and Mzoughi, 2012).

Sometimes, the customers use organization and research tools as information gathering and they prefer to buy from land-based retailers rather than shop online (Close and Kukar-Kinney, 2010). Organization and research tool directly or indirectly affects the ESCA (Erdil, 2018; Arumugam and Parasuraman, 2017; Muster, 2016; Xu and Huang, 2015).

3.3 Electronic evaluation stage- choice conflict resolution and trust

During the electronic evaluation stage, the customer evaluates the products under consideration or in the e-cart on the basis of some set of pre-decided criteria for decision making. They try to find out similarities and differences among what they found and what they expected to resolve the choice conflict (Close and Kukar-Kinney, 2010).

The customers generally evaluate according to their characteristics. The customers may generally have the budget which they allocate among different product categories or to online shopping expenses. Customer may inadvertently choose a product that is out of budget and realizes it at some later stage of the buying process leading to ESCA (Sondhi, 2017; Cho, *et al.*, 2006). Apart from mental budgeting and accounting, lack of confidence and hesitation may also lead to ESCA (Huang

et al., 2017). The online experiences of customers may also influence their intentions to make online purchases positively (El-Ansary, 2013; Close and Kukar- Kinney, 2012). When a customer is unable to physically examine and experience the products; it is the trust on the website which influences the purchase decision making. Thus, trust in online shopping websites and products influences the customers' behavioral intention in the online environment (De Silva and Wijayanayake, 2016; El-Ansary, 2013).

Thus, customer characteristics play an important role in determining the buying intention of the customers as the customer evaluates the product attributes and website attributes according to pre-decided criteria, they have made for decision making (Close and Kukar- Kinney, 2010).

3.4 Electronic payment stage – convenience, economy and privacy concerns

After completing the evaluation of the products, customer enters the electronic checkout and payment stage. Perceived waiting time, non- supportive payment mechanism, perceived behavioral control, perceived cost, instant payment mechanism, urgency of purchase and perceived online behavioral tracking significantly affect the customer buying intention and ESCA (Erdil, 2018; Nair, 2016; Sreya and Raveendran, 2016; Shrivastava, 2014; Kukar-Kinney and Close, 2010; Rajamma, *et al.*, 2009; Cho *et al.*, 2006; Li and Chaterjee, 2005)The customers may sometimes get frustrated when they have to wait for more than usual or due to long perceived waiting (Krithika and Rajini, 2018; Shrivastava, 2014; Rajamma*et al.*, 2009). A customer can also face inconvenience in the form of a non-supportive payment mechanism (non- availability of plastic cards demanded for the payment). Such frustrated and dissatisfied customers prefer ESCA (De Silva and Wijayanayake, 2016; Nair, 2016; Javadi et.al, 2012).

In an online environment, perceived behavioral control refers to customers' perceptions of their ability how well they can perform the online purchasing task. Sometimes, the online shopping environment becomes stressful for customers when they encounter difficulty in handling new and advanced technology, navigating sites, queuing and crowding. So, to cope up with the stressful situation customers generally try to avoid it which ultimately results into ESCA (Albrecht et al., 2017).

An additional cost in the form of shipping charges, taxes, handling cost may appear at the checkout stage and raise the overall amount payable or cost of the product above the budgeted amount expected by the customers. Sometimes customers try to avail the discount on promo code, coupons, and vouchers but when they don't work, this restrains them from completing the purchase procedure (Erdil, 2018; Nair, 2016; Sreya and Raveendran, 2016; Close and Kukar- Kinney, 2012).

Usually, customers' purchase decision is strongly influenced by the purchase and payment intention they have while doing online shopping. When a customer visits the online shopping website because he needs a particular product the chance of purchasing is high as compared to the customer who just visits without a particular need (Wildeboer and Donkers, 2014). Customers' payment intention (Rajamma, *et al.*, 2009) and strong purchase intention are negatively related to ESCA (Wildeboer and Donkers, 2014; Close and Kukar- Kinney, 2010).

Perceived online behavioral tracking is the kind of tracking and compiling of the records of customer's tastes, preferences or interests, and communications over time across the social websites they use in order to deliver personalized advertising (Rajini and Krithika, 2018). Many online shopping websites use the cookies file to monitor customers' online activities. This raises privacy concerns which lead to ESCA (Close and Kukar-Kinney, 2010).

The table 4 summarizes the various factors which may affect ESCA based on the review of the literature. The factors are extracted to develop the conceptual framework of the customers' behavioral motivators that influences ESCA attributable to different stages of the buying process.

Table 4: Factors affecting ESCA according to stages of buying process

Stage	Variable	Impact on ESCA	Studies
E-search stage	Attitude towards online shopping	-	El- Ansary (2013), Javadi et.al (2012)
		(-)	Cho et al., (2006)
	Subjective norms (social influence)	-	Ashraf et al., (2014), Javadi et.al (2012)
	Hedonic motives	+	Erdil, (2018),Krithika and Rajini (2017), Wildeboer and Donkers (2014), Singh (2014), Close and Kukar- Kinney (2010), Arnold and Reynolds (2003)
		(+)	Krithika and Rajini (2017)
	Utilitarian motives	-	Krithika and Rajini (2017), Wildeboer and Donkers(2014)
		(+)	Krithika and Rajini (2017)
E-consideration stage	Research about the product	+	Erdil (2018), Xu and Huang (2015), Wildeboer and Donkers (2014), Negra and Mzoughi (2012), Close and Kukar- Kinney, (2012), Close and Kukar-Kinney (2010),Cho et al., (2006), Li and Chatterjee (2005)
		(+)	Arumugam and Parasuraman (2017)
		(-)	Msuter(2016)
	Organization of product	+	Xu and Huang (2015), Wildeboer and Donkers (2014), Negra and Mzoughi (2012), Close and Kukar-Kinney, (2012), Close and Kukar-Kinney (2010),Cho et al., (2006), Li and Chatterjee (2005)
		(+)	Arumugam and Parasuraman (2017)
E-Evaluation stage	Choice conflict	+	Erdil (2018), Cho et al., (2006)
		(+)	Muster (2016)
	Cognitive conflict	+	Cho et al., (2006)
		(+)	Huang et al., (2017)
	Mental budgeting and accounting	+	Cho et al., (2006)
		(+)	Sondhi (2017)
	Hesitation checkout, Self-efficacy	+	Huang et al., (2017), Cho et al., (2006)
	Shopping Stress	+	Albrecht et al., (2017)
	Internet experience and Frequency of use	+	El- Ansary (2013), Close and Kukar-Kinney (2010)
	E- Service Quality	+	El- Ansary (2013)
	Trust	-	El- Ansary (2013), Cho et al., (2006), Liu et al., (2004)
		(-)	De Silva and Wijayanayake (2016)

Stage	Variable	Impact on ESCA	Studies
E-Purchase stage	Perceived transaction inconvenience	+	Erdil (2018), Nair (2016), Sreya and Raveendran (2016), Shrivastava (2014), Rajamma et al., (2009), Cho et al.., (2006), Li and Chatterjee (2005),
	Perceived waiting time	+	Krithika and Rajini (2018), Shrivastava (2014)
		-	Rajamma et al., (2009)
	Perceived cost	+	Erdil (2018), Nair (2016), Sreya and Raveendran (2016), Close and Kukar-Kinney, (2012), Close and Kukar-Kinney (2010),Cho et al., (2006)
		(+)	Xu and Huang (2015)
	Instant Payment Intention	-	Xu and Huang (2015)
	Urgency of Purchase	-	Wildeboer and Donkers (2014), Close and Kukar-Kinney (2010)
	Perceived online behavioral tracking	+	Krithika and Rajini (2018), Close and Kukar-Kinney (2010)

4.Findings and Suggestions

The existing review of literature from the published sources for the past twenty years (2000-2020) related to the phenomenon of ESCA has been synthesized for the present study to develop a comprehensive insight of the theoretical framework. The findings suggest that numerous factors persuade customers to leave the buying process incomplete. Customers not only leave the buying process incomplete due to dissatisfaction with the website and the product attributes only but also due to several other reasons like the customers' motivation behind the online shopping, consumer characteristics, uncertainty factors and other factors.

4.1 Customers' motivation behind the online shopping

Out of the thirty-three studies explored, three main motivations behind the online shopping have been found: hedonic motive, utilitarian motive and organization and research motive. These motives have been found as the important factors which influence the customers' online buying intentions.

4.1.1 Hedonic motive

As depicted in the table IV, ten studies measured the relationship between hedonic motive and ESCA. All these studies unanimously reported that hedonic motive has a direct and significant positive impact on ESCA which means customers with higher hedonic motives are more likely to abandon the electronic shopping cart. However, in one study hedonic motive was also found indirectly affecting ESCA since it significantly affects perceived risk which further leads to ESCA (Krithika and Rajini, 2017).

4.1.2 Utilitarian motive

The two studies that considered the relationship between utilitarian motive and ESCA reported that there was a direct and significant negative impact of utilitarian motive on ESCA which means that the customers with a more utilitarian motive are more likely to make the purchase and less likely to abandon (Krithika and Rajini, 2017; Wildeboer and Donkers, 2014). Krithika and Rajini (2017) also reported the indirect significant impact of utilitarian motive on ESCA with the moderating effect of perceived risk.

4.1.3 Organization and Research Motive

In the electronic consideration stage of the buying process, organizational and research motive have been found to impact the buying intention of customer's behavior. Customers usually use organizational and research tool as

an additional benefit of using e-cart and as an information gathering tool. As depicted in the table IV, seven studies have analyzed the relationship by considering both organization and research of the product variables and all the studies reported a direct and significant positive impact of organization and research tool on ESCA. While only two studies have studied the relationship with only research of the product variable (Erdil, 2018; Muster, 2016). Erdil (2018) also found a direct and significant positive impact of research of the product and ESCA. While one study found an indirectand significant positive impact of organization and research tool on ESCA (Muster, 2016).

4.2 Consumer Characteristics

From the existing review of literature, it was found that consumer characteristics play a dominant role in influencing the customer's behavior and intention in the online environment. This factor plays a major role in the third stage of the online buying process i.e., electronic evaluation stage. The various factors included in this category are cognitive and choice conflict, mental budgeting, and accounting, self-efficacy of the customer, shopping stress, hesitation checkout, and trust. Moreover, internet experience and frequency of use of the online websites can be used as additional factors in the model to increase the predictive power of the model. This may give a better understanding of online shopping behavior and corresponding ESCA.

4.2.1 Cognitive and choice conflict

Customers usually experience two kinds of conflicts while shopping online: cognitive and choice conflict. As depicted in table IV, two studies reported a direct and significant positive impact of choice conflict on ESCA while only one study reported the direct and significant positive impact of cognitive conflict on ESCA (Erdil, 2018; Cho et al., 2006). In one study choice conflict was also found indirectly impacting ESCA, since choice conflict increases the pre decision difficulty of the customers which ultimately results in the ESCA (Muster, 2016).

Cognitive conflict was also found indirectly impacting ESCA as cognitive conflict disturbs the emotional ambivalence of the customers which results in the ESCA (Huang *et al*., 2017).

There is a need to further investigate this factor in the phenomenon of ESCA as a very few studies have analyzed the relationship of this factor with ESCA.

4.2.2 Mental budgeting and accounting

One study reported the direct and significant positive effect of mental budgeting and accounting on ESCA while one study reported the indirect and significant positive effect of mental budgeting and accounting on ESCA. Sondhi (2017) reported that if the customer's cart cost exceeds their budget, it will result in cognitive dissonance and stress and to cope up with this situation, customers prefer to abandon than purchase.

4.2.3Self-efficacy and shopping stress

Huang *et al.* (2017) found that self-efficacy indirectly impacts the ESCA. Self- efficacy was found negatively associated with emotional ambivalence that mediates the relationship between self-efficacy and ESCA. Albrecht et al., (2017) found that if customer experience stress during online shopping there is more chances of abandonment than purchase.

4.2.4 Trust

Three studies reported that trust has a direct and significant negative impact on the ESCA (El-Ansary, 2013; Cho et al., 2006). However, one study validated the moderating effect of trust on the relationship between buying intention and buying behavior (De Silva and Wijayanayake, 2016)

4.3 Uncertainty factors

The customer enters the e-purchase stage with the motive to purchase the product after getting satisfied with evaluating their choices. When proceeding to the checkout and payment stage customers may encounter some glitches or hindrances which turns their interest into anguish. From the existing review of literature following uncertainty factors have been found out: perceived transaction inconvenience, perceived waiting time, perceived cost, instant payment intention and urgency of purchase and perceived online behavioral tracking.

4.3.1Perceived transaction inconvenience and perceived waiting time

Out of the thirty-three studies explored for the present study, seven studies have studied the relationship between perceived transaction inconvenience and ESCA. All these studies reported the direct and significant positive impact of perceived transaction inconvenience on ESCA. Some researchers further classified the inconvenience of waiting time during the online shopping process as another factor i.e., perceived waiting time. As depicted in table IV, two studies reported a direct and significant positive impact of perceived waiting time on ESCA while one study reported a direct and significant negative impact of perceived waiting time on ESCA. This negative impact is due to the efforts in terms of time spent on the purchase process (Rajamma et. al, 2009)

4.3.2 Perceived cost

A total of seven studies have explored the relationship between perceived cost and ESCA. Six studies have reported the direct and significant positive impact of perceived cost on ESCA which means when customers suddenly experience additional cost at the checkout and payment stage, they more likely to abandon the purchase. Xu and Huang (2015) on the other hand reported that when customers experience additional costs, they are more likely to go for organization and research of product that may further influence ESCA.

4.3.3 Instant payment intention and urgency of purchase

As depicted in the table IV, three studies reported that with the increase in the urgency to purchase, the frequency of online buying also increases and the chances of abandonment decreases. Only one study observed the relationship between instant payment intention and ESCA. Xu and Huang (2015) reported the negative relationship between instant payment intention and ESCA which means once customers form a strong payment intention while doing online shopping the chances of purchasing the products are very high.

4.3.4 Perceived online behavioral tracking

There is a need to further investigate this factor in the phenomenon of ESCA as very few studies have observed this factor. Only two studies observed the relationship between perceived online behavioral tracking and ESCA. Both the studies unanimously reported that a direct and significant positive relationship exists between the two concepts (Krithika and Rajini, 2018; Close and Kuakr-Kinney, 2010).

Thus, it can be concluded that although the marketers cannot influence the motives of searching the online shopping websites, they can still capture the attention of such customers, keep them engaged on the website by ample suggestions related to the products and services they are exploring and give them reminders for the products in their cart via different means. It is also the need of the hour that the e-retailers must upgrade their website as in order to make websites more appealing and attractive developers sometimes make it complicated. But shoppers mostly resist complex looking options and want an easily navigable websites to avoid inconveniences. Websites must be more informative and instructional one than complicated so that it allows customers to reach desired products in a smaller number of clicks.

Moreover, findings also reported that providing a large number of choices, attractive websites without any opting guidelines is a kind of provoking to the customers. Once the customers are tired or mentally exhausted, they just leave the site without making any purchase. So, it is crucial for e-retailers to consider the mindset of their customers and must come up as a professional expert to assure products and services to the customers which they exactly crave for. Online retailers can adopt various offering techniques like gamification techniques, social shopping, and guided selling techniques to entertain and create a long-lasting impression on their customers. Like Forever 21 adopted social shopping technique, they teamed up with Chirpify platform to promote holiday discounts to its Twitter followers. Customers have to retweet the original post of the company to get a 10 per cent discount on the product. This not only helps the company to attract customers through discounts but also helps to enter into their social space and increase traffic to their website. Social shopping or social commerce

has a promising future in India because of the highest number of internet users. So, the e-commerce industries can take advantage of this emerging trend to overcome the electronic cart abandonment. To avoid losses, the customers may be offered an optimum time limit to purchase the product else it may be removed from the cart to be added back to the stock and offered to other prospects.

5. Implications of the Study

The present study has implications for both academics and industry.

5.1 Implications for academics

The present study identified the customers' behavioral motivators behind each stage of the online buying process. Academicians can use this insight and can analyze each stage of ESCA separately by the use of appropriate factors that have been discussed in this paper. The stage wise analysis of abandoning of the cart may help in conducting in depth studies for suggesting more pragmatic strategies for improving the customer purchase process experience.

The future researchers may continue to expand the technology theories in the ESCA context. For example the unified theory of acceptance and use of technology model has not yet been used in the research on understanding the phenomenon of electronic shopping cart abandonment. This model is integrated and extended version of eight existing popular theories. So, applying this model in this context may give new insights and results.

5.2 Implications for the industry

The researchers have tried to uniquely study the factors affecting ESCA from the perspective of the online buying process through the present study. Thus, the researchers have attempted to explore and organize the customers' behavioral motivators behind each stage of the online buying process. This will help the marketers to develop more pragmatic and specific strategies to satisfy online customers at each stage of online buying process and achieve the goal of target sales.

By studying the buying stages separately, the stage wise pattern of ESCA can be explored to understand the reasons for the abandonment more precisely. The awareness about the behavioral motivators at each stage of online buying process congregated through the comprehensive review of literature gives a better understanding of the factors that are creating challenges for the online marketers.

6. Limitations and Future Scope of the Study

The main limitation of the present study is that it has not considered the impact of demographic variables on ESCA. Furthermore, the factors identified may have a different impact on customers from the different social and cultural backgrounds. There is a need to measure the validity and impact of these factors in context to different countries and compare the reasons for ESCA across the countries and time zones

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SECURITY ISSUES IN BIOMETRIC 3D ANIMATED CAPTCHA

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ABSTRACT

Nowadays the internet has become part and parcel of our life, every internet user is concern about security. Most of the companies and organizations provide online service to their clients. But sometimes it happens that some malicious automated hacking software has attempted to attack websites to make the server super slow. For these types of attacks CAPTCHA (Completely Automated Public Turing Test to tell Computers and Humans Apart) is the solution. The role of this test is to differentiate between man and automated computer program conducted by websites beforefilling the formsor signing up.Rapid Innovation in AI and image recognition, the traditional way of designing CAPTCHA is facing the issue of being cracked. We propose a new CAPTCHA implementation mechanism which covers "Security issues in biometric 3D Animated CAPTCHA". Automated programsshould find the CAPTCHA very difficult to be recognizedwhile it should be easy for human at the same time.

***Keywords**: AI, CAPTCHA, OCR, Artificial Intelligence, Image recognition.*

1. Introduction

The Internet is a very important part of our life, hence internet security also is an important issue for every user. Most of the companies and organizations provide online service to their clients. But sometimes it happens that some malicious automated hacking software has attempted to attack websites to make the server slow. Users are commonly asked while signing up or filling out registration forms to enter personal details like email id, number, address etc., However, automated hacking software fill fake information of fake people and can slow down or even stop the web site. It was always expected that this task is done properly and in an authentic way by a genuine user, that is human.

Program fill out a form automatically with wrong, fake, incorrect information, just to access the web site's resources to create the traffic, resulting into wastage of large amounts of disk space and making the server super slow. Numbers of unwanted fake accounts are created for this purpose. These attacks are mainly carried out by using computer programs; for example, On University web sites at the time of result declaration any computer program generating enrolment number sequentially, can open the result file of each and every student ultimately this activity jams the server and genuine students suffer to see their own results.

Similarly, another example of Railway reservation website, where a hacker with the help of automated hacking software can purchase multiple tatkal tickets and a normal person suffers to get the tickets.

To address these limitations the security systems should run dynamically against them. CAPTCHA is usedfor solutions to such problems, to differentiate user as human and computer. As a safeguard the websites resist such attacks with the help of CAPTCHA.

CAPTCHA stands for Completely Automated Public Turing test to tell Computers and Human Apart. Its use shields the non- human activities on most of the websites. CAPTCHA works in such a way that it provides questions easily solvable by human and answer it; but computer programs/bots cannot. Smart AI and image recognition algorithms can break simple type of text CAPTCHA, but human cannot able to even recognize complicated text CAPTCHA in which lots of distortion is added. We propose a new CAPTCHA implementation mechanism which covers Security issues in biometric 3D Animated CAPTCHA. The new proposed CAPTCHA should be friendly for human users to solve and type but not possible to computer program or automated software to recognize and break.

In this paper, a biometric 3D Animated CAPTCHA system , which captures the face of human through a camera of PC, Laptop or

mobile and asks the user to give the CAPTCHA test by showing 3D rotating characters with the help of animation frames that will be understood by humans and hard to break by computer program. In the second section literature survey is elaborated. Third section is used to proposed system and in the next section algorithm and its flow is explained with its pros. Further the conclusion is made with references.

2. Literature Review

First CAPTCHA was invented in 2000 by Luis von Ahn, Manuel Blum, Nicholas Hopper and John Langford for yahoowebsite to prevent automated mail account registration, in Carnegie Mellon University [8].
CAPTCHA is generally categorized into
1. Static CAPTCHA
2. Dynamic CAPTCHA
3. Intellectual CAPTCHA

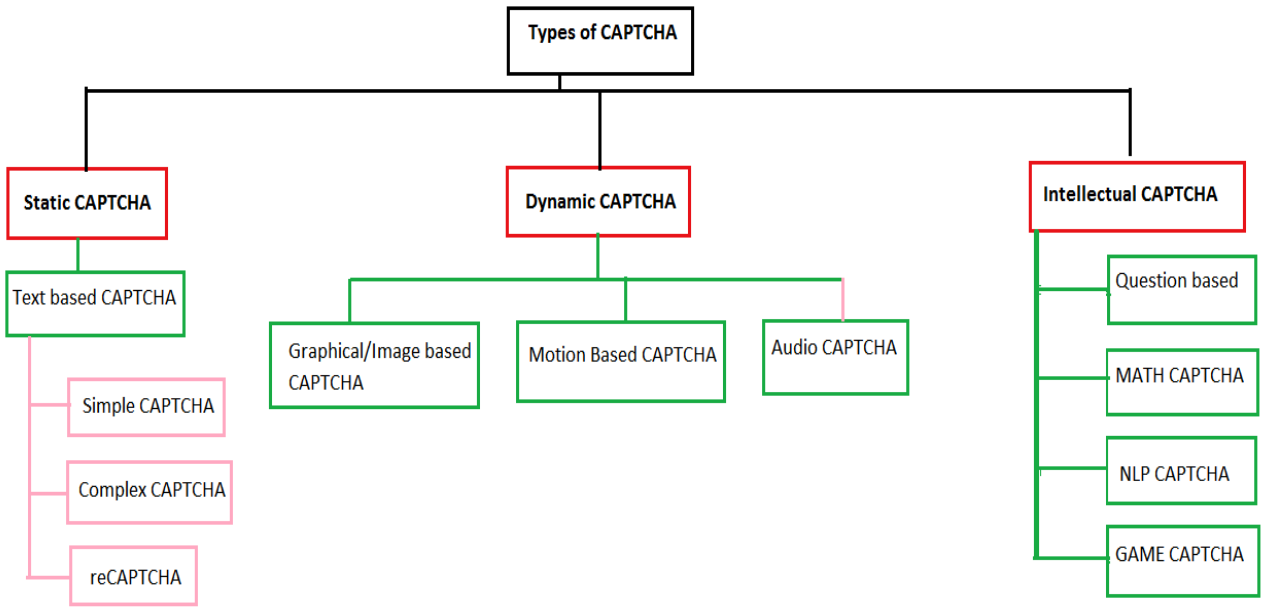


Figure 1: Types of CAPTCHA

2.1 Text based CAPTCHA
In a textbased type of CAPTCHA programmer uses a sequence of text like letters or numbers and add distortion between them before showing them on the site.

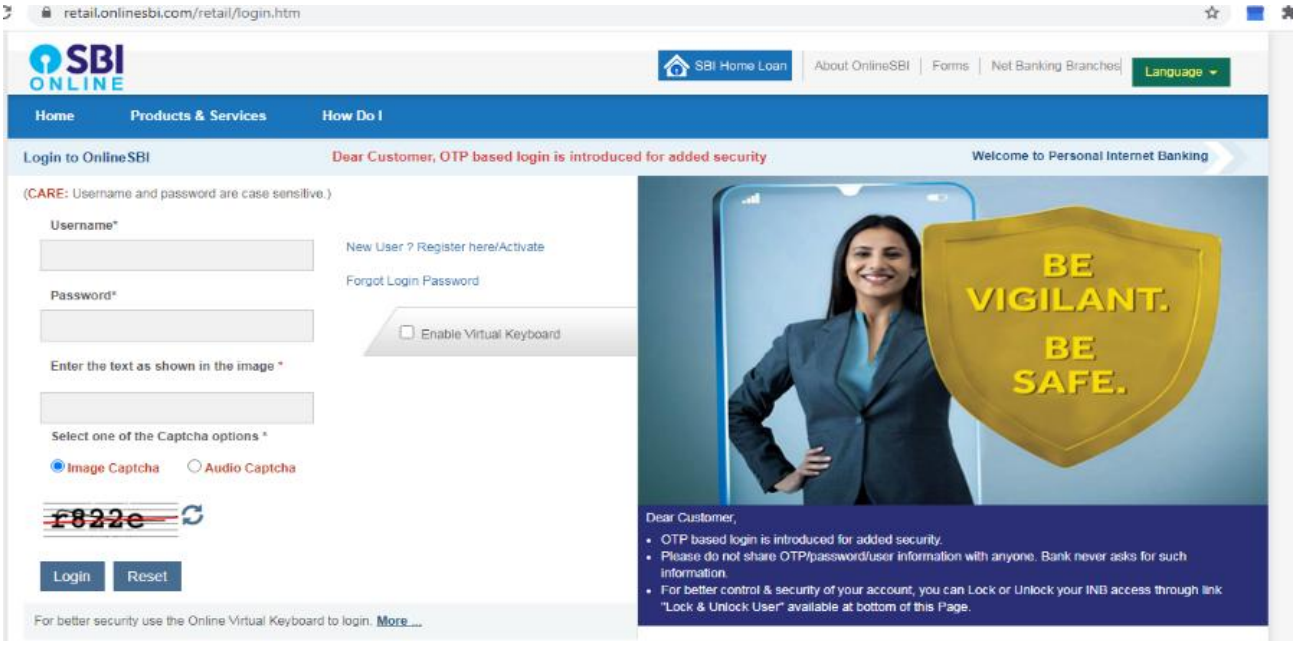


Figure 2: Text based CAPTCHA

2.1.1 Simple OCR based CAPTCHA

This CAPTCHA could not recognize reading texts which is printed with a low quality.



Figure 3: Simple OCR based CAPTCHA

Limitations:
Simple OCR-based CAPTCHA can be cracked by smart AI technology and image recognition algorithms easily.

2.1.2 Complex OCR-based CAPTCHA

To solve the above simple OCR problem programmer, add extra noise into text, in order to make it more complex in front of attackers on website.



Figure 4: Complex OCR-based CAPTCHA

Limitations:
But due to these changes human users face much more difficulty in recognizing the words, sometimes users have to type this complicated CAPTCHA more than 3/4 times which is nothing but wastage of time.

2.2 Image Recognition

Image recognition/Friend Recognition/Human face recognition/Avtar CAPTCHA all we can categorized in Image Recognition CAPTCHA[7] [9][10].

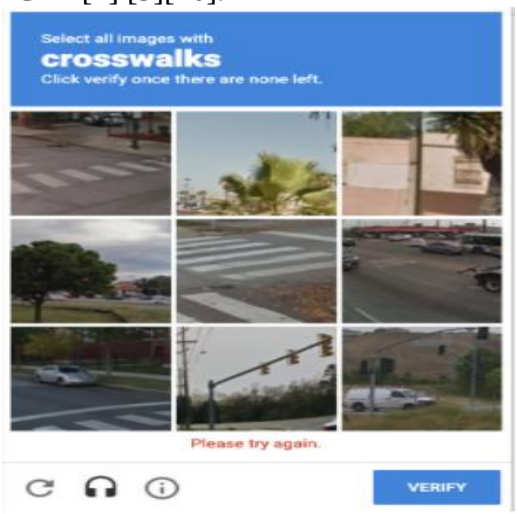


Figure 5: Image Recognition

Limitations:
In such image-basedCAPTCHAs, if the database is small to store images, then there is chance of brute force attack.
These CAPTCHA takes lots of space for storage. Near about 9+ images are stored in the database for one test of CAPTCHA display, which increasing space complexity.
It requires more screen space than a regular text CAPTCHA so it is really irritating to users to always scroll down and scroll up the form.
The person who is vvisually impaired also have no chance to solve image basedCAPTCHA.
Any click event on the form "Submit" button causes the form submission.
FriendRecognition/Human face recognition/Avtar CAPTCHA also having the same type of issues.

2.3 Audio based CAPTCHA

Those who are physically unfit and have some problem with eyesight, they can solve auditable CAPTCHA. Audio-based CAPTCHAs ask users to type CAPTCHA word which was played.



Figure 6: Audio based CAPTCHA

Limitations:
Generally, many audios CAPTCHA are difficult to understand due to distorted pronunciation and background noise.
Characters that have similar sounds confuse the user like good/god or to/two etc.
Sometime unfamiliar English words are hard to understand.

2.4 Puzzle-based CAPTCHA

In finger guessing game, user need to select the gesture which can win. Three basic gestures rules are important in this, and simple game rules of Rock, Paper, Scissors "a rock beats a pair of scissors, scissors beat a sheet of paper, and paper beats a rock" [12].



Figure 7:Puzzle-based CAPTCHA

Limitations:
Require intelligence to solve
The game rule should be known to every user.
Drawback of image CAPTCHA remain same i.e.
Large solving time
Occupy more space on page
More loading time etc.

2.5 reCAPTCHA

reCAPTCHA service offered by google to protect websites from spam and attacks. But it was also broken with the help of IOT devices [16].

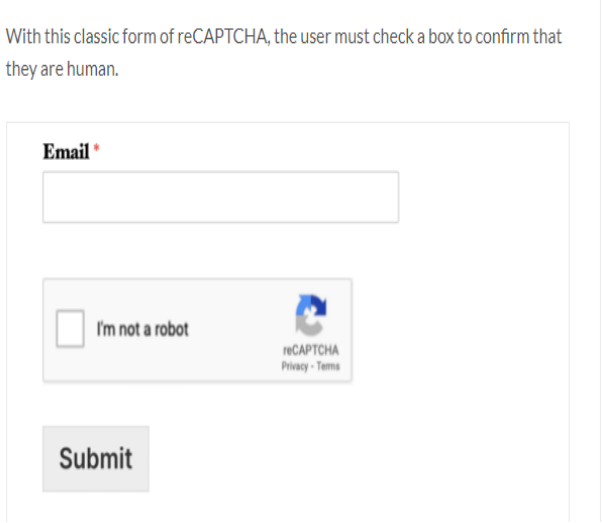




Figure 7:reCAPTCHA and Breaking method

2.6 NLP CAPTCHA

NLP (Natural Language Processing) CAPTCHA is a CAPTCHA based digital advertising platform. The IRCTC Website uses this NLP CAPTCHA which was designed by Simpli5D[2] [17][18].

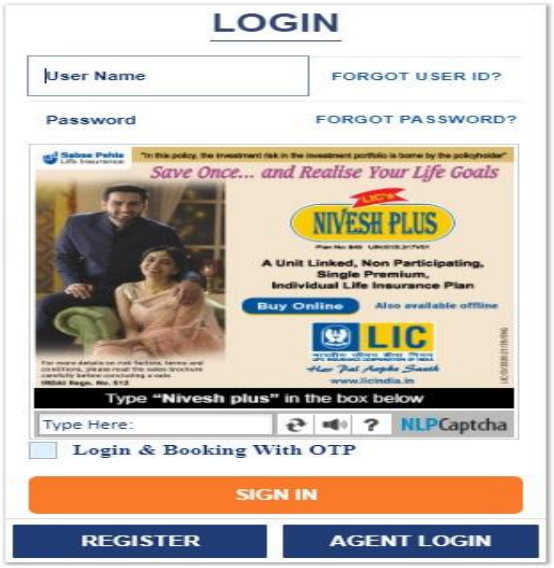


Figure 8: NLP CAPTCHA (Source https://www.irctc.co.in)

Limitations:
Main purpose of testing that we are human that was violated and advertisement related words is having meaning and can be easily breakable with Dictionary and Brute Force attacks.

3. Proposed Work

By the observation of literature survey, we can say that with the rapid development of AI, Robots and image recognition, simple CAPTCHA is facing the problem of being cracked. If we make it more complicated CAPTCHA, then it is even difficult for humans to recognize. Time consuming issues to solve the CAPTCHA is the main constraint.
According to NDTV news, people spend 500 years every day on CAPTCHAs.

By considering all the constraints into consideration the need of new CAPTCHA is generated.

Objective :

There is a need to design a biometric 3D Animated CAPTCHA that captures the human face through a camera and asks the user to give the CAPTCHA test by showing 3D rotating characters which are created through biometric and display with the help of animation frames.

4. B3AC Algorithm Analysis

Proposed CAPTCHA creation is based on following techniques such as:

- Biometric Face Capturing
- Handwritten 3D effect in Symbols
- Animation effects
- Technique of display

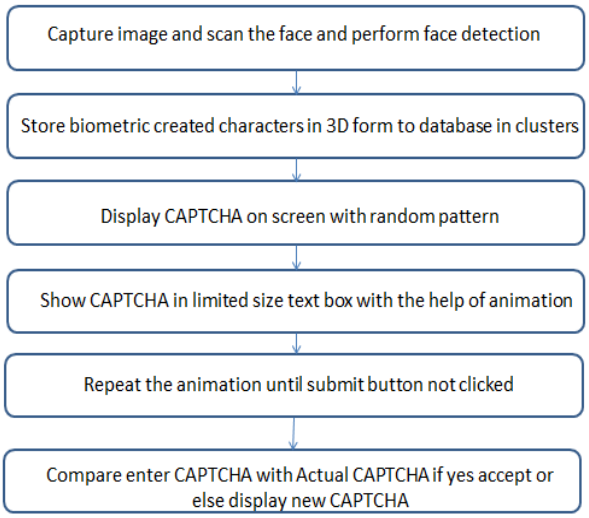


Figure 9: B3AC Algorithm

Step 1:

To check whether the user is human or not, simple step is to check by own eye like traditional method to check door step person. First step is Face Capturing, which is based on Face scanning techniques using Haar CascadeAlgorithm. Face scanning technique is needed to make sure that the capture image is face and that should be the human face [1].

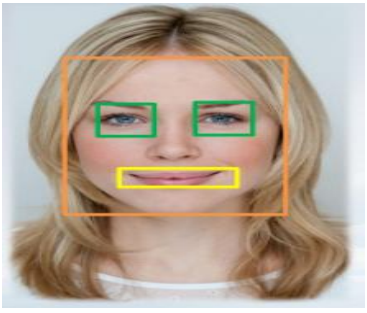


Figure 10: Human Face Detection

Step 2:

In next step we store in our database letters as symbols like A to Z.These symbols are drawn by hand on biometric device like pen tablet with 3D effects considering the depth and stored in database. Storeimage of each letters is having index and name.



Figure 11: Biometric generated character

Step 3:

By random selection method we can generate CAPTCHA on screen. Apply random selection function on database and select only and any 6 letters. If we select low number of CAPTCHA letters there is high possibility of CAPTCHA may crack. And if we select many numbers of letters in CAPTCHA it requires more time which is also not acceptable. Total numbers of symbols for display in animation need to decide at early point with their attributes like size, font, color etc. As a standard practice we have chosen 6 letters for CAPTCHA.

Step 4:

Display CAPTCHA in small text box in animated way. Animated frames are differ to each respect to their size, font, scale, colour, slating effect , effect of multimedia, addition of noise addition, contrastness in colour combination ,background effects, pixel intensity etc. For animation we have selected each symbol as a separate entity. 6 Symbols are not shown on the same frame at same time. They treated as separate entityand which results in low possibility of cracking. Continuous movement is shown in animation from left to right by translating object. For showing animation first character is separated by other with followed by some space.

Step 5:

Continues slow speedmoving CAPTCHA is created with animation effect.Letters/Symbols are shown of CAPTCHA inmoving state in text box but in limited size. At max 4 to 5 letters are visible on form. In rare cases you can see 5/6 letters but in cut format.

Step 6:
In movinganimated CAPTCHA, image not displayed as complete whole image to user in first iteration. Any software/automated program cannot be able to capture the CAPTCHA, even if it captures, the complete image is not shown on screen so result of both will not match.

Step 7:
Once user enter the CAPTCHA in normal text box, we need to compare entered text with CAPTCHA if match found if yes accept the form else refresh the CAPTCHA by showing another CAPTCHA or give error message.
In the new CAPTCHA system, biometric Face Capturing is done to check human face to make sure that the face shape belongs to a genuine human. Handwritten 3D effect Characters of each and every human is not the same as bio terms differ. Thoughautomated software tries to break the CAPTCHA; we have added second hazards, 3D effects in characters which show 3 dimensions: height, width as well as depth. Steal images can be easily captured and cracked by much software but animated images are hard to capture due its speed. Animation is one of the best ways to display CAPTCHA in dynamic means if any software wants to crack it, that software also needs to perform dynamic run time evaluation. Static calculations are not effective in that case.
Some techniques like frame difference method can break animated CAPTCHA to some extent. But the last and most effective method is to display an image box of CAPTCHA in limited size. In the proposed system we have used 6 characters in CAPTCHA but at run time we have shown only 4 letters in the box. This work proposed a new and efficient scheme for generation of CAPTCHA.

5. Conclusion

It is an effective CAPTCHA which capture human face through camera directly and it follows random algorithm to produce CAPTCHA with 3D font stroke. CAPTCHA symbols are shown in moving way and not displayed complete CAPTCHA at a time in single frame of animation. So, with complicated mechanism we can find perfect solution which save the time and efforts of the human to prove themselves.

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TEACHING IELTS TO UG STUDENTS: CHALLENGES AND REMEDIAL MEASURES

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ABSTRACT

Teaching IELTS to undergraduate first year students, those who are from purely vernacular background is a rea challenge we face now a days. We have carried out a survey to map their four skills which are keys to IELTS. Student struggled to fill the questionnaire as they failed to understand meaning of some words. IELTS is a gateway to get a added advantage in the field of job and a pass to go abroad for higher studies and job as well. IELTS has its ow parameters and creates benchmark internationally. So preparing students get a required band score is really challenge for teachers. Learning a language, especially a second language, is influenced by a number of social factors. Learning a second language in a native environment is different from learning it in an alien environment. In th former case it is learnt through a process of natural acquisition involving verbal contact with native speakers in natural environment whereas in the latter case it is taught through instruction in a formal setting. This paper examine the sociolinguistic factors responsible for inadequate communication skills and we endeavored to provide remedial measures to meet the required competency in four skills i.e. reading, writing, speaking and listening. So that Students can get the required band score in IELTS.

***Keywords*:** Language Competency, Sociolinguistic Backgrounds, Remedial Measures, Four Skills i.e. Reading, Writing , Speaking and Listening

Introduction

IELTS is introduced as a core course in our university with the objective that all students have to develop their skills in both receptive and productive. Students will be highly benefited by pursuing these courses as they would get an added advantage while aspiring for a job. Teachers delivered the course with lots of online resources available conducting lots of online practice tests but the result is not satisfactory. So we have surveyed by providing a questionnaire. To know what are difficulties students face while pursuing IELTS. Before conducting the survey we gather lots of information by interacting with students. It is found that there they have very little or no exposure to communicative English. They just scare when someone speaks in English. As most of the students we deal with are from rural areas from Odisha, Andhra Pradesh, and Bihar. So it is necessary to go through the social factors and the environment they live in.

International English Testing System, known as IELTS allows non-native speakers to test their English Proficiency. This course helps the students to fine-tune and standardize their English those who aspire to go abroad either for higher study or doing job. This course focuses on all four required skills such as Listening, Reading, Writing, and Speaking. IELTS as a course introduced in many universities to develop the skills of students, in addition to that students will get the certificate which helps them to go for higher studies and acquire a job in English speaking countries.

At our University, we too have introduced the course intending to hone their skills in four categories. Students are not familiar with these kinds of courses as it's a new kind . As students are accustomed to the conventional mode of teaching where a teacher speaks and they just listen. But in IELTS the teacher plays the role of facilitator, who shares important links for practices and shows some related videos.

Challenges

IELTS as a course is acceptable for students who are from English medium or grammatically sound or those who have flair to learn. but the real challenge for teachers is the students who never got even little exposure to English. Especially Students from Bihar, and Andhra Pradesh those who had their schooling in their regional language. Students had never studied Grammar or they have very poor knowledge of Grammar. They never got an opportunity to speak neither write something of their own. It is very hard to teach something

related to IELTS. They even can't read the instruction that is written before the test.

Social factors and their influence on second language learning:

There are various social factors which influence learners' proficiency in a second language. These could be personal factors and factors which are related to learners' home, school and job environments.

Personal factors

Attitudes towards learning English can be influenced in different ways depending upon various factors such as environment at home and educational institutions. For instance, if parents are educated and are in professions wherein the use of English is important, they may provide an encouraging atmosphere for their children to learn English. They may educate their children in English medium schools, use English with their children, etc. These factors are likely to encourage children to learn English as well. On the other hand , if parents are illiterate and are in occupations which do not demand the use of English or do not reflect the importance of English, their children are less likely to be encouraged to learn English.

Learner attitudes affect the level of L2 proficiency achieved by individual learners and are motivated by this success. Learners with positive attitudes, who experience success, will have these attitudes reinforced. Similarly, learners' negative attitudes may build up by a lack of success. Sometimes, the learners begin with a positive attitude and for some reason, they experience inadequate learning, which fails them to progress as they expected, and consequently, become more negative in their outlook.

Motivation can be instrumental in learning a second language. It is generally assumed that learners who have pressing need to learn English may have high motivation to learn it. That is, motivation is directly related to the purpose for which the language is learnt. Motivation may also depend upon learner's age, inclination and availability of time. In general, the younger the learner, the more motivated he is, though this may not necessarily be so. Time also plays a role in learner's motivation. Though there is a need to learn English, if the learner does not have enough time to focus on learning, he may not be motivated enough to do so. Similarly, the learner may have the motivation to learn a language for personal interest though he may not require using the second language for communicative purposes.

Home Environment:

One's home environment also plays a key role in one's competence in the use of English. One's mother tongue, social class and influence of parents on children are all related to the home environment. For instance, one's mother tongue may have an impact on one's learning a second language. This is more likely if the learner begins to learn a second language during his adulthood. That is , an adult whose proficiency in a second language is inadequate and wishes to improve it , may also find it difficult to learn the second language because of the influence of his mother tongue.

Another factor which is closely related to the home environment is social class. As Ellis, R (1994:204-6) argues, an individual's social class is typically determined by means of a composite measure that takes account of income, level of education and occupation. There is evidence of a relationship between social class and L2 achievement. The general finding in second language research is that children from lower socio-economic groups are less successful educationally than those from higher groups.

In the home environment, parents' role in their children's learning a second language cannot be ignored. Parents' attitudes towards the second language, their education, etc. may encourage or discourage their children's learning the second language. It is very likely in India that children whose parents are graduates and above, receive more encouragement to learn English. Usually, literacy of parents and their occupation, social and financial status are closely interrelated. These help educated parents provide a more conducive atmosphere for their children to learn English at home. These factors also help parents educate their children in the best school possible.

School Environment

School environment is one of the significant social factors which plays a vital role in one's proficiency in the use of English. For instance, medium of instruction at school and college levels may affect the ability of one's use of language. Students who study in regional medium schools and colleges are deprived of the rich language exposure in terms of listening, speaking, reading and writing in English. Later, they may find it difficult to use English fluently at their work place. Even if they gain some proficiency in the use of English grammar, they may need a couple of years of exposure to English to appreciate the communicative functions and discourse features of the language.

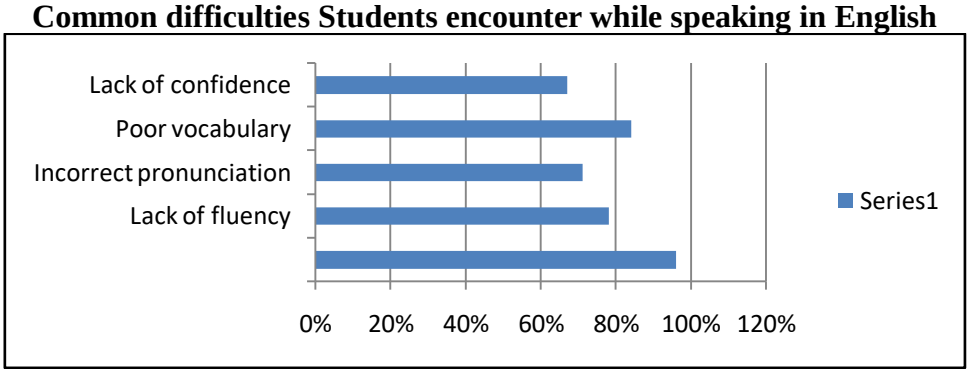
One cannot claim with certainty that one can gain competence in the use of English just because one happens to have had one's education in the medium of English. The learner is more likely to gain proficiency in English, if there exists an environment of English in the educational institution in which the learner pursues his studies. That is, he can learn to use English well, if his teachers, classmates and school mates also use English. But , in India, such an environment of English usually prevails only in certain privileged schools and colleges which are owned and run by private individuals. On the other hand, in most of the government schools and colleges, though the medium of English is available, the use of English seems to hardly prevail in these educational institutions. Even the students studying in English medium in this government educational institutions usually communicate in their mother tongue or the regional language. Therefore, it is not just the medium of education but also the type of educational institution- a privileged private institution or a government institution- which influences one's proficiency in English.

Often, it is also observed that even in an English medium environment in a private educational organization, especially in a non-urban area, there may not exist an environment of English in the educational setting. That is, the location of educational institution also plays a vital role in learners' proficiency in the use of English. For, most of the educational institutions, both managed by private as well as government bodies, which are located in the non-urban settings usually lack an environment of English. People in such areas communicate in their mother tongue or the regional language. The regional language is the only language which is commonly used at schools and colleges, in the offices and at all the important public places such as shopping centers and railway offices. Therefore, the learner has hardly any exposure to English either at the educational institution or outside it. Such a learner is less likely to gain the expected competency in English at the time of completion of his education at these schools and colleges. Later, as a result, he may find it difficult to communicate in English on his job. Especially so, if he has to function as a business executive in an urban environment.

Speaking: Common difficulties

Some of the common difficulties participants encounter while speaking in English, as the following table indicates, are speaking grammatically correct sentences, using appropriate vocabulary, speaking fluently, speaking with correct pronunciation and speaking with confidence.

Common difficulties Students encounter while speaking in English

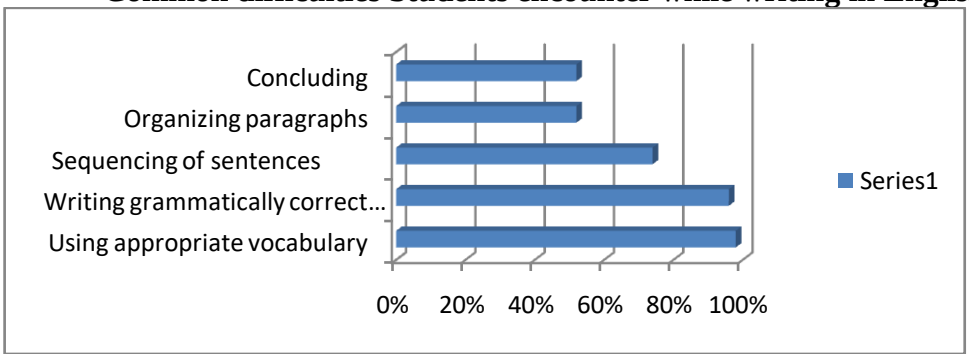


A majority of participants (students) who had difficulty in speaking in English said that inadequate knowledge of grammar was the major reason for their difficulty. Similarly, among the 40 students who had difficulty in speaking, 84% of them (i.e. 34 students) found it difficult to speak in English because of inadequate vocabulary.

Writing: common difficulties

A student who is appearing for IELTS is expected to possess good writing skills in English. However, the data indicates that out of the forty students provided data in questionnaire, 38% (23 students) found it difficult to communicate in writing properly. Surprisingly, all these 23 students who had difficulty in writing said that using appropriate vocabulary was their main problem. Of these 96% (i.e. 38 out of 40 Students) indicated that writing grammatically correct sentences was their main difficulty .Similarly, 74% (i.e. 30 out of 40) mentioned sequencing of sentences and 52% (i.e. 21 out of 40) mentioned organizing paragraphs and using appropriate sentences to close a letter as their difficulties in writing in English. The following table sums up these details:

Common difficulties Students encounter while writing in English



Reading: Common difficulties

From the data it is evident (see table 1 in sec.4.1 above) that 88% of Students (i.e. 35 students) considered reading skills as important to them on their job. Some of them mentioned that they often browsed the internet for information related to their online resources. Most of them also mentioned that they read technical or professional journals, magazines, books business newspapers, the usual business correspondence such as letters, and e-mail.

However, Their responses to certain questions in the questionnaire were neither appropriate nor relevant. That is, They were not able to grasp the content of the questions properly which reveals their inadequate reading skills

Listening: Common difficulties

Almost 92% of students (i.e. 37 students) felt that the listening skills were important to them, students have to listen to and grasp quickly what their teachers teach , seniors, classmates and friends , etc. say to them. They listen to lectures in formal seminars and meetings (occasionally conducted to announce important information) as well. They also have to listen to railway announcements, flight announcements, etc. apart from listening to the radio and television.

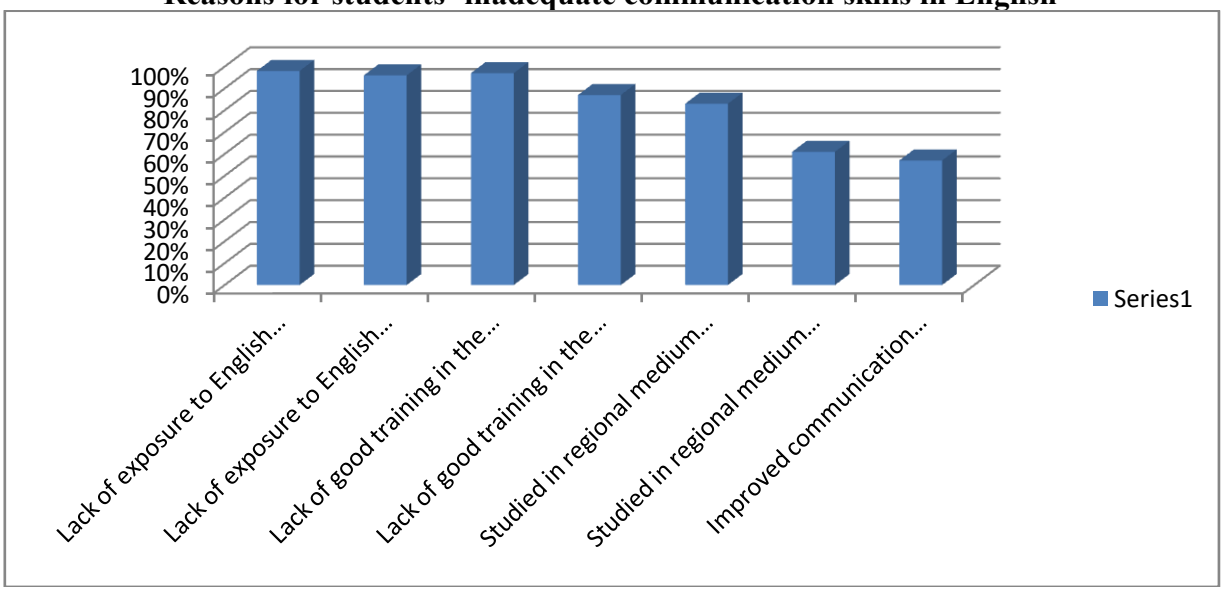
The data indicated that some of the common difficulties students faced in listening comprehension were that they were not able to understand quickly the speaker's pronunciations, sentence structure and communicative value of the utterance. Inadequate vocabulary was also one of the reasons for the students in listening comprehension.

Some of the interviewees also felt that the difficulty to listen and comprehend quickly increases as the speakers usually vary in the way they speak because of the differences in their mother tongue, educational background, geographical background, personality trans , etc. As the common difficulties in speaking, writing reading and listening comprehension have been discussed above, it is also necessary to know the reasons for such difficulties.

Reasons for students' inadequate communication skills in English

The following table indicates that the major reason the students 'inadequate communication skill was their regional medium background. They felt they had hardly had any exposure to English during their school and college education .The use of English was usually by teachers of English rather than by students. They said that, as students, they commonly used their mother tongue or the regional language while talking to their peers and their teachers in school and intermediate level.

Reasons for students' inadequate communication skills in English



Some of those who studied in English medium too expressed similar reasons. They mention that they too had little exposure to the use of English outside their classroom.

Many of them also felt that they did not perceive the need to learn or improve their English during their school and college level. So, they could not be fluent in the use of English later. They mentioned that they became aware of the importance of English after they joined a professional course

Thus, it can be inferred from the above table that the main reason for the students' inadequate communication skills in English was their sociolinguistic backgrounds such as their school and home backgrounds. Therefore, it becomes necessary to understand the relation between language proficiency and the social backgrounds of students.

Conclusion

IELTS is meant for standardizing English. Students should have basic knowledge about English i.e. Grammar and vocabulary before attending IELTS class. Teachers facilitate and provide different online resources and give ample opportunities to fine tune the language of students . They conduct lots of practice test online and offline. It is herculean task for students those who are struggling to understand the instructions and never got scope to speak English, for them it is difficult to get a required band score in IELTS.

It is recommended to introduce a course for first year students to undergo a course which will help them to understand basics in English. The course should be designed in such a way that all skills viz a viz Listening, Speaking , Reading and Writing would get equal importance . Students should get enough time and opportunity to hone the four required skills. It should be more of practice rather than theory class. So the course " Basic Communication skills" can be introduced for the first year students before opting for IELTS. In other words the Basic Communication Skills should be the prerequisite for IELTS. Students must get minimum understanding of communication , which would definitely help them to understand the IELTS course. The Course "Basic Communication Skills" should have following contents:

Functional Grammar,7 Cs of Communication, Vocabulary, Reading Comprehensions, One word substitutions, Letter Writing, Short Presentations, Listening Skills, Useful Expressions.

Hopefully this course may help students to acquire a certain standard which will make them easy to opt IELTS course in the next level.

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IMPACT OF HUMAN FACTORS ON DECLINING FISH DIVERSITY – A CASE STUDY OF KOLKATA AND ADJACENT TOWNS OF NORTH AND SOUTH 24 PARGANAS DISTRICTS OF WEST BENGAL

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ABSTRACT

The food fishes sold in and around Kolkata Municipal area are supplied mainly from wetlands of North and South 24 Parganas districts of West Bengal. The study reveals that the fish farmers grow selective fish species under commercial aquaculture and indigenous fishes are slowly going to disappear from wetlands. Now it is very apparent that a fixed variety of fishes are available in the markets throughout the year with no significant seasonal variation. Now the consumers have limited choice for buying fish species available in market. Moreover, a large portion of urban people now prefer poultry meat, sea fishes and egg over fishes due to fast urban lifestyle. This change in consumer behaviour is considered as a determining human factor responsible for the declining demand for local small fishes. In order to get rid of fluctuating demand for food fishes, the farmers have introduced some invasive species of ornamental as well as consumer fishes in aquaculture ponds. The invasive species are largely predator to small fishes and gradually phasing out indigenous fishes from the wetlands. The profit making commercial aquaculture has aggravated the problem of diminishing fish diversity in wetlands of India.

***Keywords**: biodiversity, overfishing, urbanisation, aquaculture, exotic species, East Kolkata Wetlands (EKW)*

Introduction

The loss of biodiversity is one of the major environmental threats in the present world. Natural ecosystems are the storehouses of wide varieties of flora and fauna. Among the natural ecosystems the aquatic ecosystems are considered to provide shelter for highest degree of species diversity. But different human interferences such as water pollution, mass tourism, overfishing, commercial fishing and urbanisation adversely affect the richness of species present in various surface water bodies like ocean, river, lake, pond, estuary etc. If we concentrate into fresh water ecosystems then the human factors like selective aquaculture based on purely commercial gain as well as market demand and urbanisation mostly affect the fish diversity in India. A study conducted by International Union for Conservation of Nature (IUCN) that freshwater fishes may now be the most threatened group of vertebrates, based on more than 5,000 species assessed (Reid *et al*., 2013). The varieties of fresh water fishes accounts for over half of all the world's fish species and are essential for the health of the world's rivers, lakes and wetlands and also for well-being of societies and economies across the globe. Yet, freshwater fishes are under ever increasing pressure with one in three threatened with extinction, according to the new report published by 16 global conservation organizations including IUCN.

Major threats to freshwater fishes and other freshwater biodiversity, include: habitat modification, fragmentation, and destruction; introduction of invasive species in local water bodies; overfishing; environmental pollution; forestry practise; and climate change. Often species, or biodiversity, declines in response to more than one category of threat, and the real "threat" is the combined or synergistic impact of changes brought about by human activities.

Fish is one of the abundantly found aquatic species and plays very important role for the smooth functioning of the aquatic ecosystem. The fish diversity in rivers has already been severely affected by the discharge of municipal and industrial effluent and construction of dams in India. Now a day most of the large ponds and estuaries are used for commercial aquaculture and this sector supplies fishes to the local markets for human consumption across the country. Therefore these natural water bodies are manipulated by fish-farmers for commercial aquaculture and they grow only those fish species which have large market demand. The commercial fishing practice in India has been able to increase the production of Indian major carps and certain exotic carps

only. Moreover the encroaching of large wetland as well as local ponds in suburban area for real estate business has aggravated the problem. In this way the market demand controls the selection of fish species grown in local fish ponds and gradually fish diversity in local water bodies starts declining. Over the years the life style and food habit of urban people in India have also been significantly changed to keep pace with competitive and fast life. People now prefer to consume comparatively big sized selective fishes which are easily processed, cooked and of course eaten by all age groups. As a result the local fish species are not frequently available in fish markets due to lack of commercial breeding and production in fish ponds which is further caused by change in fish consumption pattern and rate by humans. Moreover fishermen now grow hybrid species of some of the local fishes to achieve more production as well as to earn more profit. The majority of the hybrid fish species are predators to small fishes and this hybrid aquaculture phases out all other local species from the ponds. This man created factor also contributes to the declining availability of fish varieties in local water bodies. With the changes in socio-economic structure in India over the last thirty years, a large number of people have shifted their choice from fishes to chicken due to modern lifestyle and it is the main reason of flourishing poultry farming for the last few decades. So the human food habit may be said to have direct influence on the selection of fish species grown under commercial aquaculture. This demand oriented fish farming is slowly leading to loss of fish diversity in local water bodies in and around urban areas of all the states in India.

Apart from the potential natural source of animal protein, fish is a good source of micronutrients (vitamins and minerals) which are required in small amounts but are essential for health, development, and growth particularly for children. Micronutrient deficiencies are the leading causes of many ailments including mental retardation, preventable blindness and death during child birth around the globe. Fish is an important dietary source of macrominerals (Na, K, Ca, Mg, P), microminerals (Fe, Cu, Zn, Mn, Se) and fat soluble vitamins (Vitamins A, D, E, K). The nutrient composition of fish varies with species, their habitat, feeding behaviour and other factors. In general, the shellfishes and marine fishes are rich in macrominerals like sodium and potassium. The Small Indigenous Fishes (SIFs) are recommended for microminerals (Ca, Fe, Mn,), fat soluble vitamins (Vitamins A, E, D, K) and brackish water fishes for Phosphorus. The abundantly available fish species can fulfil the complete requirement for essential nutrients and minerals for human being. Therefore, consumers should have a wide choice for fishes as there are many varieties and species available in tropical countries like India. But the selective aquaculture has restricted the availability of fish species in market and that may have an impact on human health. The human factors like food habit and market driven selective aquaculture have restricted consumer's choice within few species of fishes. The sustainable food habit as well as aquaculture should be practiced to protect and maintain the fish diversity in fresh water bodies such as river and wetlands. The freshwater aquaculture system in India should adopt diversification to include local medium and minor carps which will help in restoring fish biodiversity.

Literature Review

Dhara, Madhu, Mukherjee and Roy Karmakar (2016) conducted a field study on the production exotic fish species in North 24-parganas and it showed that 14 exotic fish species are commercially grown in the North 24-parganas district of West Bengal. They mentioned that in West Bengal the cultivation of exotic fish species started since 1970 and still continuing. The study pointed out that the indiscriminate culture of exotic fish species in India had brought wide variety of problems including phase out of indigenous fish species from local water bodies ultimately resulting in loss of biodiversity. The study held responsible the gap between demand and supply of food fishes leading to constant pressure on fish farmers in this district to expand the cultivation of exotic fishes. The survey revealed that selected wetlands of this district are used for culture of exotic fish species. The study has shown that out of 14 species 6 are legally introduced fishes (Silver carp, Glass carp,

Common carp, Gaint Gouramy and Java Punti) whereas 8 others are unauthorised invaded species (e.g. Big head carp, Black carp, Mud carp, African Magur etc.). The researchers are in opinion that large scale cultivation of exotic fishes may result in loss of fish diversity in near future.

Biswas and Panigrahi (2014) conducted survey on the diversity of exotic food species and their ecological importance in Jhenida district of Bangladesh. They viewed aquaculture as a profitable business for fish farmers not only in Bangladesh but also in the whole world. They also mentioned the population growth as one of the major factors to introduce exotic fishes in aquaculture. The survey revealed that almost all the exotic species in the survey area are voracious eater and feed upon local fish species. As a result introduction of exotic fishes in local ponds and lakes may adversely affect the fish diversity. The researchers have suggested species specific plan for successful management of aquaculture which will take care of fish diversity along with adequate supply of fishes.

Hussan (2016) categorically mentioned the introduction of exotic fishes in east Kolkata wetlands as a part of aquaculture for commercial gain as one of the major threats to the declining indigenous fish diversity in EKW. The study revealed that out of 45 identified fish species only 11 are cultured on regular basis and 7 new species were introduced for culture. Moreover, 3 species of exotic crocodile fishes were accidentally introduced and some local species like Nandus nandus (Meni) and Xenontedon cancila (Kakila) are now extinct. It has been identified in the study that as many as 6 exotic species are being commonly cultured due to which many small lo0cal fishes have become about to extinct.

Acutis, Biolatti, Blondeel, Bracken, Cusa, Devriese, Falcao, Graces-Pastor, Gubili, Jesus, Mariani and Minoudi (2021) categorically mentioned in their study that the modern life style is responsible for detaching consumers from identifying the fish species as well as their sources in European Union. The consumers are mainly guided by the broad categories of fishes available in market and also the market trend. The researchers held the fishery industry responsible for masking the seasonal variations of species harvest, production and trade and also offering a constant and steady commodity to the consumers.

Kiran, Vasantha and Vijaylakshmi (2015) pointed out that the life styles of people have undergone drastic changes which have brought about major impact on dietary pattern of people. They also highlighted that life style changes and taste buds backed by the urban culture have a strong impact on the consumption pattern. The study revealed that the dietary patterns have shifted from traditional and staple food to modern diet. It was also stated that the traditional foods like rice, pulses, fishes are being abandoned by people and the intake of meat products has been suddenly increased. The study also mentioned that after the entry of foreign food processing companies in India, people have become more inclined towards processed food instead of home-made traditional food.

Objectives

1. Identification of fish species which are now readily available in the local markets of the study area
2. To study the urban lifestyle that influences consumer behaviour for purchasing fish
3. To examine the consumer's preferences for fishes over other animal proteins like meat, eggs etc.
4. To investigate the present freshwater aquaculture system from which fishes are supplied to Kolkata and adjacent area
5. To study the supply and availability of indigenous fish species as well as the seasonal variation of fish species in wholesale and local markets in the study area

Materials and Methods

The survey and 'one – to – one interview' methods were adopted to conduct the study. The randomly selected local fish markets in Kolkata Municipal Corporation (KMC) and North and South 24 Parganas districts were surveyed for examining fish variety and also different human factors affecting fish diversity. In the present study 'Human Factor' refers to the man induced activities that may affect

natural fish farming in wetlands and fish diversity. The human factors considered in this study were 'human induced intentional commercial aquaculture', 'consumption of fixed variety of fishes' and 'preference of poultry meat over fishes' etc. The selected wetlands in East Kolkata Wetland area and North 24 Parganas district were surveyed to study the commercial aquaculture system. The survey was conducted two years back for two months of August and September. The details of the methodology used for this study are given below.

1. Detail survey was conducted in local fish markets of the study area. The Maniktala Fish Market, one of the largest retail fish markets in KMC area was studied to identify fish diversity. The other fish markets were selected from Jadavpur, Gariahat, Beliaghata, Salt lake, Bidhannagar, Barasat, Sodepur area of North and South 24 Parganas districts.
2. The fish sellers and consumers in the selected fish markets under study area were interviewed to collect information about availability of different fishes and consumer behaviour. The two separate standard questionnaire were used for the purpose of interview.
3. The two main wholesale fish markets in Kolkata and East Kolkata Wetland (EKW) area, namely, Patipukur Fish Market and Bantala Wholesale Market were surveyed to understand the fish species variety and also the fish supply mechanism.
4. The aquaculture ponds in EKW area were visited to acquire practical experience on fish propagation techniques and fish farmers had been consulted to collect information on the present commercial aquaculture system.

Result and discussion

1. The abundantly available fishes throughout the year in the local markets of the study area are listed below.

Local name	Scientific name
RAHU	*Labeo rohita*
KATLA	*Catla catla*
MRIGAL	*Cirrhinus cirrhosus*
BATA	*Labeo bata*
BHETKI	*Lates calcarifer*
PARSE	*Rhinomugil corsula*
TANGRA	*Mystus tengra*
PABDA	*Ompok pabda*
GURJAOLI	*Eleutheronema tetradactylum*
POMFRET	*Brama brama*
CHINGRI	*Dendrobranchiata*
CHARA PONA (small baby rohu/katla/mrigal)	-
AAR	*Sperata aor*

Table 1: List of available fishes in local markets of the study area

The above 12 fixed fish species along with 'Chingri' are available in the markets with little seasonal varieties. In monsoon season 'Hilsa' or 'Ilish'(*Tenualosa ilisha)*, a very popular and tasty fish are harvested and supplied to the local markets. But the supply is declining day by day due to unavailability in marine water and also river. The retail fish sellers brought fishes from the two main Wholesale Fish Markets at BANTALA and PATIPUKUR in EKW and KMC area respectively. The fish sellers of North and South 24 Parganas districts also purchase fishes directly from aquaculture pond owners at EKW area. Therefore it may be concluded that the consumers are offered with fixed species of fishes with almost no seasonal variation and food habits of common people has been changed accordingly.

2. The survey of the fish markets has shown the fish species rarely available in market are listed below:

Local name	Scientific name
PUNTI	*Puntius sophore*
MOURALA	*Amblypharyngodon mola*
CHANDA	*Chanda nama*
CHELA	*Chela cachius*
FALSE	*Lactarius lactarius Konkani*
SHOL	*Solea solea*
NADOS	*Nandus nandus*
KACHKI	*Corica soborna*
LOCAL MAGUR	*Clarias batrachus*
LOCAL SINGI	*Heteropneustes fossilis*
LOCAL TILAPIA	*Oreochromis niloticus*
KALBOS	*Labeo calbasu*
KOI	*Anabas cobojius*
BELE	*Gobius giuris*
BACHA	*Pangasius bocourti*

Table 2: List of rarely seen fishes in local markets of the study area

The rare supply of local fish species in markets of the study area categorically indicates the declining culture of indigenous species in the aquaculture ponds and it may result in loss of fish diversity in near future.

3. The survey of the aquaculture ponds reveals that farmers grow and supply only commercially profitable fish species. They have eliminated small indigenous species from the culture ponds and introduced ornamental fishes having large market demand. Moreover, the ornamental fishes are largely exotic species which feed on small fishes. Therefore the human factor namely, market driven aquaculture to achieve more profit is responsible for diminishing local species under modern aquaculture in wetlands of West Bengal.
4. A very significant outcome of the survey based on interview with consumers is the growing preference towards poultry meat over fishes due to fast lifestyle. During the market survey this result is further supported by the growing sale of chickens in local markets of Kolkata and other adjacent towns in the study area. Therefore it may be concluded that human factor plays significant role to control demand and supply of fishes which further influences the fish diversity in wetlands.

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EXPLORING THE EFFECTIVENESS OF RURAL EMPLOYMENT BY MGNREGA SCHEME IN ASSAM: WITH SPECIAL REFERENCE TO JOYPURANCHALICGAON PANCHAYAT

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ABSTRACT

The NREGA Act was passed by the Parliament in the year 2005. The main purpose of this Act was to provide Employment opportunity to the rural unemployed persons.From 2010, January the NREGA Act has become MGNREGA Act which includes another word Mahatma Gandhi and has become "MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE ACT" and under this MGNREGA Act all the functions are same as was in the NREGA Act. This paper focuses on the MGNREGA scheme under JoypurAnchalicGoanPanchayat with special reference to the rural area of Joypur, Namrup, Nigam and TipamGaon, which helped to find out the rural employment's growth within the area of these four Gaons. Under this study main suggestions are that the beneficence should be made aware of the extent of subsidy be availed in the NREGA scheme and the beneficiaries have to make use of every opportunity provided by the Officers as well as under MGNREGA scheme.

Keywords: *MGNREGA, Panchayat, Rural employment, Linear equation, Bar chart*

Introduction

The NREGA Act was passed in the year 2005 at Parliament. The main aim was this Act is to provide wage employment opportunity to the rural unemployed persons. There is a provision under this Act that every rural person can get job but he or she must be registering their names in the concerned gaonpanchayat with the help of an application form.

According to NREGA scheme it's to provide 100 days of guaranteed wage employment in a financial year (FY) to every rural householdwhose adult members volunteer to do unskilled manual work and when a person applies for job card then the concerned gaonpanchayat will have to provide job card within 15 days from the date of application.

Under this scheme there are eight permissible categories of works, which are to be performed by the beneficiaries:

- Rural connectivity.
- Water conservation
- Flood control.
- Irrigation of canals.
- Fishery.
- Water Harvesting.
- Excavation of Bandh.
- Land development

From 2010, January the NREGA Act has become MGNREGA Act which includes another word Mahatma Gandhi and has become "MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE ACT" and under this MGNREGA Act all the functions are same as was in the NREGA Act.

Though NREGA scheme was initiated by the Central Government in the year 2005, but from 2010,underallthe important steps are as first taken by the "District Rural Development Agency" (DRDA) and then they are assigned it to the Block Development Office. In the final stage, the Block Development Officer rural and urban people can be able to get job or become employed. The beneficiaries get job card for work and this works are providing them from the concerned gaonpanchayat.

Important Of Study

Increasing of rural unemployment and developing growth of rural employment is very important coordination in any areas of economic field. From this point of view in Assam find out the development of rural employment in Assam is very miserable than the other state like Maharashtra, Kerala, Haryana etc. So, the magnitude of the problems of rural employment usually increases with the tempo of all type of small wages types of activities in Assam. The important of rural employment in this context can hardly be over emphasized. The condition under which employee works have got marked influences

on their awareness, efficiency, psychology and the quality of work they do.

Realising the important of development of rural employments andalthough many studies havebeen conducted individually either on working effectiveness or working implementation. But this research is an effort and to understand the problem between therural employment in Assam and effective management those particular areas by MGNREGA scheme. The findings of the study will be useful for identifying the problem and crating better assistant to the employees.The researchershave been undertaken this study on "Exploring the effectiveness of rural employment by MGNREGA scheme in Assam (With special reference to JoypurAnchalicGaonPanchayat)".

Main Objectives Of Mgnrega Scheme:

To provide employment opportunity to the rural wages people.Nowadays under this scheme various new officers are also appointed for proving guidance to the beneficiaries and for keeping all the necessary records of the work.

Those officers are:

1) Assistant Accountants.
2) Gram RozgarSahayak.
3) Junior Engineers etc.
4) Block Development Officer
5) Veterinary Field Officer
6) CRP SHG Member
7) Social Worker

Job Card:

Job card is only for rural and urban people who are unemployed. With the help of Job card, the unemployed persons are able to get job. Job card include the State Code, District Code, Block Code, Village Code and House Code and along with this the Job Card also contains the name of the beneficiary and address along with photo. And as Job Card is a source through which the unemployed persons can get the job so, under job card per household can get worth Rs. 100 for per day work.

Research Hypothesis

The hypothesis of the study is that rural people are benefitting from the Exploring the effectiveness of MGNREGA scheme in JoypurAnchalicgaonpanchayat.

Research Objectives

Based on the above hypothesis the following are the objectives of the study:

- To determine the staffing position, registration of employees, age, demand for work andemployment opportunities for work which offered by MGNERGA scheme
- To examine the job card which offered for employees and their major problem for master roll and wage list.
- To study how far the beneficiaries are benefited fromMGNERGA scheme.
- To suggest measure on the basis of the findings of the study for the development of rural employment in Assam.

Research Methodology

For the purpose of the present study namely Dibrugarh district have been selected out of 7 blocks in this district Joypur block taking which consist by 14 gaonpanchayat. Out of 14 gaonpanchayat, the study has been considered 25% of gaonpanchayat i.e., 4 goanpanchayat namely Joypur, Namrup. Nagam and Tipam. These four gaonpanchayat have been considered because due to these gaon are richest goan particularly point of view of agriculture and industries (e.g. -oil, coal,tea, plywood and so on). Moreover, there has been no such study in respect of rural employment.The study is based on primary as well as secondary data.

Primary Data

Primary data has been collected with the help of personal interview. A questionnaire has been framed specially for this purpose which required for analysing objectives.The questionnaireby taking the aid of questionnaire for officers as well as for beneficiaries.

The total number of households 8003, but study considered 25% i.e., 2178. Out of these only 545 samples are considered. The numbers of officers of four gaonpanchayat and beneficiaries' data basically based on random sampling. Then on the basis of pilot study the

data and information have been tabulated and inferences drawn with the help of some statistical tools like Chi square test, R square test with linear equation, and devices like Pie Chart, Bar Diagram etc. Finally determine the degree of association was ascertained.

Secondary Data

Secondary data has been collected from different sources like:

- Handbook on Implementation of MGNREGS.
- Book on National Rural Employment Guaranty Act 2005 (Salient Features).

The study of the project focuses on the MGNREGA scheme under Joypurblockwith special reference to the rural area of Joypur, Namrup, Nigam and Tipamgaonpanchayat.

Limitation Of The Study

Respondents' knowledge:
As most of the respondents are illiterate so their knowledge was restrained on knowledge of scheme and they were unaware to a great extent.

Limited Area:
The study was confined o the rural area of Joypur Anchalic Panchayat only and four gaonpanchayat have been considered. Therefore, the study could not make a study on overall factors influencing the beneficiaries which are according to different locations.

Data Analysis, Discussion and Findings ofthe Study

1. Observation of different Staffing position in different goanpanchayat, Registered of Household and Registered Employees

It has observed that in gaonpanchayat, there has been different type of position officer appointed like Junior Engineer, Block development officer, Block Project Manager,Block Coordinator, Veterinary Field Officer, Job Card Holder, CRP SHG Member, Social worker etc. It's observed that top level post people they are enquired for the procedure of providing job card to the applicants.

As per guideline of MGNERGA scheme, when the unemployed persons of gaonpanchayat applied for Job Card to get him/her self-employed under the concern gaonpanchayat, the officer can provide the job card only after checking of the application form and finding whether all the necessary document are attached or not. Table no. 1 presented different position of staff in different goanpanchayat. In four different gaon, there have total 52 number of different positions.

Table no.1.1: Different position of staff in different gaonpanchayat

Sr. No	Position of staff	Joypur	Namrup	Nigam	Tipam	Total
1	Junior Engineer	2	1	1	2	6
2	BDO& Charge Officer	2	1	2	2	7
3	Block project Manager	3	0	2	3	8
4	Veterinary field officer	1	0	1	1	3
5	Job holder	3	2	2	3	10
6	CRP SHG member	2	2	1	2	7
7	Social Worker	3	2	3	3	11
Total		16	8	12	16	52

*Data collected from block and gaonpanchayat office

Table No. 2 presented different gaonpanchayat householder's number and number of registered persons. From this table find out total number of householder 8713 and number of registered persons 13458.
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Table NO. 1.2 :Registered Number Of Household And Number Of Person

Sr. No	Name of goan	Number of household	Number of registered person	%'age of household	%'age of registered persons
1	Joypur	2328	3939	26.72	29.27
2	Namrup	1840	2260	21.12	16.79
3	Nigam	2242	3745	25.73	27.83
4	Tipam	2303	3514	26.43	26.11
	Total	8713	13458	100.00	100.00

***Data collected from block and gaonpanchayat office**

From abovetablethe study finds, out of four gaonpanchayat in Joypur block, in Joypurgoanpanchayat, there have been the maximum number of percentage householderi.e. 26.72 percentages registered where number of registered persons 29.27 percentage. And it's followed by Tipamgaonpanchayat 26.43 percentages and 26.11 percentagein number of household and number of registered persons. Minimum number of householder and number of percentage respondents have been from Namrupgaonpanchayat, because of in these areas, there have been three units public and government sector, i.e., Namrup Thermal Power Plant, Assam Petro- Chemical Ltd. and Bharmaputra Valley Fertilizer Corporation Ltd. So, maximum rural employment peoples, they have been surveying the job in these three sectors for better wages. If both table study, then both Joypur and Tipamgaonpanchayat more forwarded and they are also known about MGNREGA scheme.The study also finds out the overall ratioproportion of total staff position, number of householders and number of registered persons is 1:170:263.Hence one single staff he or she must be handling 170 householder and 263 number of persons.

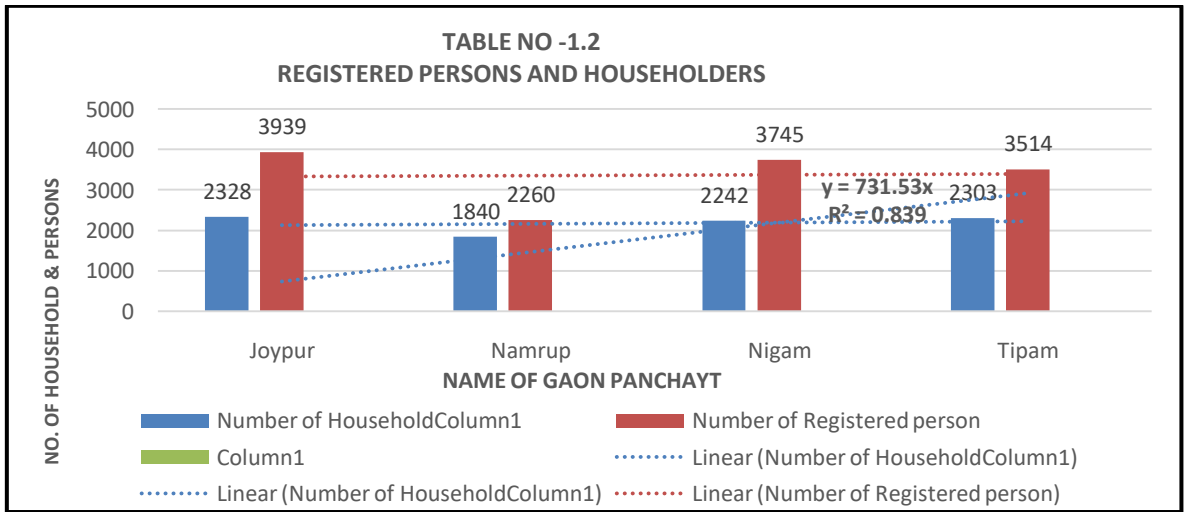


Fig. No.1 (Bar chart with linear equation)

From the above bar chart with linear equation find out, the R square value 0.839, so the number of house holder and number of registered persons highly significant variables.

2. Observation of Age Group wise Employed in different GaonPanchayat

Any employees age group is very important for types of works activity. Because of employees' turnover rate always can improve by age of diversity.Old age group of people and middle age group of people contributes normally lower employee turnover. From the guideline under MGNREGA scheme employee can work start from 18 years after maturity of age and till to age more than 80 years. Table no. 2 presented different age group of persons in different block.

Table no.-2: Age Group Wise Employee And Percentage

Age group	Joypur		Namrup		Nigam		Tipam	
	No. Of person	%'age	No. Of person	%'age	No. Of person	%'age	No. Of person	%'age
18-30	15	10.28	14	12.17	19	13.57	21	14.58
31-40	**56**	**38.36**	**43**	**37.39**	**48**	**34.29**	**57**	**39.58**
41-50	43	29.45	32	27.83	41	29.29	40	27.78
51-60	21	14.38	18	15.65	22	15.71	20	13.89
61-80	10	6.85	8	6.96	10	7.14	5	3.47
80 &Above	1	0.68	0	0	0	0	1	0.69
Total	146	100.00	115	100.00	140	100.00	144	100.00

***Data collectedfrom block and gaonpanchayat office**

Above table shown that the maximum age group of employees are between 31 to 40 and its followed 41 to 50. In all four gaonpanchayat, there maximum percentage of respondence within these two groups, because of these age group people are very conscious and concern for their employment and they also known the advantages of the scheme. Overall, these group of percentage was 37.43. So, it analysed that in these group people are young age capable also more that older age group peoples, but beneficiaries are basically illiterate as well as unemployed. So, all officer is very conscious to communicate with them and but they have been able to communicated with the beneficiaries in local languages.

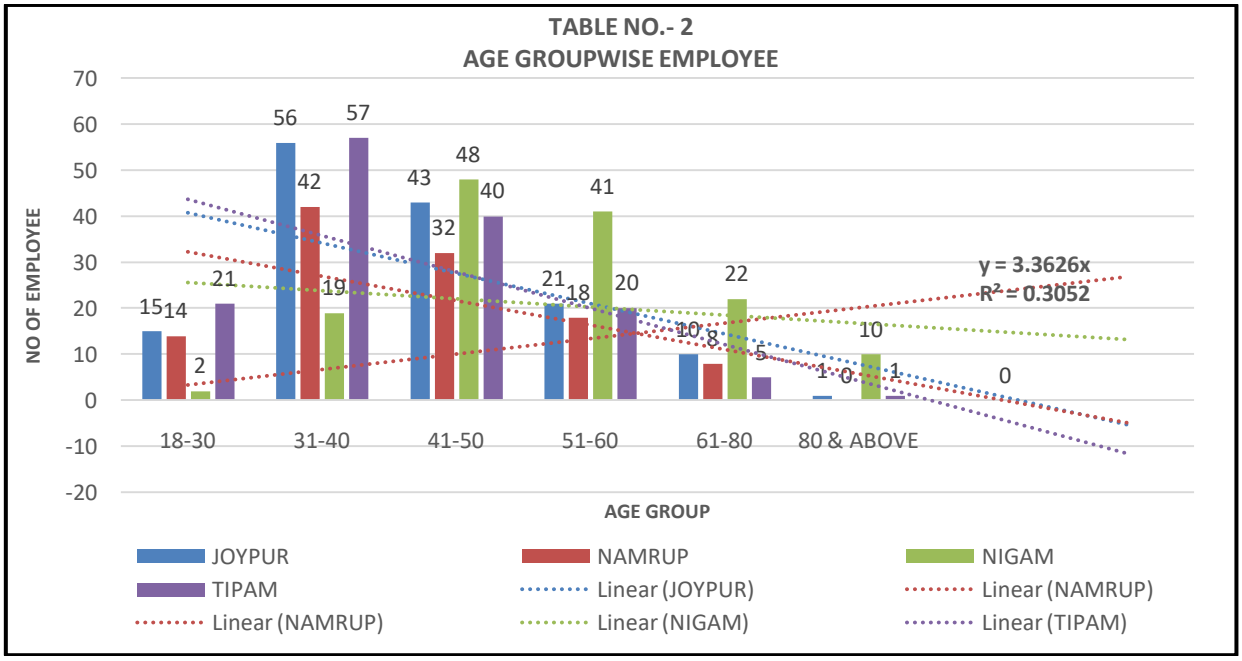


Fig No. 2 (Bar chart with linear equation)

From the above bar diagram and calculation of R square value is 0.3052, so this one is very low significance of age group. Here the value is low significance; the rural people are in these areas forward looking than other gaonpanchayat rural employees.

3. Observation of Job Cards Issued time period and which demanded arise by Employees:

Under MGNREGA scheme's job card is only for rural people who are unemployment. With the help of job card people can do work for 100 days. As per guideline when the applicant applies for the job, then after received the application by the officers of Gao panchayat they must be issued the card within 15 days of working from the date of received of applications. The study has been observed and presented respondents data at table no.

Table no.-3: Demand for job card issued time period

Level of days	Joypur		Namrup		Nigam		Tipam		Total	Total
	No. Of person	%'age of person	No. Of person	%'age of person	No. Of person	%'age of person	No. Of person	%'age of person	Number of person	%'age of persos
1 - 4	2	1.37	20	17.39	10	7.14	12	8.33	44	8.07
5 - 7	130	89.04	77	66.96	90	64.28	58	40.27	355	65.14
8 – 10	14	9.59	18	15.65	40	28.57	74	51.39	146	26.79
Total	146	100.00	115	100.00	140	100.00	144	100.00	545	100.00

***Data collected from field survey**

The table find on demand of respondents, out of 545 respondents 65.14 percentages of sample, they have been received their job card from the panchayat within 5 to 7 days, though the time limits is 15 days. Its followed 26.79 percentages respondents, they have been received within 8 to 10 days. The study shown that, their field officer and job card holder officer, they must have provided their duty and they are bound to provide the job card also, after receiving the application. Secondly, they are also quite conscious for their area's unemployment people.

From the bar chart represented the days level when panchayat issued the job cards of employees and also the find out the linear equation with R square values. The result of R square value is 0.6005 which maximum employees getting job card within the period of 5 to 7 days. The study has been finds out the observations; level of significant is moderately high in days of issued card. So, the number of employees issue cards must increase more within these periods.

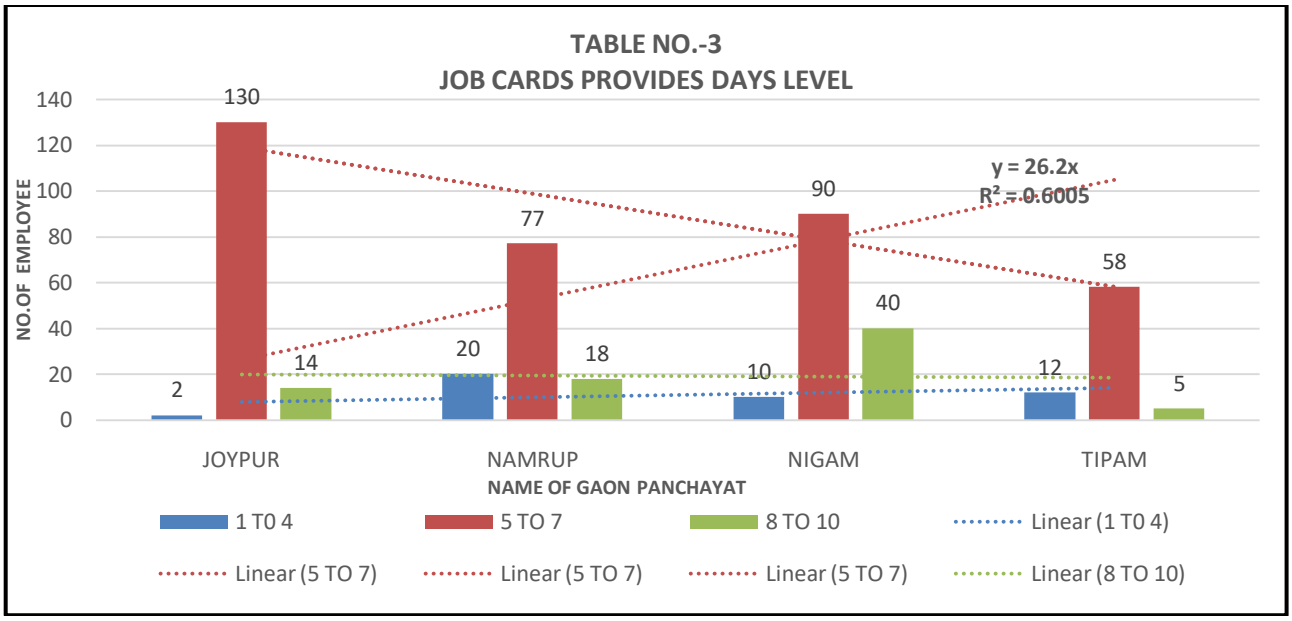


Fig. No.3 (Bar chart with linear equation)

4. Observation of Works Opportunities for Employees

Under MGNREGA scheme, there are right to choose works under eight permissible categoriesworks which are performed by the beneficiaries like Fishery, Rural connectivity,Water conservation, Flood control,Irrigation of canals, Water Harvesting, Excavation of Bandh, Land development etc.

After doing survey of all the beneficiaries of four gaonpanchayat it was observed the beneficiaries, they have been choosing their work own self and applied for their work as their choice. Table no. 4 presented employees work opportunities, which they have been preferred. The study observed though there are different types of work under MGNREGA scheme, but in these four gaonpanchayat there have been only six types of work offered, because availability of works. From these six of works, maximum 27.71 percentage of employees they are preferred road side drain construction works. And its followed almost equally 21.28 percentage in plantation and 21.10 percentage in fishery work preferred.In plantation specially MGNREGA scheme offered Areca nut and Betel leaves plantation which call in Assamese word Tamul and Paan,because of suitable environment and weather condition in Assam is one reason and another people are also considered these plantations due to high rate of market value.Traditionally they have alsoused Tamul&Paan at the time of when guest will visit their house, they have first offeredTamul and Paan, which is always related to the rituals and traditional values of the Assamese people.

Table no-4: Types of work of employees

Sr.no	Types of works	Joypur		Namrur		Nigam		Tipam		Total	
		No. Of employees	%'age	No. Of employees	%'age	No. Of employees	%'age	No. Of employees	%'age	No. Of emply	%'age
1	Fishery	50	**34.25**	10	8.70	35	25.00	20	13.89	115	**21.10**
2	Road side drain construction	28	19.18	43	**37.39**	50	**35.71**	30	20.83	151	**27.71**
3	Excavation of Bandh	24	16.44	2	1.74	3	2.14	4	2.79	33	6.05
4	Cutting & cleaning	15	10.27	29	25.22	15	10.71	10	6.94	69	12.67
5	Plantation	20	13.70	20	17.39	24	17.14	52	**36.11**	116	**21.28**
6	Land Developme nt	9	6.16	11	9.57	13	9.29	28	19.44	61	11.19
Total		146	100.00	115	100.00	140	100.00	144	100.00	545	100.00

***Data collected from block and gaonpanchayat office**

From the survey in plantation works maximum of rural employee, they were from Tipamgaonpanchayat, its followed road side construction works by Namrup and Nigam gaonpanchayat. In Joypurgaonpanchayat, maximum respondents, they got their offered in fishery farms.

Above presentation also presented by bar chart in Fig. No.4which finds out linear coefficient the variables and also calculated R square variables position.

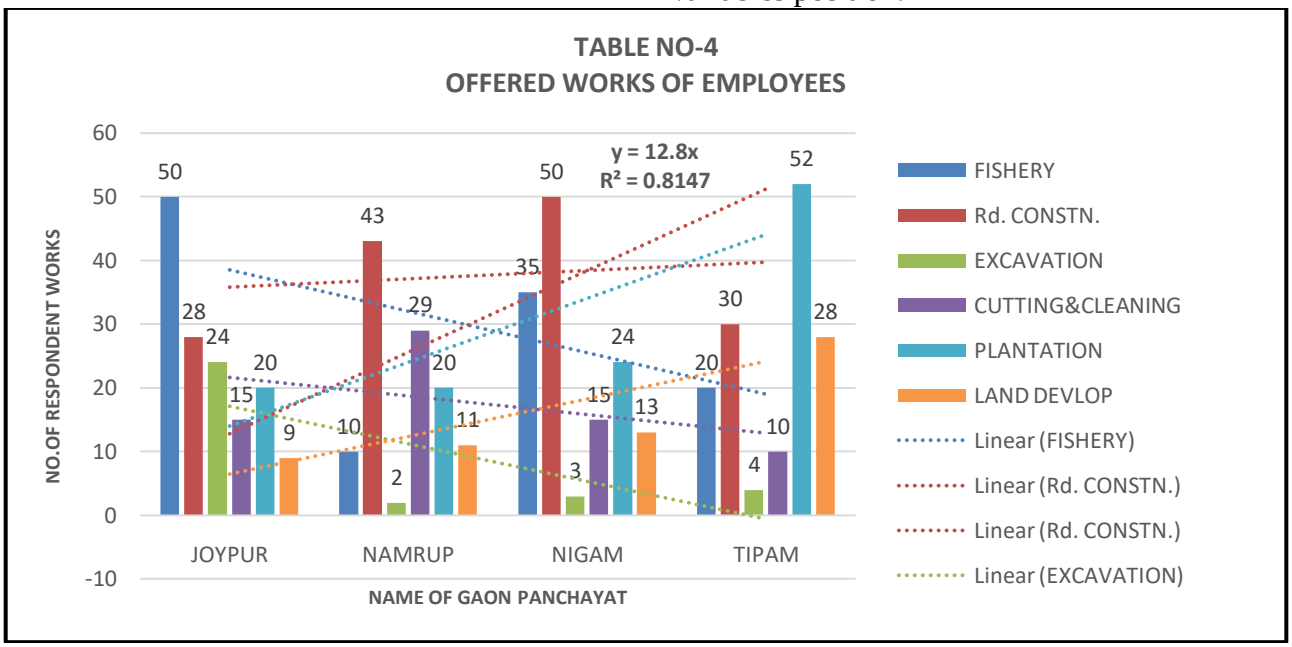


Fig No.4.1 (Bar char with linear equation)

In linear equation of the highest opportunity, which offered by MGNREGA scheme is y=12.8. So, the number of employees has been got offer works depends on the particular gaonpanchayat. Here R square value is 0.8147, so its highly significant and reason is considerable.

5. Observation of Gender analysis of Beneficiaries

Another observation the MGREGA scheme provided women rural employees beneficiary also. In this scheme, its mention that one third of beneficiaries should be women. Table no.5.1 and table no. 5.2considered male and female beneficiaries of grand total of samples in study.

Table no-5.1: Male and female in respective gaonpanchayat

Sr.no	Name of gaonpanchayat	Male	Female	Grand total	1/3 of grand total		Research study sample	1/3 of study sample	
					M	F		M	F
1	Joypur	2058	1881	3939	2626	1313	145	97	48
2	Namrup	1001	1265	2266	1511	755	115	77	38
3	Nigam	2173	1572	3745	2497	1248	140	93	47
4	Tipam	2082	1432	3514	2343	1171	145	97	48

***Data collected from block office and field survey**

Table no-5.2: Male and female beneficiaries

Sr. No.	Categories	Joypur	Namrup	Nigam	Tipam	Grand Total	%' age of grand total
1	Male	76	51	81	85	293	53.76
2	Female	70	64	59	59	252	46.24
	Total	146	115	140	144	545	100.00

***Data collected from field survey**

From the table no-5.2 survey observed number of male and female participant should be in Joypurgaonpanchayat 97 and 48, in Namrup 77 and 38, in Nigam 93 and 47 and Tipamgaonpanchayat97 and 48 respectively. But, in table no. 4.3, the survey observed number of male participant 53.76 percent where female have been 46.24 percent and it's also found out in every gaonpanchayat male and female employees equally works distributed, though the rule is mentioned in the scheme.So, by conclusion the block project manager and block coordinator, they have been followed the new provisions under the act that women have equitable and easy to access to work, decent working condition, equable payment of wages and representation of decision making of women. They have been giving an important women empowerment strength and followed their role and norms of MGNREGA scheme. Secondly, the gaonpanchayat considered the works like Fishery, drain construction works, Areca nut plantation which work more considerable and availablein these areas. Below pie chart Fig no. 4.3 presented male and female employees which data collected by field survey and Fig.no. 4.4 presented which is must follow by gaonpanchayat.

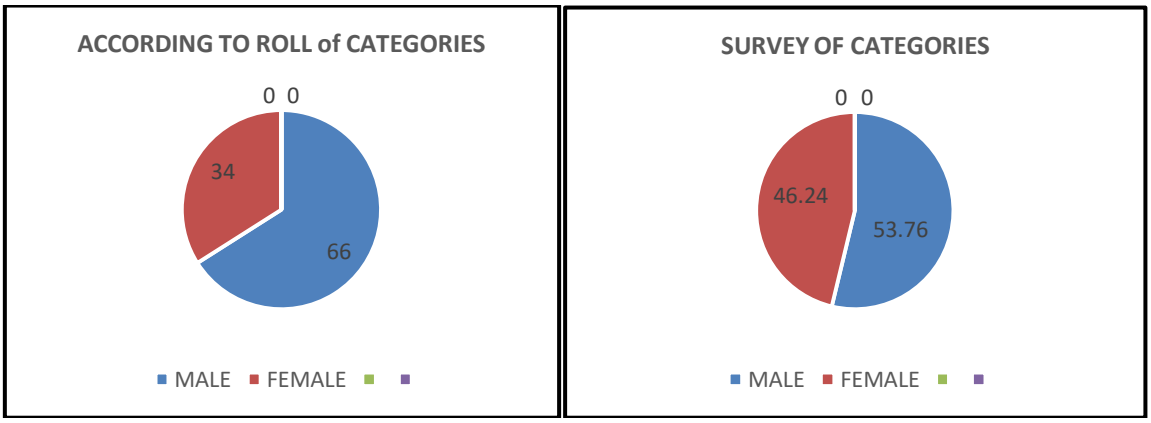


Fig no. 5.2Fig no. 5.3

6. Observation of major problem which faced by rural wages employees

The rural wages employment has a common challenge for better occupation, safety and healthy working condition, better financial service which they have been face every day-to-day life. So, MGNREGA scheme have provided some works for rural unemployment people, which can be give better living standard and reduced unemployment work force. Though, the scheme provided better opportunities for rural employment, but they have always faced some unknown problems. Table No. 5 presented some major problems, which faced by participant.

Table no-6: Major problems faced by employees

Sr. No	Reasons of problems	Joypur	Namrup	Nigam	Tipam	Grand total	%' age
1	Lack of awareness about unemployment allowance	52	42	55	58	207	**37.98**
2	Lack of awareness about work on demand	29	13	18	20	80	14.68
3	Lack of awareness about grievance redressal system	48	40	42	46	176	**32.29**
4	Delay payment of works	17	20	25	20	82	15.05
	Total	146	115	140	144	545	100.00

***Data collected from field survey**

From the table the survey finds out maximum 37.98 percentage participant, they have been faced by lack of awareness about unemployment allowances. And its followed 32.29 percentage faced by lack of awareness about grievance redressed system, because of maximum rural employees are unskilled people and they have been minimum qualification and another point the gaonpanchayat staffing position Minimum participant have been faced awareness about work on demand. Because of whenever participant apply for job cards, then by norms of MGNREGA scheme, officer must provide job card within 15 days, ifgaonpanchayat officer unable to provide job card within 15 days to the applicant, according to law, the applicant has to right to give complaint against the officer and put the complaint in box or on the office of the Block Development Officer. So, the gaonpanchayat field officer isconscious for the employee's awareness and don't delay for work demand period time.

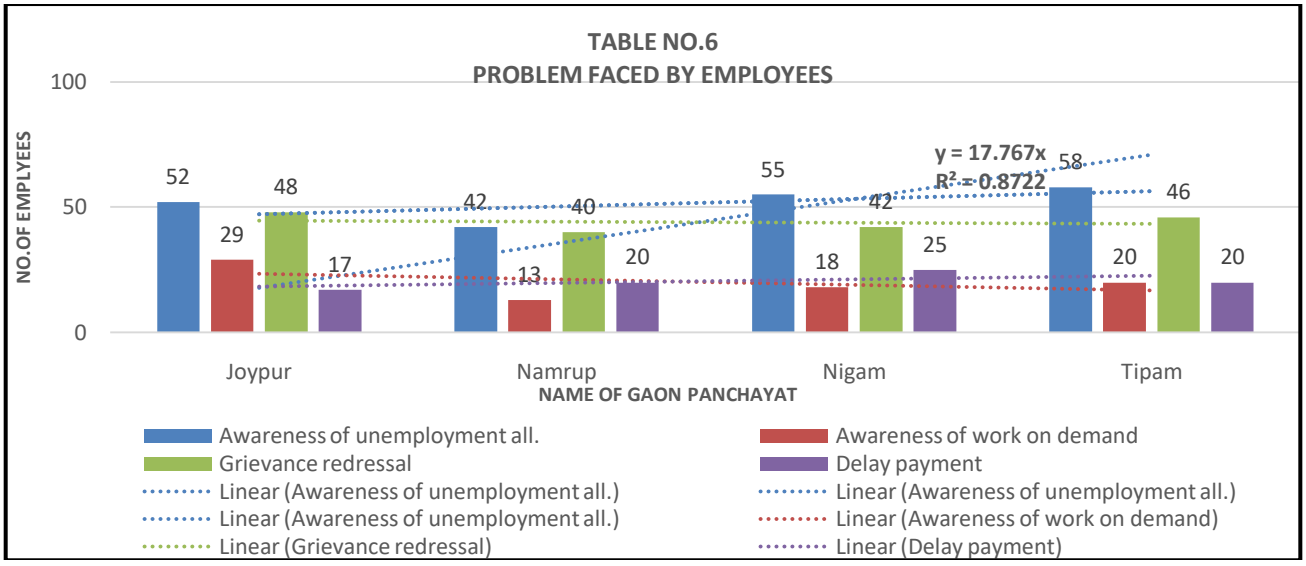


Fig No. 6 (Bar chart with linear equation)

The areas under the survey study observed numbers of employee's awareness is very important and the reasons also dependent on gaonpanchayat officer. It's also find out the significance of R square values is 0.8722, so it's highly significance for the reasons.

7. Observation of Governmental problems on MGNREGA scheme which faced by Employees

The rural wage employment and self-employment is one of the major problems of growth of employment. So, in India the government have been taking different type of initiative by some major scheme. MGNREGA scheme also one of the schemes, which taking initiative for growth of employment. Though, the Government has been taking lots of initiative, but still lots of problem faced by rural employees. **They also face problems like** Political affairs are more due to which people are bound to do such corrupt activities.

Table no.7: Number of employees which faced by government problem

Sr. No	Reasons	Joypur	Namrup	Nigam	Tipam	Grand total	%'age of grand total
1	Low wages against work load	70	55	68	72	265	48.62
2	Lack of enough work availability	20	10	20	18	68	12.48
3	Corruption & Mal practices	38	29	36	33	136	24.95
4	Inadequate staff	4	9	4	5	22	4.04
5	Irregular of funds flows	14	12	12	16	54	9.91
Total		146	115	140	144	545	100.00

***Data collected from field survey**

From the survey maximum 48.62 percentage participant have been the major government problems that low wages against workload. Though scheme have provided only 289 per day, but in Assam at Joypur block all four gaonpanchayat have been paid average only 224 per day. Anotherrupee 65 per employee the gaonpanchayat's officer did not gave to the employer. So, this types of corruption and mal practices faced by employees from the government people. Here, the 24.95 percent participant also given their opinion that they have been faced corruption and mal practices from the government staff.

Very low participant 4.04 percent employees, they have been faced inadequate staff facility, because employees are didn't know about staff office qualification and also, they didn't have interest about their staff due to maximum illiterate and labor class peopleswho have been involved of MGNREGA scheme. The employer also others' problems like bank procedure system in time of payment, works could not complete within time period due to a smaller number of workers appointment etc. That has been observed that they also face problems like:

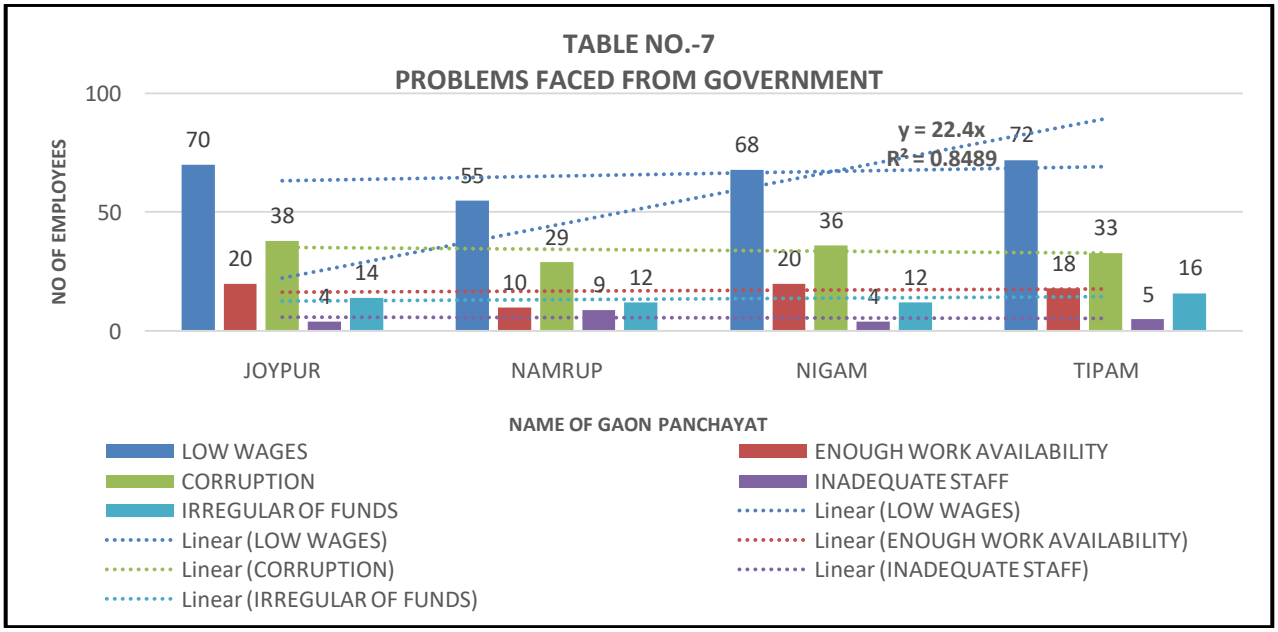


Fig No. 7 (Bar chart with linear equation)

Above bar chart Fig.no.6 represented the linear equations with R square values. The calculation of R square values is 0.8489, so correlation between the number of employees and gaonpanchayat is very highly significant and both are dependable to each other. So, government should be giving important to solve and overcomes the problems.

8. Observation of Government Assistance and Awareness Programme for Rural Employees

MGNREGA scheme has huge potentialfor rural unemployment people. So, Government guidance and assistance is very important forState, District and Block level. Government

can implement the scheme by Rural development functions, agencies, Panchayat Raj Institution, awareness generation programme etc. Another important scheme can implementby the stakeholderalso. They can conduct different types of effectiveness programme, social mobilization, technical and engineering assistant appointment, sponsored by rural development programme etc. Understanding for this point of view the government taking different types of initiative for rural employment strength.Table no. 8 presented different types of strengthen which initiative taking by government in these areas and number of participants responds.

Table no-8.1: Governmental initiative

S.No	Initiative	Joypur	Namrup	Nigam	Tipam	Total	%'age Of total
1	Did govt. ensure demand-based character of scheme (i) Yes	25	23	30	36	**114**	**20.92**
	(ii)No	10	8	10	5	33	6.05
2	Effective planning-like Strick time schedule forstaff, mate and social workers training etc. (i)Yes	15	9	16	19	**59**	**10.83**
	(ii)No	10	4	5	2	21	3.85
3	Proper training facility for staff and mate (i) Yes	10	8	12	12	42	7.71
	(ii) No.	5	4	3	2	14	2.57
4	Development of Human Resources (i) Yes	10	10	12	13	45	**8.26**
	(ii) No	1	2	2	1	6	1.10
5	Reducing delay in Wage payment (i) Yes	30	25	31	30	**116**	21.28
	(ii) No.	5	4	2	3	14	2.57
6	Intimate public grievance redressal system (i)Yes	3	3	1	2	9	1.65
	(ii)No	6	2	2	7	17	3.12
7	Appointment vulnerable group, social workers member, block coordinator etc. (i)Yes	12	10	9	10	41	7.52
	(ii) No	4	3	5	2	14	2.57
		146	115	140	144	545	100.00

***Data collected from field survey**

Table no. 8.2: Positive and negative respondent

Sr. No	Positive response	Rank	Positive response %'age	Negative Response	Rank	Negative response %'age
1	114	2	20.92	33	1	6.05
2	59	3	10.83	21	2	3.85
3	42	5	7.71	14	5	2.57
4	45	4	8.26	6	6	1.10
5	116	1	21.28	14	5	2.57
6	7	7	1.65	17	3	3.12
7	41	6	7.52	14	5	2.57

From the survey it observed out of 545 samples 116 or 21.28 percentage of respondence gave their opinion that the government timely they have been paid the wages. Though initially sometimes the government could not pay the wages timely due to insufficient budget allocation, but now the delay time is reduced.It has been followed 20.92 percentage employees they gave their opinion that the government have ensured implement most of the workswhich is affected to the employees and also the government have been started their

works as per scheme which is applicable. 59 respondents or 10.83 percentages of respondence, they gave their opinion that government have been apply their effective planning role and they started to give training to field development officer, block project manager, block coordinator, social worker etc.In these gaonpanchayat from the survey also observedthat the 12 officers out of four GaonPanchayat they training is provided to the mates regarding their work till now, but if the need arises then it will be provided to the mates by the State Institute of Rural Development (SIRD), Assam also.

These twelve officers of four GaonPanchayat were enquired for working the main difficulties faced by them under the "National Rural Employment Guarantee" Act 2005. That has been observed that they also face problems like:

- Labors are not given as much as required at the worksite because of the smaller number of "Job Cards", so there is a smaller number of workers and works are not completed within the time.
- The persons who are working under this scheme, are mostly illiterate and so, they cannot understand the rules.
- There is an over burden on officers because for giving one job card to a single worker they will have to follow many rules.
- Bank puzzle
- Insufficient budget allocation
- Too much centralisation weakening local government etc.

From the table values of respondent preferred to positive and negative respondent, itfind out the R square value is 0.0428 and the Meta numeric value (Cross -check) R equal to 0.2069. The technically a positive relationship of the variable is weak. So, the government should give more attention in weaker activities for the implement ofthe scheme.

Conclusion And Suggestions

The conclusion extracted from the study on the Mahatma Gandhi National Rural Employment Guarantee Act 2010 (MGNREGA) scheme of JopurAnchalic in four gaonpanchayat with special reference to the rural people, which helped to find out the rural people's growth within the area of JoypurAnchalicGaon.

Under this study it is drawn out that the MGNREGA scheme has a good scope in the periphery of the JoypurAnchalicGaon as because from the analysis made, it is found that this scheme is very much helpful for providing employment opportunity to the wages rural people who are unemployed. One of the interesting things is to be highlighted here is that the total 545 beneficiaries had made their remarks that the MGNREGA scheme is a good way for the unemployed rural youth to avail employment opportunity which will also help them to get the guarantee of getting job for 100 days in every year through 'Job Card'. Because Job Card is only for rural people who are unemployed and with the help of it unemployed are able to get Job. So, the researcher' finds out that this scheme is benefitting the people in the area under study.

So, we see that this scheme is benefitting the people in the area under study and the hypothesis is true.

Suggestions

Suggestions to officers under Joypur Anchalic Gaon for better development of MGNREGA scheme:

- There should be continuous support and assistance from the officers to the beneficiaries regarding the application of form and for getting their wages after the completion of work.
- They should checkout the bank activities that whether the bank provides the money to the concerned beneficiaries at proper time or not.
- Day to day monitoring of the worker the worksite should be done by the officers.

Suggestions to beneficiaries under Joypur Anchalic Gaon for better development of NREGA scheme:

- The beneficiaries should be made aware of the extent of subsidy be availed in the MGNREGA scheme.
- The beneficiaries have to make use of every opportunity provided by the officers as well as under MGNREGA scheme.

Training programmers extended by "State Institute of Rural Development" (SIRD) is most essential for the beneficiaries as well as for Mates. So, the Mates should try to avail of such training.

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THE ROLE OF CORPORATE SOCIAL RESPONSIBILITY IN MODERATING THE ASSOCIATION BETWEEN FINANCIAL PERFORMANCE AND COMPANY VALUE

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ABSTRACT

Numerous literatures exist in identifying the association between corporate social responsibility and corporate fiscal performance. However, only few studies have identified the mediators and moderators in identifying the relationship between these factors which is crucial for developing the company value. The purpose of this research is to investigate the moderating role of the company value determinant by examining its impact on financial performance and Corporate Social responsibility. The research has used sample of IT companies listed on NSE. With the moderating regression analysis, the study analyzed panel data from 2017 to 2020. The major findings of this study demonstrate that the current or prior period's profitability has an impact on the company's worth. The impact of CSR and firm size on future company value illustrates that the stock price, which reflects today's investor opinion, will be influenced by the previous year's CSR, Size, and Return on Asset. CSR also demonstrates that it may be used as an alternative for profitability, as a company that practices CSR is more likely to do well. In explaining company value, the regression moderating model and preceding period profitability have a better relationship.

Keywords: *CSR, Financial Performance, Moderating Variables, Company Value*

Introduction

A company's commitment to assist to its economic success while also participating in an ethical action that benefits employees and the environment in general is characterized as corporate social responsibility. The public disclosure of a company's CSR operations offers a number of advantages, including increasing consumer interest in the product, improving the company's image, and improving customer loyalty. Future sales will be influenced by consumer loyalty. Profit is a criterion for measuring financial success and has an impact on corporate value, so disclosing CSR provides additional information. (Marshall & Ramsay, 2011).

Experts in the field of business are always disputing whether and how corporate social responsibility has a force on financial success (Lu et al., 2014). According to Reverte et al., (2016) and Wang and Sarkis (2013), CSR is positively influenced with financial performance. On the other hand, Barnett and Salomon (2012) discovered mixed or insignificant relationships. According to Endrikat et al., (2014); Reverte et al., (2016), Javed et al., (2016); a lack of attention to moderating or mediating variables has been given as a rationale for these research's conflicting outcomes (2016). The conflicting study results could be attributable to a lack of data on CSR governance and outcomes from a range of sources. With these elements in consideration, a more in-depth analysis of the influence of other aspects and relationships could provide more comprehensive understanding of the relation between CSR and financial performance in businesses. The purpose of this research is to see if there is any impact on the outcomes among CSR governance and business results, which might clarify a few of the previously inconsistent findings.

An investor's appraisal of a company's efficiency in administering its resource determines its value. Performance metrics like as revenue, size of the business, and level of debt as a predictive tool may have an impact on investor perception. Investors will contemplate the financial burden carried by the business in trying to organize their operations, also known as leverage, when making investment decisions in the stock market, according to Guadano and Pedroza (2018), because high debt usage makes it difficult for the organization to pay its debts and lowers the company value. In recent years, there has been debate over a company's social responsibility as a kind of obligation to be weighed alongside macroeconomic issues. These macro-economic drivers, according to Fernandez (2015), could include interest rates, where a rate indicates the cost of a missed opportunity.

In many cases, Corporate Social Responsibility acts as a moderator. The moderating role is classified as (a) pure moderator if the

moderated variable interacts with the explanatory variables without becoming an independent variable, (b) quasi moderator if the moderated variable does not alter, (c) potential moderator if this variable affects the influence of the value of another variable variable, and (d) predictor moderator if this variable affects the prediction of the independent variable to the dependent variable.

Literature Review

Corporate social responsibility governance, according to Scherer and Palazzo (2007) and Windolph et al. (2014), is defined as objective of an organization to seek moral authenticity from external and internal members for positive impacts of its business strategy in the society.

The implementation of CSR governance, according to Kim et al. (2012), is not a consistent activity with the same motivation and methodology across all firms. Companies that want to establish credibility can pursue one of two types of CSR strategies. Taking major activities and demonstrating a dedication to environmentally acceptable behavior is an excellent method which would result in narrowing down the legitimacy gap.

CSR governance enhances the image of the business. It also solves emerging difficulties is another CSR strategy, according to Seele and Gatti (2015), albeit corporations may not devote the required plans to support CSR governance systematically or strategically. This practice is referred to as "greenwashing" or "window-dressing" in some circles.

According to Marquis (2011), positive social consequences may include the promotion and maintenance of effective equal employment opportunity, as well as the receipt of human rights awards and recognition from various organizations. Environmental results that are beneficial to the environment may include reduced greenhouse gas emissions and improved environmental outcomes.

Conceptual Framework

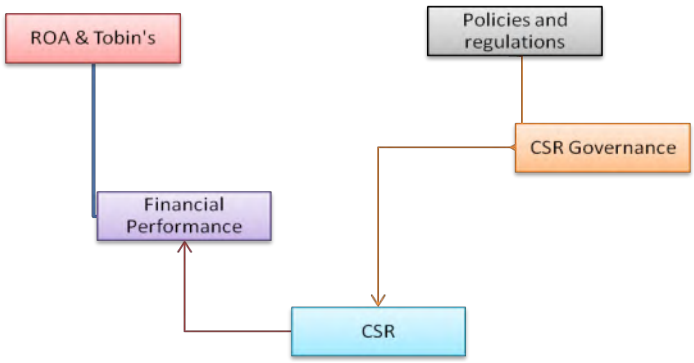


Figure 1 : Conceptual Framework

The conceptual framework is shown in the above figure 1. There are many reasons why companies adopt CSR governance. Torugsa and O'Donohue (2012) found that introducing CSR governance procedures can assist build capabilities and resources. However, CSR governance implementation consumes a large number of organizational resources, which some organizations may not be able to pay. Engert et al (2015) analysed earlier literature on CSR and analysed a case study in the automotive industry, advising companies must devote resources to encouraging and communicating CSR goals with employees. As a result, firms with restricted resources may use CSR as a “green washing” tactic to progress their corporate environmental and social representation without spending extensive resources in CSR.

Previous study has found mixed results when it comes to CSR and financial outcome, such as return on investment (ROI). There is a link connecting CSR and financial performance, according to various research. Turban and Greening (1996) demonstrated that CSR is positively related to ROA for large firms using the KLD social rating. CSR is favorably associated with financial performance as

assessed by ROA and ROE, according to Galbreath (2006).CSR initiatives are linked to both financial as well as non performance effectiveness, as per Reverte et al. (2016). Other investigations have yielded mixed outcomes. Cowen et al. (1987) discovered that CSR and ROE had a negative relationship. Dooley and Lerner (1994) looked into a similar link and discovered that CSR is inversely proportional to ROA. Turban and Greening (1996) discovered that CSR and ROA had a negative relationship.

The literature also combines the studies performed by Seifert et al., (2003) stating CSR and market-based financial results, such as stock returns, fund returns, and Tobin's Q and later supported by Luo and Bhattacharya (2006). According to Brown, 1998; Jones and Rubin, 2001; and Karpoff et al., 2005, CSR is connected to stock performance, therefore corporations are rewarded for excellent CSR and penalised for bad CSR. According to Brammer et al., 2006)., there is a correlation among corporate social responsibility with lack of performance. Becchetti and Ciciretti, (2009); disaggregated CSR metrics to demonstrate that the negative consequences are due to the firms' high environmental performance.

The CSR outcomes obtained by these activities are said to influence the financial efficiency of a firm ’s CSR Governance practices. In other words, CSR outcomes serve as a bridge between governining CSR with fiscal performance. Corporates who employ CSR governance regularly and rigorously have their authenticity signals or requests validated. This method has a favorable impact on their company's revenues and environment.

Research Hypotheses

Financial Performance Vs Company Value

Financial performance is a metric for determining if company is profitable. A business need financial performance as a baseline for determining and evaluating the success of its financial activities. The financial performance of a business is determined by its Return on Asset, a proportion that indicates the profit generated by company's resources. Investors will be keen in this proportion since they want to get the best potential return on their money. According to Luthfiah and Suherman (2018), Return on Assets has a positive beneficial impact on company value which has been vouched by other literature such as Sudiyatno, Puspitasari, Suwarti, and Asyif (2020). This implies that a higher ROA number signifies better financial performance, which leads to a rise in stock price and, eventually, enhanced business value.

H1 : Financial performance impacts company value.

Leverage Vs Company Value

To achieve a higher profit, the corporation borrows money from outside sources (debt). Leverage is a company's ability to meet its financial obligations in near term till the long term. The proportion of a company's assets financed by borrowing, as determined by the amount of debts used to finance operating activities against the number of individual funds, is known as leverage. Mulyana & Saputra, (2017) revealed how firms and organizations have spent significant effort to promoting Corporate Social Responsibility which was subsequently proved by Guadao and Pedroza, (2018) and Sudiyatno et al., (2020).

H2: Leverage impacts company value.

Company Size Vs Company Value

The assets, total sales, earnings, tax burden, and other factors are used to determine or value the size of a company. The size of a firm is determined by the quantity of assets it has, with more assets suggesting a larger organization. The backer, whether within or external to the organization, will be made easier by the company's size. Elouidani & Zoubir, (2015) showed that a company's assets impact the profit it makes which was suported by Meizari & Viani, (2017) and Gunawan, Pituringsih, & Widyastuti, (2018). Later the same was authenticated by studies performed by Murdayanti, Ulupui, Pahala, Indriani, & Surherman, (2020). Afirm's earnings is proportional to the size of its assets. Small assets, when utilised to their full potential and complemented with the best possible selling and cost effectiveness, can aid a company conserve its worth. Guadao & Pedroza, (2018) discovered that a company's size had no influence on its value.

H3: Company size impacts company value.

Corporate Social Responsibility Vs Company Value

The stakeholder hypothesis was investigated by Cornell & Shapiro (1987) and Freeman (1984), who concluded that an organization's ultimate existence and performance are contingent on the stakeholder's financial and non requirements being addressed through CSR. (Pirsch, Gupta, & Grau, 2007). Social responsibility must be practiced in order to enhance the reputation of the company, which will lead to improved performance. The rationale for executing social responsibility mandates a special obligation for the market so the market would be a determinant of a company's worth..The positive response offered by a firm to the application of social responsibility will raise the company's value, resulting in an increase in stock price and increased stock sales. Corporate social responsibility has a positive significant effect on firm value, according to empirical studies performed by Chen & Lee, (2017) and similar studies by Guadao & Pedroza, (2018) and Pham, Ngo, Le, & Nguyen, (2020). CSR, on the other hand, had no discernible impact on corporate value

H4: Corporate Social Responsibility impacts company value.

Research Methods

Regression Model

Figure 2 Model I examines the impact of fiscal performance, firm size,debt equity on company value, using inflation and interest rates as controls.

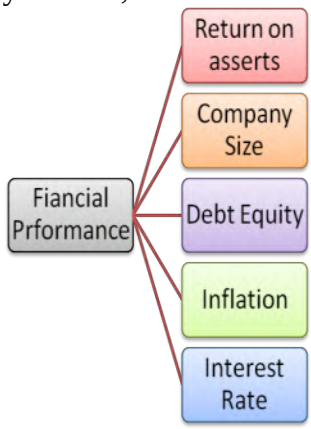


Figure 2: Model 1 of the study

$$\text{Tobin's } Q_{it} = \alpha + b_1 ROA_{it} + b_2 LnSIZE_{it} + b_3 DER_{it} + b_4\ INF_{it} + b_5 INTS_{it} + e_{it} \quad (1)$$

Figure 3 Model II examines the relationship between fiscal performance, company size, debt equity, corporate social responsibility at period t–1 and company value at period t. Model 2 also includes CSR as a factor that determines the value of a firm.

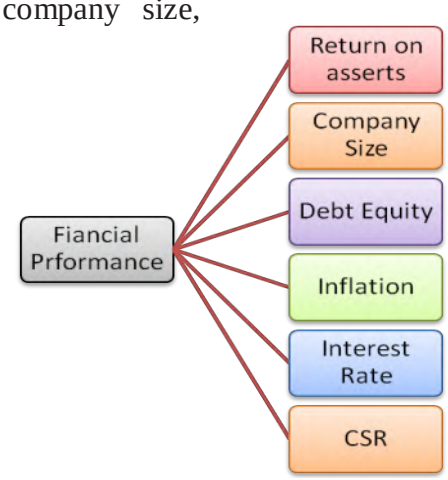


Figure 3: Model II of the study

$$\text{Tobin's } Q_{it} = \alpha + b_1 ROA_{it-1} + b_2 LnSIZE_{it-1} + b_3 DER_{it-1} + b_4 CSR_{it-1} + b_5 INF_{it} + b_6 INTS_{it} + e_{it} \quad (2)$$

Figure 4 Model III is an extension of Model 2 that looks into the effect of CSR as a moderating parameter on firm's outcome because CSR is an action that will help the market perceive the company's worth in a societal perspective. CSR can improve or diminish the relationship between financial performance and corporate value, depending on the inconsistency that results. The role of the variable which moderates can take either of the following classifications (a) pure moderator, (b) quasi moderator (c) potential moderator, (d) predictor moderator depends upon the degree of the moderation.

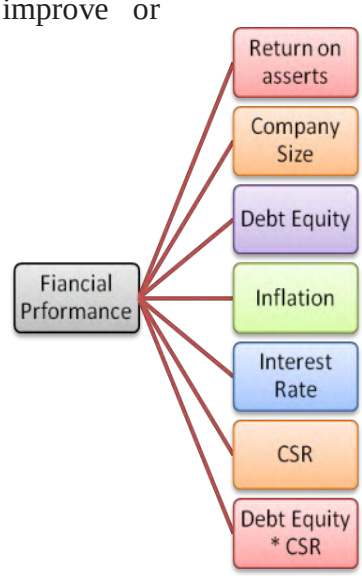


Figure 4: Model III of the study

$$\text{Tobin's } Q_{it} = \alpha + b_1 ROA_{it-1} + b_2 LnSIZE_{it-1} + b_3 DER_{it-1} + b_4 CSR_{it-1} + b_5 ROA * CSR_{it} + b_6 INF_{it} + b_7 INFS_{it} + e_{it} \quad (3)$$

Research Samples

This study focused on listed IT companies on NSE. Purposive sampling was used to collect data. From www.moneycontrol.com, 52 observations of the company's financial report during the period 2017 to 2020 were gathered.

Results and Discussion

Table 1 and Figure 5explains the descriptive statistics for the variables. The return on investment (ROI) is 10.7%, and the company has a market capitalization of $27.54. The DER mean was 95 percent, suggesting that the sector's average debt was 95 percent of its equity, and the slowing growth sensitivity suggested that the sector's enterprises were unaffected by inflation or interest rates. Tobin's Q value of 1.72 revealed that the proportion of the corporate's equity MV towards its equity book value.

Table 1: Descriptive Statistics

Variable	Mean	Std. Deviation
Return On Assets (%)	0.107	**0.12**
Ln_SIZE (%)	27.54	**1.43**
Debt Equity Ratio (%)	0.95	**0.41**
CSR (%)	0.34	**0.07**
Inflation	–2.14	**16.90**
Interest	–13.42	**67.43**
Tobin's Q (%)	**1.72**	**1.96**

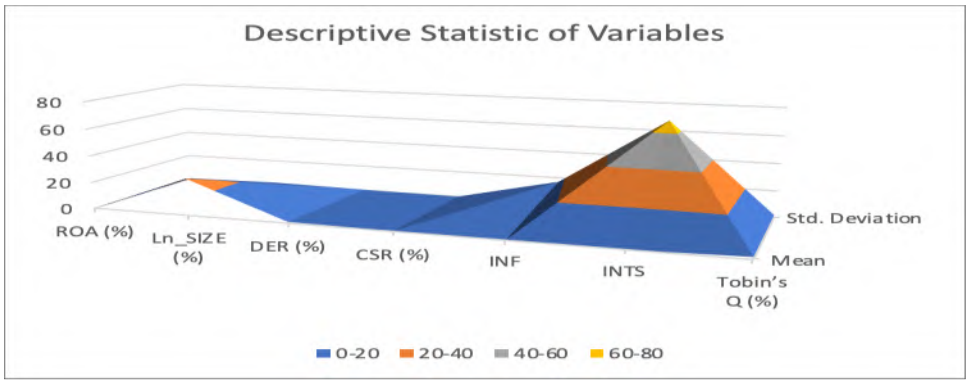


Figure 5: Descriptive Statistic of the Variables

In Table 2 and Figure 6, ROA has a downbeat significance with DER but an optimistic influence on Tobin's Q. However, it has a negative correlation with Size, CSR, and Interest. SIZE and CSR had a positive association, whereas Debt Equity Ratio, Inflation and Interest had no link. Tobin's Q had a negative significant association with Debt Equity Ratio, but it was negligible with CSR, Inflation, and Interest. CSR had a substantial encouraging connection with Interest. However, it was insignificant with Inflation. According to Lewis-Beck (1993), the correlation coefficient between independent variables in this study was equal to 0.8, showing that there was no multi-collinearity.

Table 2: Correlation Matrix

Variable	Return on Investment	Size	Debt Equity Ratio	CSR	Inflation	Interest	Tobin'S Q
Return on Assets	1						
SIZE	.139	1					
Debt Equity Ratio	–.248*	–.07	1				
CSR	–.124	.427**	.002	1			
Inflation	.199	–.213	–.094	–.024	1		
Interest	–.189	.10	–.049	.309*	–.501**	1	
TOBIN'S Q	**.651****	**.251***	**–.301***	**–.219**	**.259***	**–.281***	**1**

** Correlation is significant at the 0.01, and * at 0.05.

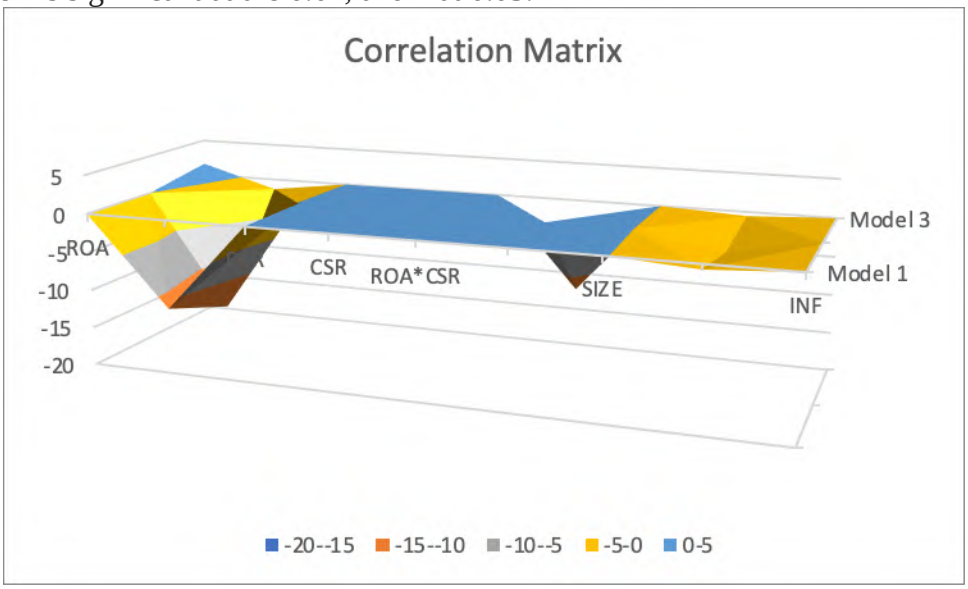


Figure 6: Correlation Matrix

Table 3 explains the moderating role of CSR on corporate value. Table 3 and Figure 7 depicts the relationship between company value and performance, leverage, corporate

social responsibility, and macroeconomic variables. Because return on assets (ROA) has a positive effect on company value (models 1 and 2), increasing ROA will raise the value of the company. The company's stock could be changed by the ROA used in the period t and the ROA used in the period (t–1). Model 3 has little impact on the value of the company. Following that, CSR was either involved or worked independently to control the performance. This result demonstrated that return on assets (ROA), a performance statistic, released details to the investor. The marketplace will reward those who perform well.

Luthfiah and Suherman (2018) stated that Return on Assetshas positively significant influence on firm value, Leverage has nil impact towards company value, according to models 1, 2, and 3 which was supported by Rosikah et al (2018).. The average leverage ratio was 95%, indicating that the company's debt was greater than its equity. This industry is generally safe. Thus, capital structure has no effect on company value. In other words, leverage, which is a risk measurement, does not justify firm value. This is in line with Elouidani and Zoubir's earlier investigation (2015).

At time t (models 2 and 3), business size has a significant impact on company value, but not at period t. (model 1). It suggests a larger corporation will have a higher stock price. Investors perceive firm size as a representation of the firm's asset accumulation over time. As a result, larger companies have easier access to funds. A large corporation is more reputable and less risk, which attracts more investors. However, Guadao and Pedroza (2018) found no significant association linkingfirm size and corporate value. CSR has a substantial impact on corporate value (model 3). It illustrates that raising CSR raises the stock price by improving the company's image. This is in line with Kanwal et al (2013). CSR can be a social and economic activity that involves the community. CSR shows the company is doing well.

Table 3: Pooling Data for Regression Analysis

Variable	Model 1	Model 2	Model 3
Return on Assets	13.987**	14.507**	1.621
	(11.482)	(15.014)	(1.397)
DER	0.049	0.069	–0.031
	(0.241)	(0.381)	(–0.124)
CSR		–3.699**	8.018**
		(–2.455)	(4.957)
ROA*CSR			40.987**
			(12.241)
Control Variable			
SIZE	0.047	0.181*	0.228**
t value	(0.642)	(2.042)	(0.534)
INF	0.001	–0.002	0.010
t value	(0.094)	(–0.314)	(–1.242)
INTS	–0.001	0.000	0.000
t value	(–0.731)	(0.051)	(0.174)
Constant	–1.014	–3.264	3.572
t value	(–0.595)	(–1.604)	(1.298)
F statistic	3.241*	4.362*	4.641*
Adjusted*R* Squared	0.049	0.714	0.732
Durbin Watson	**1.832**	**1.924**	**1.824**

Note: *, **, denote significant level at 0.1, and 0.05 respectively.

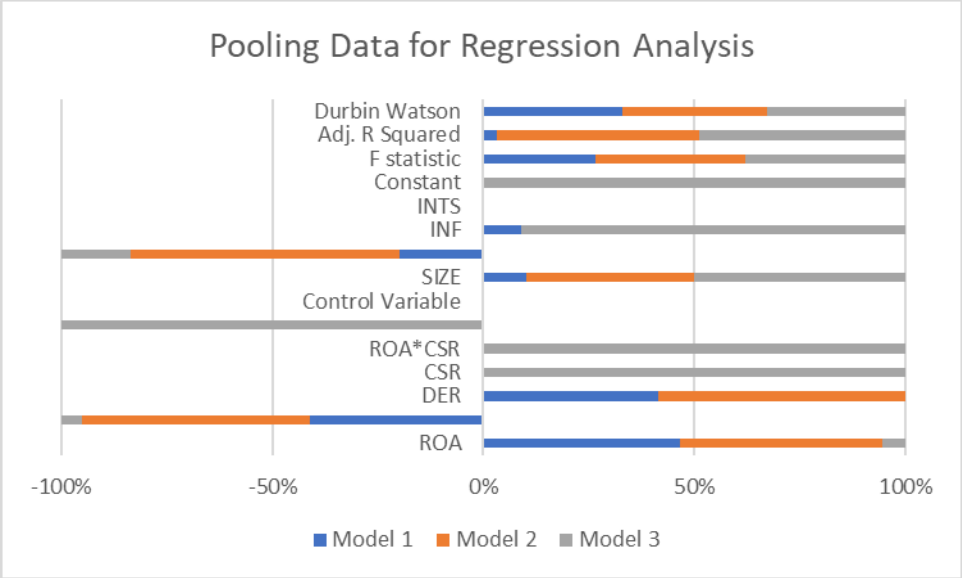


Figure 7: Pooling data for Regression Analysis

This suggests that large companies with strong profits will do more CSR. CSR is expensive, but it is intended to pay off in the long run. The study refuted the idea that CSR is a western phenomenon used by investors to explain business value. Despite the fact that CSR is a legal requirement, developing countries have failed to emphasize it.CSR can influence corporate value. Table 4 shows how CSR can moderate performance. As seen in Model 4, SR had a quasi-moderating effect on ROA, with CSR becoming the independent variable as ROA. However, CSR replaced ROA's influence on company value. The stock price will grow if a company has a strong performance in terms of profitability. When an investor has both CSR and ROA data, he or she will believe that CSR may take the place of the company's performance statistics. It was unaffected by inflation or interest rates (models 1, 2, and 3). Because interest rate changes have no impact on the company's worth, investor perception is unaffected. Inflation reduces a society's purchasing power and an investor's real income. However, inflation had little impact on stock prices. It suggests that inflation had no effect on investors' stock market perspective. And interest rate is the standard reference for all rates, including risk-free rates. When investing in a company on the stock market, the purchaser will not consider it.

Table 4: Moderating Role of CSR - Analysis

Model 1	**Reg. Coefficient**	**Adjusted *R* Square**	**Type of Moderating**
Return On Assets Tobin's Q	14.082*	0.042	
Model 2			
Return On Assets Tobin's Q	14.471*	0.614	
CSR Tobins's Q	–3.691*		
Model 3			
Return On Assets Tobin's Q	1.652	0.871	
CSR Tobins's Q	8.047**		
ROA * CSR Tobin's Q	41.421**		Quasi Moderating

Note: *, **, denote significant level at 0.1, and 0.05, respectively.

Results

Hypothesis	Outcome
Financial performance impacts company value.	Accepted
Leverage impacts company value.	Rejected
Company size impacts company value.	Accepted
Corporate Social Responsibility impacts company value	Accepted

Conclusion

Fiscal performance, DER, firm size, macro-economic aspects namely inflation, interest rates are investigated in this study for the period 2017–20. This study also looked at how CSR affects company value. The present and preceding periods' profitability influenced the company's worth. A better company's financial performance signals to investors regarding its sustainable growth on the company's worth.. Company size determines its worth, which influences investment decisions. It had no effect on corporate value. Debt, inflation, and interest rates had no effect on corporate value. Indirectly, CSR lowered corporation The quantity of indicators presented influenced the investor's favourable response and increased company value. Financial performance and CSR are linked together with the support of moderating variable . A solid financial performance will result from social, economic, and environmental activities. It will help the firm expand responsibly and boost its value.

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A PERFORMANCE EVALUATION OF AODV AND DSR PROTOCOLS OVER TCP AND UDP IN WIRELESS ADHOC NETWORK

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ABSTRACT

Wireless Adhoc Network is an infrastructure-less and distributed network that works without any central distribution system. Because of this reason, finding a route and efficient delivery of packets are the major concerns of this network. To perform these operations efficiently, the selection of best-in-class routing protocols is very much important. It is extremely necessary to do the performance analysis before selecting a protocol for identifying the best one. This paper aims to study two popular adhoc routing protocols mainly DSR and AODV. A performance analysis of these two protocols using various parameters like average throughput, packet delivery ratio and end-to-end delay is done. While doing the analysis, both TCP and UDP protocols have been used as transport layer protocols for transferring the packets. The entire experiment is carried out by using the popular network simulator NS2.

Keywords: *Wireless Adhoc Networks, AODV, DSR, TCP, UDP, Performance Metrics, Performance Analysis*

1. Introduction

Adhoc networks can be considered as an independent system of networks where nodes are linked and communicate with each other over a certain wireless connection [1]. In an adhoc network, instead of depending on a base station or access points, nodes are connected directly with one another for data transmission. In such a network, in addition to being a member of the network, every node performs the role of a router and sends information to the recipient nodes. Depending on the nature of their uses, adhoc networks can be categorized as MANETs, WMNs, WSNs, and VANETS etc [2]. Developing and maintaining a secure network through the use of appropriate routing protocols is one of the primary research areas of adhoc networks [3]. In recent years due to the fast expansion of wireless communication, Mobile Adhoc Network (MANET) is very much popular in the field of wireless communications. MANET is a category of wireless network that supports self-configuration and they are able to rearrange themselves with the change of network topology [4]. The primary goal of MANETs is to make wireless networks more reliable and efficient by embedding routing capabilities into every mobile node [5]. In MANET, each node is able to move along any path which results in the periodic change of connections to various nodes. Due to this nature, finding a route and the efficient delivery of packets are the major concerns of this network. To perform these operations efficiently, the selection of the best-in-class routing protocols is very much important.

Routing is the process of determining a traffic path for sending and receiving data in a network or across several networks. Each and every routing protocol has its own unique mechanism for determining and maintaining the route. Managing the following are the design goals of adhoc routing protocols: constantly changing network topology, lack of permanent infrastructure and centralized administration, bandwidth restricted wireless connections and energy-limited nodes, and so on. [6]. In adhoc networks, the most important routing concern is link loss. Apart from that, a number of other factors such as flexibility of the nodes, size of the network, control overhead etc will have a notable influence on the overall impact of any routing protocol [7, 8]. This paper aims to study two popular adhoc routing protocols mainly DSR and AODV. A performance analysis of these two protocols using various parameters like average throughput, packet delivery ratio and end-to-end delay is done. While doing the analysis, both TCP and UDP protocols have been used as transport layer protocols for transferring the packets. The paper is arranged as follows: Section 2 gives an overview of reactive routing protocols. The problem statement is presented in Section 3. The details of related work are given in Section 4. An overview of the evaluation metrics is included in Section 5.

Section 6 describes the simulation methodology. The simulation findings are presented and discussed in Section 7. Finally, the conclusion of the paper is given in Section 8.

Table1: Approaches taken by AODV and DSR in Adhoc networks

Ref	Protocol Name	Approaches	Remarks
[20]	DSR	Source Base Routing	1. In DSR, hello packets are not used to notify the presence of a node. 2. In DSR, a data packet contains the information of the entire path.
	AODV	Hop-by-Hop Routing	1. In AODV, hello packets are used to notify the presence of a node. 2. In AODV, the next hop information for each data flow is kept in nodes.

2. Routing Protocols

The process of selecting a path for communication inside a network, as well as between and across several networks is known as routing. Routing protocols are mainly in charge of keeping the network's routes up to date and guaranteeing reliable multi-hop communication [9].

In adhoc networks, routing protocols are mainly categorized into three groups. These are –

2.1 Proactive Routing Protocol: Here, each node maintains its own route information in a table, which stores routes details to all potential destination nodes. As a result, proactive routing creates and maintains routes depending on the periodic routing information that each node keeps track of. The most widely used protocol of this category is Destination Sequenced Distance Vector [11].

2.2 Reactive Routing Protocol: Here, routing paths are found on a need basis. The route discovery process includes discovery and maintenance of routes. DSR and AODV are popular reactive routing technologies [12]. Table 1 summarizes the approaches taken by AODV and DSR in adhoc networks.

2.2.1 Ad hoc On Demand Distance Vector: It is a combination of both DSR and DSDV. The basic principle of AODV is based on hop-by-hop routing methodology. It constructs communication between nodes when a nodes request for it. It also gives nodes the option to enter and quit the network at any time. In AODV, for each data flow, nodes need to retain the next-hop information in multi-hop routing [12, 13].

The working principle of the AODV protocol is detailed bellow:

a. When the starting node is lacking a confirmed route to a destination, a RouteRequest is sent.
b. When an intermediate/destination node gets a RouteRequest message, it either prepares a RouteReply message if it has a route to the end node or simply forwards the message if it does not.
c. The RouteRequest message is erased if it is not received within the specific time.

2.2.2 Dynamic Source Routing: The entire working methodology of DSR is based on source node information. It is developed for multi-hop Adhoc networks. Like AODV, it also establishes the route between the nodes as and when required. In DSR, the route discovery approach is carried out by broadcasting route request packets all across the network. [12, 14].

The working principle of the DSR protocol is detailed bellow:

a. During route contraction, DSR floods the network with RouteRequest message.
b. Intermediate nodes forward the RouteRequest message if it is not duplicate.
c. Once this request message is collected by the destination node, it sends the RouteReply message.

2.3 Hybrid Routing Protocol: It is primarily the mixture of both proactive and reactive protocols. Based on the requirement, hybrid protocols sometimes act as proactive protocols and sometimes as reactive protocols. When the nodes are communicated in intra-zone, they act as a reactive protocol and when the communication is in between inter-zone,

they act as a proactive one. Zone Routing System is a common hybrid routing protocol [15].

3. Problem Statement

This paper aims to give an analysis of the performance of two prominent adhoc routing techniques, AODV and DSR, utilizing various performance indicators like average throughput, packet delivery ratio and end-to-end delay. In this analysis, both UDP and TCP protocols will be implemented as transport protocols to exchange packets between the source and destination nodes. The entire simulation is done with the popular NS2 simulator.

4. Related Work

Many researchers attempted to analyse the operation of reactive protocols such as DSR and AODV in adhoc networks. The problem with these procedures is that they are intricate and may be changed in a variety of ways to get high performance in a number of situations. In this section, some related work is presented.

In (Mohammad Naserian et al.) the authors provide a novel methodology for testing the reactive routing algorithms like DSR and AODV. The results of the analysis were compared to those of the simulations and found to be consistent. The findings of this research can be utilized to calculate the scalability of routing technologies [16]. In (H.P Wang et al.) the authors conduct a study where they use both CBR and TCP as transport protocols to examine the performance of reactive (DSR, AODV) and proactive (DSDV) protocols. The authors found that AODV beats the other investigated routing protocols in PDF for CBR traffic and has a shorter latency than DSDV and DSR. In TCP traffic, AODV performs worse than DSDV, while in PDF traffic, it is similar to DSR [17]. In (Sharma et al.) the authors investigated the effectiveness of proactive and reactive strategies in various scenarios. Simulation studies reveal that for small size networks, proactive protocols outperform reactive protocols. On the other hand for large network, reactive protocols are more efficient than proactive protocols in terms of performance indicators like as packet delivery ratio and end-to-end delay [18]. In (Perkins et al.) the authors demonstrate that DSR beats AODV for application-oriented metrics like latency and throughput when the number of nodes is limited. When there are a lot of nodes, AODV outperforms DSR [19].

5. Performance Metrics

Performance metrics assist in identifying the network that is strongly impacted by the routing algorithm in order to achieve the right Quality of Service. In this paper, the following metrics are taken into account:

a. **End-to-End Delay**: It is the duration of time required by a data packet to traverse from sender to the receiver in the network for a given amount of time [21, 22]. The network performance improves as the end-to-end delay decreases.
   End-to-End delay= End time - Start time
b. **Average throughput**: The average throughput can be calculated as the total no of data packets received by the receiver divided by the total time of transmission [21, 22]. The entire calculation can be done once the final packet reached the destination successfully.
   Average throughput= Total Packet (in bytes)/Total time
c. **Packet delivery ratio**: It can be calculated by dividing the count of data packets obtained at the receivers end by the number of data packets initiated at the sender [21, 22].
   Packet delivery ratio= (No of received packets/No of Send packets) *100

6.Simulation Methodology

The process of developing a computerized model of a real-world system for behavioural tests is known as simulation. Before constructing a complex network, simulation will help to analyse the performance and behaviour of the network. In this work, the entire simulation is carried out by using a popular network simulator called NS2. Table 2 presents the grouping of routing protocols (AODV and DSR) and transport protocols (TCP and UDP) for the simulation. Table 3 states the simulation parameters used in our experiments.

Steps involves in this simulation:

Step 1: Configure the wireless network by assigning no of nodes.
Step 2: Add appropriate protocols.
Step 3: Generate and Run the TCL file.
Step 4: Extract individual information from the TCL file.
Step 5: Apply the performance matrices.
Step6: Run the simulation.
Step7: View and analysis the results.
Step8: Exit.

Table 2: Grouping of Routing and Transport Protocols

Combinations			
AODV/TCP	AODV/UDP	DSR/TCP	DSR/UDP

Table 3: Parameters

Sl No	**Parameters**	**Values**
1	Type of the channel	Wireless
2	Routing Protocols	AODV, DSR
3	Transport Protocols	TCP, UDP
4	Radio-propagation model	Propagation/Two ray
5	Number of mobile node	20, 40, 60, 80, 100
6	Antenna	Omni Antenna
7	Simulation Area	830 * 100
8	Simulation Time	25s

To completely examine the performance of these protocols, the simulation was run with various numbers of nodes. Figure1 highlights the deployment of nodes within the network.

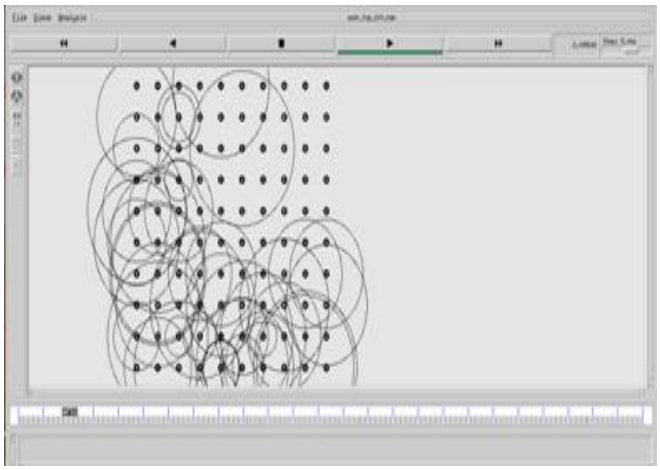


Figure 1: Deployment of nodes in the network

7. Results and Discussion

Here, the capabilities of DSR and AODV are compared. The comparisons are carried out by using different performance metrics like end-to-end delay, average throughput and packet delivery ratio over two different connections TCP and UDP. The main focus of this simulation is to highlight the individual performance of both DSR and AODV over TCP and UDP connections in Adhoc Network

The performance measures help to evaluate the Quality of Service of the network, which is significantly influenced by the routing protocol. In this simulation the numbers of nodes changes from 20 to 100 with an increase of 20 nodes gradually where as the other components remain unchanged. Table 4 summarizes the Comparison of AODV and DSR using different performance metrics over TCP and UDP connections.

7.1 Packet Delivery Ratio:

Figure 2(a): AODV vs DSR over TCP

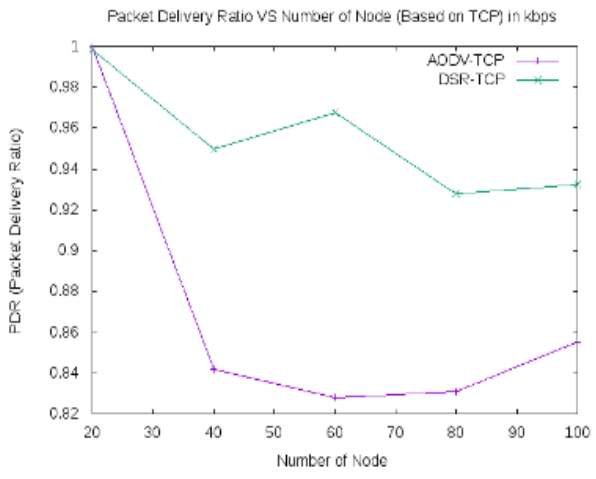


Table 4: Comparison of AODV and DSR using different performance metrics over TCP and UDP connections

No of Nodes	Average Throughput				End To End Delay				Packet Delivery Ratio			
	TCP		UDP		TCP		UDP		TCP		UDP	
	AODV	DSR	AODV	DSR	AODV	DSR	AODV	DSR	AODV	DSR	AODV	DSR
20	383.80	371.63	291.53	270.63	543.77	570.18	684.77	686.39	1.0000	0.998	0.2796	0.261
40	135.68	154.06	106.67	96.06	167.27	2247.27	823.68	151.78	0.8421	0.950	0.1145	0.151
60	84.19	116.26	69.39	73.58	295.57	2046.18	937.28	1363.8	0.8281	0.967	0.0685	0.132
80	76.05	167.89	104.78	113.19	395.15	3368.40	676.05	890.69	0.8311	0.928	0.0459	0.150
100	145.29	171.51	78.60	138.86	403.33	2873.45	675.39	587.21	0.8553	0.932	0.0719	0.211

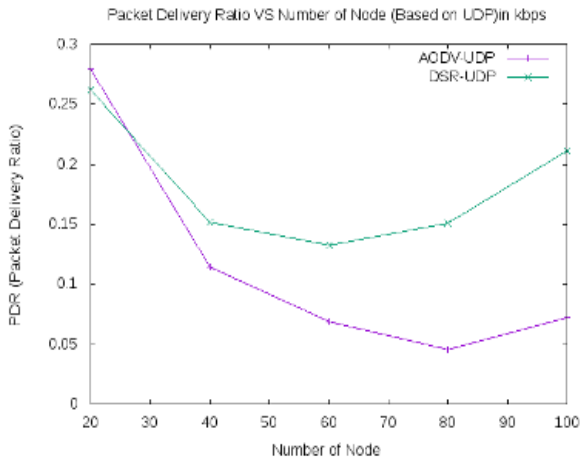


Figure 2(b): AODV vs DSR over UDP

Figure 2(a) highlights that the performance of DSR is more efficient than AODV over TCP. Figure 2(b) indicates that over UDP connection initially AODV performs better, but its performance gradually decreases as and when the count of nodes increases.

7.2 Average throughput:

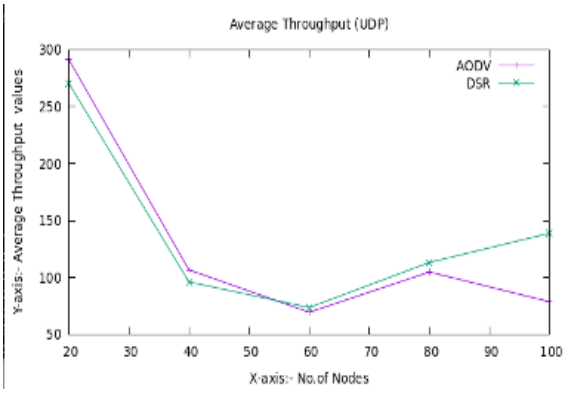


Figure 3(a): AODV vs DSR over UDP

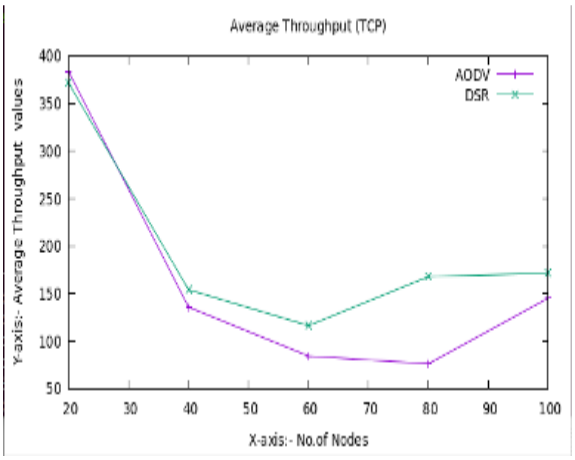


Figure 3(b): AODV vs DSR over TCP

Figure 3(a) clearly indicates that over UDP connection, till the mid of the transmission i.e., up to 60 numbers of nodes the performance of AODV is better but after that DSR performs well. On the other hand, Figure 3(b) indicates that, in case of TCP connection at the initial transmission i.e., in 20 nodes AODV shows better results but later DSR performs well.

7.3 End-to-End Delay:

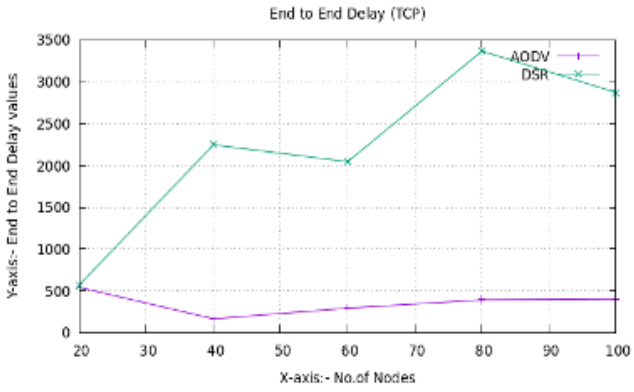


Figure 4(a): AODV vs DSR over TCP

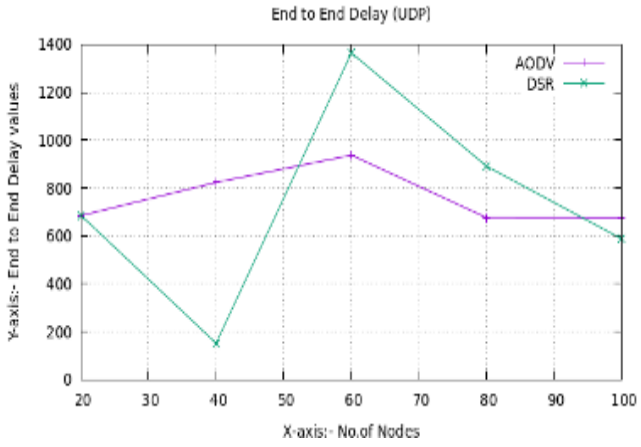


Figure 4(b): AODV vs DSR over UDP

Figure 4(a) represents the end-to-end delay graph for TCP connection. It clearly indicates that DSR gives better results over AODV. Figure 4(b) shows another graph where end-to-end delay is represented for UDP connection. This graph highlights that upto 40 numbers of nodes, AODV shows better performance but after that DSR performs well.

8. Conclusion

In this paper, a simulation-based performance evaluation of AODV and DSR is done using various performance indicators like Average Throughput, Packet Delivery Ratio and End-to-End delay. While doing the analysis, both TCP and UDP protocols have been used as transport layer protocols for transferring the packets. This result shows that DSR protocol is the better performer than AODV in terms of packet delivery ratio over both TCP and UDP connections. In case of average throughput for TCP connection, initially AODV gave better performance than DSR but later DSR performed well. Similarly, for UDP connection similarly at the very beginning AODV shows high performance but later DSR performs better. Again, in case of end-to-end delay, DSR is the better performer over TCP connection and for UDP connection upto a certain number of nodes, AODV has given better performance but after that DSR performs well. Based on the findings of this simulation, it is clear that the performance of the selected protocols varies significantly depending on the count of nodes and in most of the cases DSR, is the better performer.

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MICROWAVE ASSISTED SYNTHESIS OF 1, 3-BENZOXAZOLES WITH SUBSTITUTED THIAZOLIDINONE MOIETY

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ABSTRACT

Microwave assisted rapid synthesis of 3-[4-(1,3-benzoxazol-2-yl)phenyl]-2-aryl-1,3-thiazolidin-4-one 4(a-h) has been carried out by the reaction of Schiff bases of 2-(4-amino phenyl) benzoxazole 3(a-h) in ethanol and SHCH2COOH (thioglycollic acid) (1 mol, 0.92 mL) and ZnCl2 (5 mol%) for 3-4 minutes by microwave irradiation (400W, 146 ◦C) gave excellent yield.Microwave assisted reaction of 2-(4-amino phenyl) benzoxazolewithAromatic aldehydes afforded 3-[4-(1,3-benzoxazol-2-yl)phenyl]-2-aryl-1,3-thiazolidin-4-one 4(a-h) in a short reaction time in yields of 70-83%. The completion of reaction was monitored by TLC. The short reaction time is notable advantages of this method. The synthesized compounds 4 (a-h) were screened for their in vitro anti-microbial activity against Staphylococcus aureus, Escherichia coli, and anti-fungal activity against Aspergillusnigerby measuring the zone of inhibition in mm by cup plate method. Some of the products of series were found to have quite good activities as compared to the standard drug streptomycin and Fluconazole.

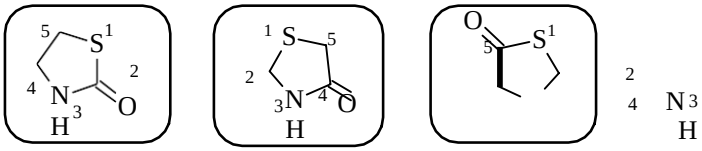
Keywords: *Thiazolidinone, Microwave, Thioglycollic acid, ZnCl2*

1. Introduction

Background: Heterocycles comprised of sulphur represents important scaffolds in drug discovery platforms, including the thiazole which have been referred to as privileged structures, since there presence in a biologically active natural products, pharmaceuticals and diverse synthetic intermediates [1]. Thiazole can also be used in a scaffold hopping strategy or as an amide isostere during the course of probing structure activity relationships (SAR) for lead optimization. As a result, thiazoles are frequently included in the drug design or are used as a core structure for the synthesis of chemical libraries. In the recent years, many thiazole derivatives have been synthesized and subjected to varied biological activities.

A saturated form of thiazoles with one carbonyl group is known to be 'Thiazolidinone'. They are derivatives of thiazolidine having doubly unsaturated five membered heterocyclic ring containing one nitrogen, one sulphur and three carbon atoms including a carbonyl group. It possesses a broad spectrum of pharmacological activities against several targets and has fascinated ongoing attention over the years. Hence this nucleus is also recognized as wonder nucleus (magic moiety).

Their classification grounded on variable position of carbonyl group. The substituents at 2-,3- and 5-positions may be varied, but the greatest difference in structure and properties are exerted due to the position of carbonyl group at 2 (I), 4 (II) or 5 (III). Fig



(I) (II) (III)

Fig.I: Isomers of Thiazolidinones

: Aims of the Research: Amongst these various classes, thiazolidin-4-ones are of particular interest and are always being an attraction point for researchers because of its efficiency towards various pharmacological activities such as anti-bacterial[3-7], anti- fungal[8],anti-inflammatory[9] ,anti-viral[10] ,anti-tubercular[11],antitumor[12] etc. Furthermore they have interesting activity profiles mainly cox-1 inhibitors, inhibitors of bacterial enzyme, non nucleoside inhibitors of HIV Type 1 Reverse Transcriptase (HIVRT) and anti-histaminic agents8. In recent years the extensive research in SAR studies of thiazolidin-4-one derivatives have been subjected and revealed that incorporation of thiazolidin-4-ones ring with known biologically active compounds, either as a substituent group or as a replacement of another ring will significantly alters their electronic and binding properties, metabolic stability, lipophilicity and pKa. These array in biological response profile has attracted the

attention of scientists to further investigate the potential of this organic motif and are highlightened. The different studies described by alternative methods for synthesis of Thiazolidinones. In 2010,P.D. Neuenfeldt et.al.[13] were synthesized 2-cyclohexanyl-3-(N-phenyl)-1,3-thiazolidin-4-ones using mercaptoacetic acid under solvent free condition. K.M. MIstry et.al.[14] were carried out synthesis of 4- thiazolidinoes by the reaction of various sustituted schiff bases with thioglycolic acid and thiolactic acid. K.G.Desai et. al. [15] reported an efficient procedure for the synthesis of thiazolidinones by the reaction of arylidene-[2-benzothiazo)-acetamidyl] with thioglycolic acid in DMF in the presence of a catalytic amount of anhydrous ZnCl2 under microwaveirradiation.

2. Experimental Work

2.1. MATERIALS AND METHODS:

The Melting points were determined in an open capillary and are uncorrected.The reactions were conducted in oven-dried glassware's using anhydrous solvents (freshly distilled and dried over 4° molecular sieves). Reactions were performed at 0°C to room temperature (rt, approximately 25°C) and monitored using thin-layer chromatography (TLC) on commercial silica gel plates (GF254). Visualization of the developed plates was performed under UV light (254 nm). Column chromatography was performed over 200-300 mesh silica gel (spectrochem). 1H and 13C NMR spectra were recorded on Bruker spectrometers (at 400 and 100 MHz). Chemical shifts (δ) are reported in ppm with reference to an internal standard Tetramethylsilane. The following abbreviations were used to describe peak splitting patterns when appropriate: br = broad, s = singlet, d = doublet, t = triplet, q = quartet, m = multiplet. Coupling constants, J, were reported in Hertz (Hz). The microwave used for the synthesis is of ONIDA Company and domestic type. The Infrared spectra were obtained on Perkin Elmer FT-IR spectrometer. The samples were examined as KBr discs 5%w/w.

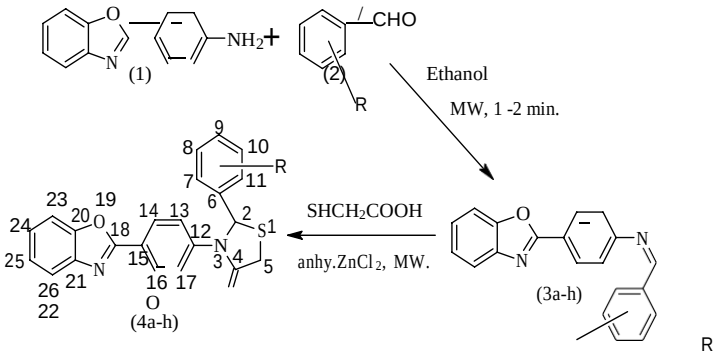
2.2. Synthesis of 2-(4-amino phenyl) benzoxazole (1): -

A mixture of 2-amino phenol (0.01mol), p-amino benzoic acid (0.01mol) and 5 ml citric acid was taken in beaker and irradiated in micro-oven for one to three minute. The completion of reaction monitored by TLC. The reaction mixture was poured on ice cold water and crude product obtained was filtered andrecrystallized from ethanol.

Synthesis of Schiff bases of 2-(4-amino phenyl) benzoxazoles 3(a-h):-

A mixture of equimolar quantities of (0.01mol) substituted aromatic aldehyde(2) and 2-(4- amino phenyl) benzoxazole(1) in ethanol was taken in beaker and irradiated in micro oven for 1-2 minute. The reaction mixture was poured on ice cold water and crude product obtained was filtered and recrystallized from ethanol.

Synthesis of 3-[4-(1,3-benzoxazol-2- yl)phenyl]-2-aryl-1,3-thiazolidin-4-one 4(a- h):- In 25 mL flask, a mixture of 3(1mol) in ethanol and SHCH2COOH (thioglycollic acid) (1 mol, 0.92 mL) and ZnCl2(5 mol%) was taken in ethanol placed in a microwave oven and irradiated (400W, 146 ◦C) for 4 min. After completion of reaction (monitored by TLC). It was then diluted with ice cold water. The solid product formed was filtered, dried and recrystallized from ethanol. (Scheme-IV)



Scheme-IV

CHARACTERIZATION OF SYNTHESIZED COMPOUNDS:

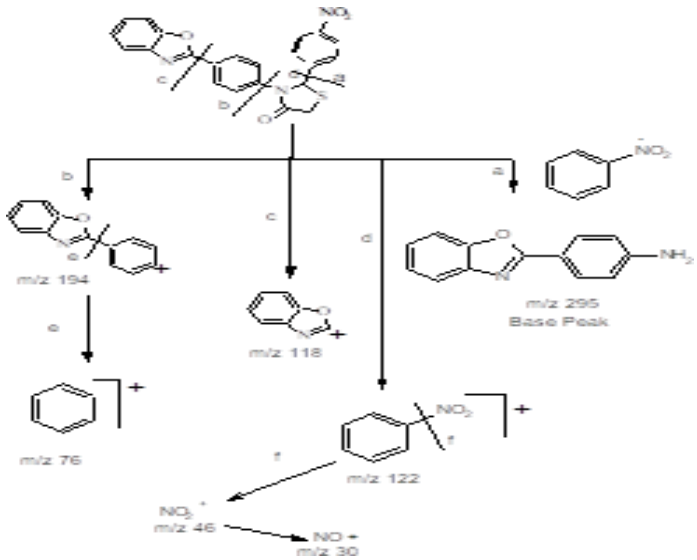
3-[4-(1,3-benzoxazol-2-yl)phenyl]-2-phenyl- 1,3-thiazolidin-4- one(4a): Solid;mpobs(0C)153;Yield: 83%; IR(KBr):υ= 3072.92(Ar-H),2900(-C-H),1690(>C=O), 751(C-S-C) cm-1;13C NMR(100 MHz, DMSO-d6):δ= 34.3(C2),68.5(C5), 110.4(C24), 113.8(C8,C12), 119.9(C26),124.2(C24),124.9 (C25),127.5(C10), 128.2(C14,C17), 128.6 (C15),128..6(C16), 128.(C15),131.3(C9,C11),139.3(C13), 141.1(C21), 144.7 (C7),150.1(C20),164.4(C18),170.9(>C=O) ; 1H NMR(DMSO):δ 3.71 (d, J = 15.9 Hz,1H,C2-H), 3.97 (d, J = 15.9 Hz,1H,C2-H), 6.46 (s,1H,C5-H),

7.3(dd,J=7.87,1H,C14,18-H),7.47(dd,J=7.87,1H,C15,17-H), 7.2(tt,J=7.71, C16-H),7.85(ddd,J=8.19,1H,C8,12-H),7.71(ddd,J=8.19,1H,C9,11-H),7.72(ddd,J=8.55,1H,C23 H),7.27(ddd,J=8.55,1H,C24H),7.33(ddd,J=7.92,C25-H),7.89(ddd,J=7.92,1H,C26-H)ppm.).HRMS(EI) :m/z 372.3095 ([M+ Na])+,Calcd. For[C22H15N3O4S+Na]+372.310.

2.5.2. 3-[4-(1,3-benzoxazol-2-yl)phenyl]-2-(4-chlorophenyl)-1,3-thiazolidin-4-one(4b): Solid;mp_{obs}(0C)121;Yield: 82%;IR(KBr):υmax=3052(-Ar-H),2885(-C-H),1685(>C=O), 751(C-S-C) cm-1;13C NMR(100 MHz, DMSO-d6):δ 34.3(C2),68.5(C5), 110.4 (C23), 113.8 (C8,C12), 119.9(C26),124.2(C24),124.9 (C25), 127.5(C10), 128..6(C17), 129.6(C14,C18), 129.5 (C15),131.3(C9,C11), 135.17.(C16), 139.3(C13), 141.1 (C21), 144.7(C7),150.1(C20),164.4(C19),170.9(>C=O) ; 1H NMR(DMSO):δ 3.71 (d, J = 15.9 Hz,1H,C2-H), 3.97 (d, J = 15.9 Hz,1H,C2-H), 6.47 (s,1H,C5-H), 7.26(ddd,J=8.55,7.56 ,1.76,1H, C24-H), 7.33(ddd, J=7.92, 1.60, 0.45, 1H,C25), 7.54(ddd,J=8.41, 1.54, 0.55,2H,C15,17-H),7.65(ddd,J=8.41, 1.49, 0.55, 2H,C14,18), 7.71(ddd,J=8.55, 160,0.51, 1H,C23-H), 7.72(ddd,J= 8.19,1. 58,0.44,2H,C9,11-H), 7.84(ddd,J=8.19, 1.93, 0.45, 2H,C8,12-H), 7.89 (ddd, J=7.92, 1.76,0.51,1H,C26-H) ppm.).HRMS(EI) :m/z 406.880 ([M+Na])+calcd. For [C12H15ClN2O2S+Na]+ 407.847

2.5.2. 3-[4-(1,3-benzoxazol-2-yl)phenyl]-2-(4-fluorophenyl)-1,3-thiazolidin-4-one (4c): Solid;mpobs(0C)111;Yield: 78%; IR (KBr): υmax=3067(Ar-H),2838(-C-H),1685(>C=O),1581(Ar-C=C<), 751(C-S-C) cm-1.13C NMR(100 MHz, DMSO-d6):δ 33.5(C2), 62.7(C5), 110.4(C24), 113.8 (C8,C12), 119.9(C26),124.2(C24),124.9 (C25), 127.5(C10), 127.8 (C14,C18), 115.2 (C15,C17),128.2(C16),131.3(C9,C11),139.3(C13), 141.1 (C22), 144.7(C7),150.1(C21),164.4(C19),170.6(>C=O) ; 1H NMR(DMSO): δ 3.71 (d, J = 15.9 Hz,1H), 3.97 (d, J = 15.9 Hz,1H), 6.39 (s,1H), 7.10 (ddd, J = 8.5, 1.2, 0.6 Hz,2H,C15,17-H), 7.26(ddd,J=855 7.661.76,1H,C25-H),7.33 (ddd, J=7.92,1.60,1H,C25-H),7.5 (ddd, J=8.45 1.33,0.55,2H,C14,18-H),7.71 (ddd, J= 8.55, 1.60,0.51,1H,C24-H),7.72(ddd,J=8.19,1.93,0.45,2H,C9,11-H),7.84 (ddd, 2H,J=8.19,1.93,0.45,C8,12-H), 7.89 (ddd,J=7.92,1.76,0.51,1H,C26-H)ppm.).HRMS(EI):([M+Na])+ m/z:found=390.430, [C22H15 FN2O2S+Na]+, requires 390.512.

2.5.3. 3-[4-(1,3-benzoxazol-2-yl)phenyl]-2-(4-nitrophenyl)-1,3-thiazolidin-4-one(4d): Solid;mp_{obs} (0C)177; Yield: 80%;IR (KBr):υmax= 3066(Ar-H),2933(CH),1650(>C=O),1519.274(Ar- C=C<),1423(-C=N-),775(C-S-C)cm-1.(Fig. II);13C NMR(100 MHz, DMSO-d6):δ 33.4(C2),68.5(C5), 110.4(C24), 113.8 (C8,C12), 119.9 (C27),124.2(C24),124.9 (C25), 127.5(C10), 127.8(C14,C18), 124.6 (C15,C17), 131.3(C9,C11),139.3(C13), 141.1 (C21), 143.3 (C16),144.7(C7), 150.1 (C20), 164.4(C19), 170.9(>C=O) (Fig.IV);1H NMR(DMSO): δ 3.72 (d, J = 15.9 Hz,1H), 3.97 (d, J = 15.9 Hz,1H), 6.50(s,1H), 7.25(ddd,J=7.93, 2,25,0.44,1H, C24H),7.33(ddd,J=7.92,.56,1.60,1H,C25H),7.41(ddd, J=7.93,2.225,0.55,2H, C14,18H), 7.71 (ddd, J=8.55, 1.60,0.51,2H,C23-H),7.72(ddd,J=8.19,1.59,0.44,2H,C9,11H),7.84(ddd,J =8.19. 1.93, 0.45,2H,C8, 12-H), 7.89 (ddd,J=7.92,1.76,0.51,1H,C26H),8.16(ddd,J=7.93,1.86,0.44,2H,C15,17-H)(Fig.II). HRMS(EI):m/z 417.303 ([M+H]+calcd. for [C22H15N3O4S+H]+417.4372.



Fragmentation of compound (4d) Fig.II

3-[4-(1,3-benzoxazol-2-yl)phenyl]-2-(2-hydroxy-3-methoxyphenyl)-1,3-thiazolidin-4-one(4e): Solid;mp_{obs} (0C)211;Yield: 79%; IR (KBr): υ= 3275(-OH),3099(Ar-H),2855(CH),1690 (>C=O), 1569.27(Ar-C=C<), 1494(-C=N-),751(C-S-C)cm-1.13C NMR(100 MHz, DMSO-d6):δ 32.6 (C2), 68.5(C5), 110.4(C23), 113.8 (C8,C12), 119.9(C26),124.2(C24),124.9 (C25), 127.5(C10), 127.8(C14)128.8 (C15),145.2(C18) ,146.2(C17)), 117.9 (C16), 131.3 (C9, C11),130.7(C13), 141.1 (C22), 144.7(C7),150.1(C21), 164.4 (C20), 171.3 (>C=O) ; 1H NMR(DMSO)): δ 3.7(s,3H,-OCH3),3.72 (d, J = 15.9 Hz,1H,C2-H), 3.97 (d, J = 15.9 Hz,1H,C2-H), 6.39 (s,1H,-OH), 6.67 (dd, 1H,J=8.61,2.63,C16-H),6.8(dd,1H,J=7.89,2.63,C14-H), 7.08 (dd, J=8.61 ,7.8,1H,C15-H) 7.25(ddd, J=6.55,7.56,1.76,1H,C25-H), 7.3 (ddd, J=7.92, 7.56,1.60,1H,C26-H),7.71(ddd,,J=8.55,1.60,

0.51,1H,C24-H),7.72(ddd, J=8.19,1.58,0.44,2H,C9,11-H),7.84(ddd,2H,J=8.19,1.93,0.45,C8, 12H),7.89(ddd,J=7.92,1.76,0.51,1H,C27-H)ppm.).HRMS (EI): m/z 418.460 ([M+H])+calcd. For [C23H18N2O4S+H]+ 418.431.

2.5.4. 3-[4-(1,3-benzoxazol-2-yl)phenyl]-2-(3-bromophenyl)-1,3-thiazolidin-4-one(4f): Solid;mpobs (0C) 280; Yield: 70%;IR(KBr):υ= 3279(-OH),3065(Ar-H),2845(CH),1670 (>C=O), 1559(Ar-C=C<),1484(-C=N-),761(C-S-C) cm-1.13C NMR(100 MHz, DMSO-d6):δ 32.0(C2),68.5(C5), 110.4(C24), 113.8 (C8,C12), 118.2 (C15), 119.9(C27),124.2(C25),124.9 (C26), 127.5(C10), 128.2 C18), 129..9(C17), 130.7 (C14),131.3(C9,C11), 133.0(C16), 137.0(C13), 141.1 (C22), 144.7 (C7),150.1 (C21), 164.4 (C19),170.9(>C=O) ; 1H NMR(DMSO):δ 3.71 (d, J = 15.9 Hz,1H,C2-H), 3.97 (d, J = 15.9 Hz,1H,C2-H), 6.46 (s,1H,C5-H), 7.09 (ddd, J= 1.74, 1.52,0.50,1H,C14-H),7.20(ddd,J=8.55,7.56,1.76,1H,C25-H), 7.25 (ddd, J=8.09, 1.77, 1.52, 1H,C18-H),7.30(dt,J=7.99, 1.74,1H,C16-H),7.33(ddd,J=7.92,7.56,1.60,1H,C26-H),7.34(ddd,J=8.09, 7.99, 0.50, 1H,C17-H),7.71(ddd,J=8.55,1.60,0.51,1H,C24-H),7.72(ddd,J=8.19,1.93,0.45,2H,C9,11-H),7.84(ddd, J=8.19, 1.93, 0.45,2H,C8,12-H),7.89(ddd,J=7.12,1.76,0.51,1H,C27-H)ppm.).HRMS(EI):m/z 451.335 [M+H]+ calcd. For [C22H15BrN2O2S+H]+451.239.

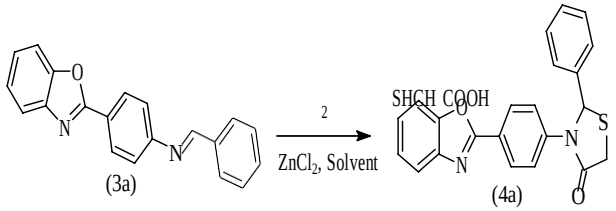
2.5.5. 3-[4-(1,3-benzoxazol-2-yl)phenyl]-2-(2-hydroxyphenyl)-1,3-thiazolidin-4-one(4g);Solid;mpobs(0C)249;Yield: 70%; IR (KBr): υ= 3268(-OH),3093(Ar-H),2883(CH),1693 (>C=O), 1599.274(Ar-C=C<),1494(-C=N-),751(C-S-C)cm-1. (Fig. VI);13C NMR(100 MHz, DMSO-d6):δ 33.1C2),68.5(C5), 110.4(C24), 113.8 (C8,C12), 119.9(C27),124.2(C25),124.9 (C26), 127.5(C10), 127.8(C14), 158.8 (C18), 127.6(C15),115..8(C17), 131.9 (C16),131.3(C9,C11),130.7(C13), 141.1 (C22), 144.7(C7),150.1(C21),164.4(C19),170.9(>C=O) ; 1H NMR (DMSO) :δ 3.71 (d, J = 15.9 Hz,1H,C2-H), 3.97 (d, J = 15.9 Hz,1H,C2-H), 6.3 (1H, s,C5-H),7.20 (ddd,J=8.55,7.56,1.76,1H,C25-H), 7.24 (ddd,,J=8.30, 7.62, 1.29,1H, C16-H),7.25 (ddd, J=8.09, 1.77, 1.52,1H,C18-H),7.33 (ddd,J=7.92, 7.56, 1.60,1H, C26-H),6.69 (ddd,J=8.30, 1.23,0.54,1H,C17-H), 7.71 (ddd, J=8.55,1.60,0 .51, 1H, C24-H),7.72(ddd,J=8.19,1.93,0.45,2H,C9,11-H), 7.73 (ddd,J=7.96, 1.17,0.55,1H, C14-H), 7.84(ddd,J= 8.19,1.93,0.45,2H,C8,12H), 7.89(ddd,J=7.12,1.76, 0.51, 1H, C27-H) ppm (Fig.VII). HRMS (EI):m/z 388.439 ([M+H])+calcd. For[C22H15N3O4S+H]+ 388.241.

2.5.6. 3-[4-(1,3-benzoxazol-2-yl)phenyl]-2-(2-nitrophenyl)-1,3-thiazolidin-4-one(4h);Solid;mpobs(0C)178;Yield: 80%; IR (KBr):υ= 3250(-OH),3063(Ar-H),2815(CH),1695 (>C=O),1596(Ar-C=C<),1476 (-C=N-),741(C-S- C)cm-1.13C NMR(100 MHz, DMSO-d6):δ 32.4(C2),68.5(C5), 110.4(C24), 113.8 (C8,C12), 119.9 (C26), 124.2(C24),124.9 (C25), 127.5(C10), 127.8(C14) 143.3(C18), 128.6 (C15),124..6(C17), 127.6 (C16), 131.3(C9,C11),130.7(C13), 141.1 (C21),144.7(C7), 150.1 (C20),164.4(C19),170.9(>C=O) ; 1H NMR (DMSO): δ 3.71 (d, J = 15.9 Hz,1H,C2-H), 3.97 (d, J = 15.9 Hz, 1H, C2-H), 6.46 (1H, s,C5-H), 6.53 (ddd,J=7.0,1.17,0.45,C15-H), 6.68 (ddd, J=8.27 ,1.17,0.55,1H,C17-H), 6.83(ddd,J=7.90,1.43, 0.55, 1H,C14H), 6.9 (ddd,,J=7.90, 7.66, 1.17,1H,C16- H),7.20 (ddd,J=8.55,7.56,1.76,1H,C24-H), 7.25(ddd,J= 8.09, 1.77, 1.52,1H,C18-H),7.33 (ddd,J=7.92, 7.56, 1.60,1H,C25-H),7.71 (ddd,J= 8.55,1.60,0 .51,1H,C23-H), 7.72 (ddd,J=8.19,1.93,0.45,2H,C9, 11-H), 7.84(ddd,J=8.19,1.93,0.45,2H,C8,12H), 7.89(ddd,J=7.12, 1.76, 0.51,1H, C26- H)ppm,HRMS(EI):m/z417.437 ([M+H])+calcd. for[C22H15N3O4S+H] + 417.32.

3. RESULTS AND DISCUSSION

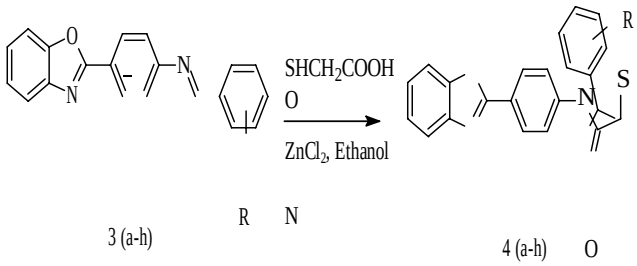
Out of several protocols for the synthesis of 4-thiazolidinone, the most common method is simple condensation of Schiff's bases with mercapto acid. The key functional group required for the reaction is an amine, carbonyl compound, and mercapto acid. This convergent route was envisaged to be highly significant due to easy accessibility of large number of structurally diverse Schiff's bases which can be easily prepared by reacting aromatic/heteroaromatic amine with large variety of commercially available aryl aldehydes under acidic conditions. So, to achieve our research goal for synthesis of 4-thiazolidinone, we hypothesized utilization of 2-(4-amino phenyl) benzoxazole derived Schiffs bases and was prepared from 2-amino phenol and 4-amino benzoic acid using natural acid catalyst. This strategy will offer a valuable addendum in biological profile.

At the outset, after getting Schiff's bases, the optimization of one-pot cyclization reaction of compound (3a) with thioglycolic acid was attempted by varying the solvents along with quantity of ZnCl2. (Table.I) A series of experiments were conducted using various solvents as well as solvent-free reaction conditions with both conventional and Microwave method. (Table I, entries 1-9) The latter was more promising in the sense that the reaction was very rapid affording the desired product 4a within 4 min (Table I, entries 7-9) as compared to former for about 5-12 h(Table 1, entries 1–6) in solvents. The structure of the product was assigned on spectral analysis. (Table No. I, (Scheme-I)



Scheme-I

After the optimization of reaction conditions, we evaluated the scope of the protocol by reacting structurally diverse Schiffs bases. The results are summarized in Table II In general, the corresponding 3-[4-(1,3-benzoxazol-2-yl)aryl]-2-aryl-1,3-thiazolidin-4-one[4(a-h)]were obtained in good to excellent yields in all the investigated cases. No significant electronic effects were observed for the electron donating as well as electron withdrawing substituents on Schiff bases. The use of microwave irradiation in synthesis of 4-thiazolidinone shortens the reaction time with increase in yields of product quantity. (Table-II,Scheme-II)



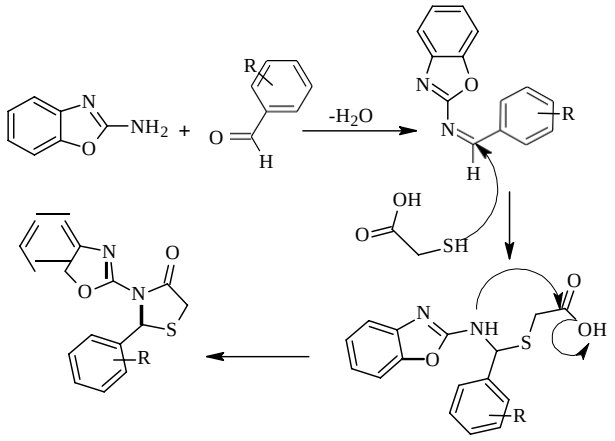
Characterization of products:

The identity of all synthesized compounds **4(a-h)** were ascertained on the basis of IR, ^{1}HNMR and ^{13}C NMR spectroscopy as well as physical constant. The physical and spectroscopic data were in full agreement with the proposed structures.

The IR spectrum of compounds **4a** shows absorption band at 1720 cm^{-1}attributed due to >C=O stretching of thiazolidine-4-one compounds provided the evidence for closure of ring. The ^{1}HNMR spectra of same compounds shows singlet at 8.3 ppm due to –CH and signals at 4.0-4.12 ppm due to presence of endocyclic -S-CH_2- protons. The ^{13}CNMR and Mass spectra of all same compounds is in agreement with the proposed structures.

Mechanism of formation of 1, 3-thiazolidin-4-one

The synthetic itinerary in construction of 1,3-thiazolidin-4-ones involve three components (an aldehyde, an amine, and thioglycolic acid), either in a one or multi-step procedure. The possible mechanism for the formation of 1,3-thiazolidin-4-ones 4(a-h)proceed by initial formation of an imine from reaction of aldehyde with amine, which undergoes electro cyclization by nucleophilic attack of sulfur, followed by intramolecular ring closer *via* water elimination**. (Scheme –III)**



Scheme-III: Plausible mechanism of formation of 1, 3-thiazolidin-4-one

Biological evaluation of Synthesized compounds:

The synthesized compounds 4 (a-h) were screened for their *in vitro* anti-microbial activity against *Staphylococcus aureus, Escherichia coli,* and anti-fungal activity against *Aspergillusniger*, by measuring the zone of inhibition in mm. The anti-microbial activity was performed by cup plate method at concentration 100mg/ml. The results of anti-microbial screening were reported in Table III. Nutrient agar was employed as culture medium and DMSO was used as solvent control for anti-microbial activity. Streptomycin was used as standard for anti-bacterial and Fluconzole as standard for anti-fungal activities respectively. The compounds 4a, 4b, 4c, 4d, 4f, 4g shows good anti-bacterial activity against *E.coli*. The compounds 4b, 4c, 4d, 4f shows interesting anti- bacterial activity against *S.aureus*. The compounds 4a, 4b, 4c, 4d, 4f shows good anti-fungal activity against fungal strain *A. niger* in comparison with fluconazole as standard. It is observed that introduction of -F, - NO_2, -Cl, -OH, -OCH_3 (electron withdrawing) group enhancing anti-bacterial activity as well as anti-fungal activity. The remaining compounds show moderate anti-microbial activity**.(Table-III)**

4. CONCLUSION:

This work represent synthesis of series of novel 3-[4-(1,3-benzoxazol-2-yl)phenyl]-2- aryl-1,3-thiazolidin-4-one derivatives by microwave assistance in excellent yields. The admirable anti- microbial screening demonstrating that the benzoxazole derived thiazolidin-4-ones certainly holds immense promise towards the pursuit to discover new class of anti-bacterial and anti-fungal agents. We believe that synthetic protocol described herein would be useful for synthesis of variety of 4- thiazolidinones with high biological potential.

Merits of current protocol are:

1. Operationally simple and require Short reaction

time
2. Use of solid catalyst like ZnCl2
3. Excellent yield
4. Potential biological activityFUNDING None
5. **CONFLICT OF INTEREST:** No conflict of interest
6. **ACKNOWLEDGEMENT:** We are very thankful to National chemical laboratory, Pune for spectral interpretation and to Department of Chemistry for providing research facilities.

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LOSS ASSESSMENT OF HAILSTORMS ON CROP PRODUCTIVITY IN HISAR, HARYANA: A FARMERS' PERSPECTIVE FROM INDIA

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ABSTRACT

The uncertainty surrounding the impact of climate change is depicted by an associated increase in the number and severity of extreme weather events. It is bound to influence agricultural production across India with a lack of climate change policy. Various studies highlight the substantial positive influence of one such extreme weather event i.e. hailstorm events which adversely affects crop productivity. Given this analogy, the study taps into the effect of three hailstorm events during the month of March in Hisar, Haryana. The study records the significant influence of hailstorm on crop productivity. With increase in climate variability, there is bound to be a direct effect on agricultural production hence, there is a need to develop an elaborate policy framework to deal with these extreme weather events. Moreover, the absence of an objective post-disaster contingency plan affects the farmers' income. The study emphasizes the need for a structured disaster framework to deal with the impact of hailstorm events on crop production

Keywords: *Agriculture, crop, climate, hailstorms, India, rainfall.*

Introduction

Agriculture in India is a major source of living. The northern plains of India are known as food bowl of India. But in recent years the changing climatic conditions in India cannot be denied and so there influence on agricultural productivity. Unseasonal rainfall, hailstorms and winds during the flowering season adversely influences the productivity thus losses to the famers. Out of all the hailstorms are the major factor worst influence the crop production. Production on thousands of acres of land gets damaged in hours leaving nothing in the hands of farmers. This not only influences the farmers but economy as a whole as agriculture hold as significant contribution to Indian national economy. Hailstorms are defined as a short-term meteorological phenomenon, often accompanying thunderstorms, that occurs usually at a localized level owing to its origin mainly to strong convective instability which leads to atmospheric moisture being rapidly super-cooled leading to the development of ice-like coalescence of the rainwater. Hailstorms in India are observed mainly during the pre-monsoon season or winter season with high frequency towards the pre-monsoon season mainly between the months of March to May. However, there exists a secondary maximum in the winter season over North-West India, which is mainly a result of the Western Cyclonic Disturbances originating over Mediterranean Sea. The high hailstorm frequency in the country becomes a major issue, when viewed with the already vulnerable agriculture sector which is mainly powered by subsistence tendencies and lacks necessary infrastructure to tackle hailstorm events. With India projected to see an increased frequency of extreme weather events as highlighted by Intergovernmental Panel on Climate Change (IPCC) in its fifth Assessment Report (AR-5), the agriculture sector is bound to be affected by them in the absence of adequate management strategies (IPCC, 2014). A hailstorm as the major manifestation of climate change in north-western India, which is the most significant agricultural region of the country, definitely influences the agricultural productivity of the region and the country. According to National Disaster Management Authority guidelines(NDMA), India is one of the countries, which faces high hailstorm events with an annual frequency of 29 hail days with moderate to severe intensity (NDMA, 2018).

The IPCC AR-5 report estimates that the increasing weather extremities in India may create a food crisis and end up affecting the income of about 10 per cent of the country's population (Bal et al., 2014). The impact may be even larger, given the fact that the country's current agriculture and administrative set-up primarily allows for post hail management, which is largely confined to compensation to the aggrieved farmers that too in extreme cases. Though the government has set up various crop

insurance schemes, these are unable to reach out to small and marginal farmers as they fail to access these schemes due to lack of awareness or on account of undocumented sharecropping and tenancy arrangements.

With this view, the study concentrates on quantifying the loss in crop production in the district of Hisar on account of certain hailstorm events occurring in March 2020. The research paper presents a literature review in section 2; research methodology in section 3 followed by results and discussion in section 4 and conclusion towards the end in section 5.

Literature Review

Climate change and associated weather anomalies are bound to have an impact across various ecosystem services and agricultural production mainly due to large scale changes in temperature and rainfall patterns, increased extreme weather events and their associated intensity (Hossain et al.,2018; IPCC, 2014). The negative impact of such climatic changes is estimated to be higher in the low income, third world countries particularly those lying in the tropics and subtropics. However, the developed countries of temperate climatic regions are projected to have low impact and may even gain from any such change (Mendelsohn & Dinar, 2003; Wheeler & Von Braun, 2013; Ruamsukeet al., 2015).

Climate change and associated extreme weather events have been shown to impact agricultural productivity across the world. Based on the insurance claim paid by crop insurance companies, compensation due to hailstorm events was recorded to a tune of 22.7 million Euros in Cyprus (Nicolaideset al., 2009). Similarly, farmers' net incomes were found to be sensitive to climate change in Bangladesh (Hossain et al., 2018). The study highlights rainfall, winds and hailstorm as major variables along with other factors to establish that the change in climate conditions need to be studied in detail to adapt accordingly and avoid losses. The impact of climate change was found to be profound in the hilly region of Makawanpur in Nepal. The need for extensive location-based studies was emphasized to measure the magnitude of climate change and to ensure better adaptation policies (Subedi, 2018). The impact of extreme hailstorms in India has been studied over the last few years as the occurrence of non-seasonal hailstorms in unconventional regions has increased. National Institute of Abiotic Stress Management (NIASM) under the Indian Council of Agricultural Research (ICAR) studied the impact of hailstorm events on the crops in Maharashtra, which occurred during February and March 2014. It also recommended a slew of pre and post hail management strategies to reduce crop loss (Balet al., 2014). Another study was conducted on the same hailstorm events in Maharashtra, which accessed the loss to crop production using multi-spectral satellite data (Prabhakaret al.,2019). Chattopadhyay in 2016 analysed the occurrence of hailstorms and their impact on crop productivity across the country with respect to the widespread hailstorm events occurring in February and March 2015 (Chattopadhyayet al., 2017). The impact of localized hailstorm events occurring in April 2018 studied on Khasi Mandarin and other horticultural crops in Umiam Meghalaya using randomized block design (Rymbaiet al., 2019).

Guitera (2009) assessed the impact of temperature and rainfall associated with climate change on combined yield for six major crops which included five food crops and a cash crop. The study deduced that climate change could reduce the crop productivity by as much as 9% by 2039. This fall in crop productivity was further predicted to be 25% for the time period 2070-2099. Sarkar et al. (2012) and Krishnamurthy (2012) have highlighted the combination of different crops that are differentially affected by climate change as the major limitation of Guiteras' work.

Fishman (2011) also assessed the impact of intra-seasonal variability of rainfall on crop yields. The paper discussed that the effect of intra-seasonal variability can be reduced by increasing the spread of irrigation, which referred to as adaptation to climate change. However, it could not establish the impact of irrigation on reducing the heightened heat exposure due to climate change (Gupta et al.,2014). SaaRequejoet al. (2011) also correlated average minimum temperature and hail damage intensity over the Spanish Iberian Peninsula. "The results for all the crops studied

are consistent across Peninsular Spain. Only a few scattered areas exhibited statistically significant increasing or decreasing tendencies, with no clear connections evident in any case". The results under this study confirmed to the findings discussed in Changnon (2000; 2001; 2005).

However, when studying the impact of hailstorm events directly on farmers as stakeholders, the existing literature proves to be insufficient. The agricultural production in India is still vulnerable to climatic variability owing to its subsistence nature and dependence on adequate rainfall and temperature. However, Haryana has 91.1 per cent of the cultivated area under irrigation (Department of Economic and Statistical Analysis, Haryana, 2021) yet it has no concrete plan to tackle extreme weather events. Similarly, Hisar with 89.9 per cent of the cultivated area under irrigation (Department of Economic and Statistical Analysis, Haryana, 2021) lacks the infrastructure and policy design to tackle extreme weather events. The strategy to tackle such issues is largely limited to the post-disaster compensation to the affected farmers. This state compensation policy is limited to widespread damage across the region and usually does not apply to isolated events which occur in a handful of villages. Apart from this, the administrative issues compound the implementation of such compensation policies, as the assessment for these policies is based on the discretion of the administrative official. In order to assess the ground level scenario of localized hailstorm events, the current study aims to highlight the perspective of the farmers as the real stakeholders. The current study views the farmers as the main stakeholders who lack scientific awareness with respect to hailstorm events, thus leading to poor documentation of such events and the associated loss. This study undertakes an empirical survey of individual farmers in the district of Hisar to assess the impact of hailstorms events occurring in March 2020 on the two principal crops of the district, namely wheat and mustard.

Research Methodology

The study encompasses the western central district of the state of Haryana, Hisar. The Hisar district lies between 28°56'00"N to 29°38'30"N latitudes and 75°21'12"E to 76°18'12"E longitudes, covering a total area of 4050 squarekilometres. Currently, the district is divided into 4 tehsils – Adampur, Hansi, Hisar and Narnaund; and 9 blocks - Adampur, Agroha, Barwala, Hisar-1, Hisar-2, Hansi-1, Hansi-2, Narnaund and Uklana. The district lies in the Trans-Gangetic plains and has a tropical steppe type climate with a dry hot summer season, distinctive rainy season and a cold dry winter season marked by scattered rainfall due to western cyclonic disturbances.

Image – Hisar Tehsil Wise Division 2019



Source: The Authors

The study records the hailstorm events that occurred in the district of Hisar on 4th, 6th, and 13th March 2020. These hailstorm events were spread across the district with varying intensity and caused extensive damage to the crops. This study records the damage of these events on the principal crops of the district, namely – Wheat and Mustard, which covered an area of 221100 hectares and 76000 hectares respectively in the year of 2018-19 as per the Statistical Abstract of Haryana, 2019-20 published in 2021. (Department of Economic and Statistical Analysis, Haryana, 2021). The primary data in the study was collected using a proportionate stratified random sampling technique to have representative samples across the district. Stratified sampling was done based on the area-wise distribution of sub-tehsils (total 9 in number) in relation to the tehsils, by assigning the sub-tehsil a value of 20 and then obtaining the number of samples to be obtained for each tehsil. After defining the sampling distribution each tehsil was treated as a stratum and farmers were interviewed randomly using a structured questionnaire which included question relating to – total area cultivation for each crop, intensity of the hailstorm events and loss percentages for each crop. The interviews were conversational and open-ended in nature. Wherever possible, photographs were obtained to ascertain the situation. The average district yield data per hectare for Wheat and Mustard was recorded from the Statistical Abstract of Haryana, 2019-20 published in 2021. The average per hectare yield was converted to per acre yield using the conversion scale (1 Hectare = 2.4711) as given in the Statistical Abstract of Haryana, 2019-20 to compare the losses with the expected yield and to generate tehsil wise and district level loss percentage for each crop to facilitate comparison and to quantify losses.

The data on hailstorm was categorized in three divisions using the National Disaster Management Authority (NDMA) Guidelines, 2018 as – slight, moderate and severe. The qualitative criterion defined by NDMA was coded using dummy variables and an average code was developed to assign the intensity to the combined hailstorms as recorded by each respondent.

The relationship between hailstorm intensity and loss percentage for both crops was established using the chi-square test. Analysis of Variance (ANOVA) was used to test the variations across the area under cultivation, loss in production and actual production for each crop across the tehsils and the three hailstorm events. Also, ANOVA was used to test the variations in the above-mentioned categories on the basis of the average code is calculated using dummy variables for each respondent. Further, the bivariate regression was applied using the average hailstorm code for each respondent on total and percentage loss in production.

Analysis

The study surveyed 176 wheat cultivators and 165 mustard cultivators across the 4 tehsils of Hisar district with a total cultivated area of 1075.5 Acres for wheat and 788.5 Acres for mustard. Table 1 presents summary statistics for the variables used in the study. The average landholding among the respondents surveyed is 6.11 for wheat and 4.77 for mustard with a standard deviation of 4.00 and 3.50 for wheat and mustard respectively.

Table 1 – Summary Statistics

	N	Mean	Median	Std. Dev.	t-value
Panel I: Wheat					
Total Area in Acres	176	6.11	5.00	4.00	20.26
Expected Production in KG	176	12253.30	10026.00	8023.72	20.26
Actual Production in KG	176	10502.18	8622.00	6953.75	20.04
Total Loss in Production in KG	176	1751.07	862.00	2032.39	11.43
Total Loss in Percentage	176	13.91	12.00	12.04	15.33
Panel II: Mustard					
Total Area in Acres	165	4.76	4.00	3.50	17.41
Expected Production in KG	165	4157.66	3480.00	3044.99	17.54
Actual Production in KG	165	3323.81	2889.00	2504.44	17.05
Total Loss in Production in KG	165	833.99	522.00	833.29	12.86
Total Loss in Percentage	165	19.65	18.00	13.86	18.21

Source: The Authors
Notes: t-value defines the level of significance

Using the secondary data as accessed from the Statistical Abstract of Haryana, 2019-20 for district average yield, the expected production for wheat and mustard was measured to be 12253.30 kilograms and 4157.66 kilograms for the average landholding among the respondents. The actual production for the average landholding was recorded to be 10502.18 kilograms for wheat and 3323.81 kilograms for mustard. This collated to a loss of 1751.07 kilograms or 14.29 per cent and 833.99 kilograms or 20.06 per cent for wheat and mustard respectively on the mean landholding of the respondents.

Table 2 presents the distribution of the respondents surveyed across the four tehsils of Hisar district. For the in-depth analysis of the summary statistics, ANOVA has been used to analyse the data across four major parameters, namely – total area under cultivation, loss in production, actual production and percentage loss in production across the 4 tehsils. Mean values as recorded from the respondents have been collated tehsil wise in Table 2 for the above mentioned four parameters. The analysis shows that except actual production for wheat all other parameters have significant differences across the tehsils. As per the tabulated data, the mean area under cultivation is highest for wheat in Hansi (7.22) and for mustard in Adampur (8.25). This can be attributed to the differences in the irrigation facility and its frequency across tehsils. Based on the cropping pattern as highlighted by mean landholdings the actual production is highest in Narnaund (11990.05 KG) for wheat and in Adampur (5481.95 KG) for mustard, whereas it is lowest in Adampur (8171.65 KG) for wheat and in Narnaund (1745.46 KG) for mustard.

Table 2 – Tehsil wise Summary Statistics

Tehsil	Total Area in Acres		Loss in Production (KG)		Actual Production (KG)		Total Loss (%)	
	Wheat	Mustard	Wheat	Mustard	Wheat	Mustard	Wheat	Mustard
Adampur	5.26	8.25	2377.47	1695.83	8171.65	5481.95	22.91	24.04
Hansi	7.22	4.89	2930.05	1102.55	11557.45	3150.97	19.60	26.83
Hisar	5.63	4.19	1004.04	568.93	10304.69	3080.48	9.03	16.01
Narnaund	7.05	2.46	2146.45	400.87	11990.05	1745.46	14.85	17.20
Total	**6.11**	**4.77**	**1751.07**	**833.99**	**10502.18**	**3323.80**	**13.90**	**19.64**
ANOVA	2.22	13.36	11.37	18.81	1.51	9.56	15.46	6.93
p Value	0.08	0.00	0.00	0.00	0.21	0.00	0.00	0.00

Source: The Authors
p-value defines the level of significance

Similarly, loss in production was assessed to be highest for wheat in Hansi (2930.05 KG) and for mustard in Adampur (1695.83 KG), whereas it was assessed to be lowest for wheat in Hisar (1004.04 KG) and for mustard in Narnaund (400.87 KG). Percentage loss was assessed to be highest in Adampur(22.91percent, 24.04 per cent) and lowest in Hisar (9.03 per cent, 16.01 per cent) for both crops. The pattern of crop damage matches the trail of the hailstorm events which were severe in the Adampur Tehsil and the adjoining areas of the Hisar tehsil. The study variables across tehsil were found to be significantly different on the basis of ANOVA. Among those, which have a significant difference, the only total area under cultivation for wheat has a p-value of 0.08 whereas all others have a p-value of 0.00.

Table 3: Hailstorms and Losses: Test of Independency (Chi^2 test)

	Slight	Moderate	Severe	Total	Slight	Moderate	Severe	Total
	Panel I: Wheat				*Panel II: Mustard*			
Less than 0	23	2	0	25	4	3	0	7
0-10	29	28	2	59	41	11	0	52
10-20	0	41	6	47	5	31	3	39
20-30	1	27	6	34	2	34	7	43
More than 30	2	7	6	11	1	17	6	24
Total	55	105	16	176	53	96	16	165
Pearson chi^2(8) = 89.3000 Pr = 0.000					**Pearson chi^2(8) = 90.2353 Pr = 0.000**			

Source: The Authors

Notes: p-value defines the level of significance

The inter-dependency of hailstorm intensity and loss in production was established using the chi-square test (Table 3). The test was applied across five mutually exclusive categories of percentage loss in crop production cross-tabulated with average coding of hailstorms which were

calculated for each farmer separately using dummy variables. The test results found significant difference on the basis of chi^2 value, 89.300 for wheat and 90.253 for mustard, between the two variables for the hypothesis that hailstorm intensity and the loss in production are independent of each other, thusestablishing the inter-dependence between the two. It establishes that losses to farmers are significantly related to the hailstorm intensity.

To evaluate the difference in the loss pattern due to hailstorm intensity ANOVA was constructed for actual production, loss in production, and loss in percentage for the two crops as surveyed under the study. Table 4 cross tabulates the hailstorm events recorded on 4th, 6th and 13th March 2020 (marked as Hail 1, Hail 2 and Hail 3 respectively) for each respondent across the qualitative categories of hailstorm intensity as defined under NDMA guidelines, 2018 namely – slight, moderate and severe to assess their impact on actual production, loss in production and loss in percentage for wheat and mustard. The table shows the mean values for a given hailstorm event across its respective intensity category. There is found to be no significant difference for actual production across the three categories of hailstorm intensity for wheat and mustard. However, the difference across hailstorm intensity categories for loss in crop production and loss in percentageis significant at the level of 0.00. This is a result of the hailstorm events coinciding with the final flowering stage for wheat and the ripening stage for mustard. Hailstorm events during these stages lead to significant losses, even for slight events as the crops do not have enough time to repairtheirphotosynthesis process to re-initiate crop production, which is affected by defoliation and dislodging in the plants.

To harmonize the three hailstorm events, an average code was prepared using dummy variables for the hailstorm intensity and collating them as slight, moderate, and severe to appropriate the combined intensity of the hailstorm for each respondent and assess its impact on the actual production, loss in crop production and loss in percentage for both the crops. Again, for this parameter, there is found no significant difference for actual production whereas there is found a significant difference for loss in crop production and loss in percentage across the three hailstorm intensity categories at the level of 0.00.It depicts the intensity ofhailstorm led to the variation in

Table 3 – Hail wise ANOVA

		Actual Production in KG			Loss in Production in KG			Loss in Percentage		
Panel I: Wheat										
		Slight	**Moderate**	**Severe**	**Slight**	**Moderate**	**Severe**	**Slight**	**Moderate**	**Severe**
Hail 1	**N**	113	63	0	113	63	0	113	63	0
	Mean	10328.77	10160.093	0.00	1175.04	2685.68	0.00	13.804	9.930	0.00

	ANOVA		0.23			26.14			41.02	
	p-value		0.87			0.00			0.00	
Hail 2	**N**	79	92	5	79	92	5	79	92	5
	Mean	11183.740	9725.61	6336.50	1181.53	2154.55	2018.500	7.61	18.72	22.60
	ANOVA		1.91			5.30			25.33	
	p-value		0.15			0.00			0.00	
Hail 3	**N**	144	0	32	144	0	32	144	0	32
	Mean	9890.31757	0.00	12019.28125	1375.27027	0.00	3270.28125	12.31973	0.00	20.625
	ANOVA		2.41			26.26			13.45	
	p-value		0.12			0.00			0.00	
Average Hailstorm intensity	**N**	55	105	16	55	105	16	55	105	16
	Mean	10201.45	10551.42	8618.62	404.85	2248.00	2785.93	3.38	18.09	22.50
	ANOVA		0.52			22.05			50.43	
	p-value		0.59			0.00			0.00	

Panel II: Mustard

		Slight	**Moderate**	**Severe**	**Slight**	**Moderate**	**Severe**	**Slight**	**Moderate**	**Severe**
Hail 1	**N**	105	60	0	105	60	0	105	60	0
	Mean	2615.74	3828.15	00.00	493.25	1256.12	00.00	15.87	25.78	00.00
	ANOVA		9.63			42.96			22.71	
	p-value		0.00			0.00			0.00	
Hail 2	**N**	73	86	6	73	86	6	73	86	6
	Mean	3250.48	2996.31	1080.33	492.91	979.72	1094.83	12.27	23.79	45.00
	ANOVA		2.05			8.60			33.73	
	p-value		0.13			0.00			0.00	
Hail 3	**N**	135	0	30	135	0	30	135	0	30
	Mean	9890.31	0.00	12019.28	691.05	0.00	1104.15	17.69	0.00	27.54
	ANOVA		0.08			6.71			13.05	
	p-value		0.77			0.00			0.00	
Average Hailstorm intensity	**N**	53	96	16	53	96	16	53	96	16
	Mean	3212.22	3103.62	2077.68	290.92	978.28	1021.81	7.83	23.77	31.43
	ANOVA		1.28			15.83			44.31	
	p-value		0.27			0.00			0.00	

Source: The Authors

Notes: p-value defines the level of significance

losses. To evaluate the flow of variation, a bivariate regression model is conducted by using average hailstorm intensity as an independent variable and losses as the dependent variable. The result of the impact of the average hailstorm intensity on loss in crop production and loss in percentage across the individual respondents is represented in Table 5.

Table 5 – Regression

VARIABLES	Total Loss in Production in KG		Total Loss in Percentage	
	Wheat	**Mustard**	**Wheat**	**Mustard**
Hailstrom	1440***	504.5***	11.46***	13.45***
	(6.156)	(5.058)	(9.175)	(9.355)
Constant	-809.7*	-61.85	-6.466***	-4.196
	(-1.846)	(-0.330)	(-2.767)	(-1.554)
Observations	176	165	177	166
R-squared	0.179	0.136	0.325	0.348
F stat	37.90	25.58	84.17	87.52
p-value	(0.000)	(0.000)	(0.000)	(0.000)

Source: The Authors

Notes: t-value in parentheses. t-value and p-value defines the level of significance

It is found that the average hailstorm intensity has a significant impact on loss in crop production and loss in percentage which is evident from the positive coefficient values (1440, 504.5, 11.46, 13.45). The positive values depict that an increase in hailstorms further increases the production loss up to 11.46 per cent for wheat and 13.45 per cent for mustard. The regression is conducted presents R square varying from 17.p per cent to 34.8 per cent depicting the explanation power of hailstorm for losses occurring to the farmers. The regression models found to be significant with 37.90, 25.58, 84.17 and 87.52 per cent of F-stat values.

Conclusion

Agriculture and allied activities constitute 18.9 per cent of the state's economy (Department of Economic and Statistical Analysis, Haryana, 2021). The sector-wise contribution of agriculture is lower than the other two sectors, yet it is significant for the country as Haryana contributes 12.13 per cent of the total production of wheat in India and 13.45 per cent of the total production of mustard in India (2018-19 data in economic survey of Haryana, 2020-21). The use of modernized agricultural techniques in Haryana is mainly restricted to the use of modern equipment like a tractor for ploughing, thresher or combines for harvesting, etc., and thus the sector remains vulnerable to extreme weather events. The present study focuses on the loss suffered by farmers in the Hisar district of Haryana due to unseasonal hailstorms occurring in the month of March when the crops are in the final stage of ripening. The study surveys 176 wheat producers and 165 mustard producers to assess the loss caused by such hailstorm events at the ground level, i.e., directly from the farmers. The data collected establishes that the hailstorm events which occurred in March influenced the level of production in wheat and mustard across the district to the tune of 14.29 per cent and 20.06 per cent respectively. The reason for such loss was unseasonal hailstorm events which are normally recorded to be 0.1 for the month of March as per IMD data for the Hisar station1 for the period of 1980-2010. However, the district of Hisar recorded three such hailstorm events in the first half of the month of March, which lead to significant losses in both the crops due to defoliation and dislodging. The study holds significance for various stakeholders in agriculture mainly farmers, scientists, regulators, administrators, social workers, etc. There is an urgent need to develop a framework for tackling extreme weather events such as hailstorms, which involves all the stakeholders to ensure adequate response to these events. Such a response is highly needed given the increasing severity of climatic variability, which is bound to increase such incidents. Primarily, there is a need to

recognize hailstorms as localized disasters and come up with elaborate contingency plans at the district level which involves farmers to minimize the loss due to these events. The contingency plans should include a defined protocol for pre and post-disaster management, creating awareness among farmers about crop insurance and various now-casting applications such as Meghdoot, well defined objective criteria for post hail compensation, etc. However, the most important aspect should be to create awareness among farmers about such contingency plans and enable them to access these features conveniently. The study has its limitations. The study uses the simplest form of analysis. Advanced measures can be used. Large strata of sample focusing on the entire state or major agriculture regions can be studied for concrete results. Multivariate regression consisting of other variable influencing productivity can also be used. Potential researchers can relate the ground-level research with spatial science using remote sensing so as to maximize the benefit to the beneficiaries.

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IMPACT OF COVID-19 ON THE USAGE OF ONLINE PHARMACY PLATFORMS

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ABSTRACT

Since 2015, the global online pharmacy business has been developing significantly due to increased smartphone and internet usage. Due to the increasing spread of e-Commerce, many online pharmacies, also known as e-Pharmacy, around the world now offer basic doorstep delivery. While medical stores were classified as vital services, online pharmacies emerged as a major beneficiary of India's pandemic-induced lockdown, as consumers decided to purchase medicines online to avoid the danger of transmission. The COVID-19 lockdown that was implemented in most of the countries around the world has positively affected the usage of the E-pharmacy platforms for ordering medicines and essentials. The nature and magnitude of change vary from country to country but collectively it has seen a vast alteration. This research paper aims at studying the usage of the E pharmacy platform by people in Vadodara city, Gujarat, the study also aims to compare the use of the Epharmacy platform before and after COVID-19 lockdown. An online questionnaire assisted in determining the extent to which the novel disease Covid-19 influenced participants' decision to purchase medicines online versus offline and how their perception of shopping medicine has altered. We were able to obtain 185 valid replies to the questionnaire. The collected data demonstrates a significant effect of Covid-19 on participants' internet shopping frequency. Additionally, the data uncovers the correlations between statements about the shopping experience of medicines online throughout the Covid-19 era and demographic variables.

Keywords: *Online Pharmacy, Pharmaceutical Industry, Medicines, Digital Platforms, Covid-19*

1. Introduction

An online pharmacy is a pharmacy that operates over the internet and sends medicine orders to customers through mail or shipping firms. Due to the ease, online drug purchases are widespread throughout the world. Businesses sell anything from prescription to non-prescription healthcare supplies via online websites. The Indian healthcare market is expanding rapidly, and both online and offline pharmacies are now operating. According to a FICCI survey, 3.5 million households used a drugstore prior to the Covid acquisition in FY 20. The number of homes climbed to 9 million during Covid-19. However, the reality is that India's pharmacy sector remains highly fragmented, with only a few large retail pharmacies scattered across smaller towns and cities. That is why, according to reports, nearly 99 percent of drug sales occurred 'offline' in 2019. As per one article by the business world, in India online pharmacy has also resulted in a significant increase in first-time online purchasers of medications. So e-commerce players are attracted to this space now, particularly in the aftermath of Covid-19 – this pandemic has created a large number of first-time online buyers of prescription and OTC drugs who are willing to stick with e-pharmacy purchases post-pandemic and in perpetuity. According to an industry report, between 60% and 70% of drugs ordered on the majority of e-pharma platforms are for chronic patients. That is why the growth and expansion opportunities for online pharmacies are highly attractive. At the moment, the top players in e-Pharmacy include Tata 1mg, Netmeds, Pharmeasy, Myra, Apollo pharmacy, and Medlife. Today around 150 start-ups are currently operating as online pharmacies. For India's e-pharmacy sector, 2020 has been a year of improved accessibility and reform. Recently, this industry has grown extremely competitive, with Reliance Industries purchasing a majority position in Chennai-based e-pharmacy platform NetMeds and Tata Group reportedly targeting another prominent E-pharma business, 1MG. With talk of Amazon considering a huge investment in homegrown Apollo pharmacy, this sector will continue to generate headlines and attract big-ticket investment well into 2021, according to Business analysts. There is a dearth of research done on the impact of Covid-19 lockdown on the usage of E-Pharmacy. This paper aims to fill this gap.

2. Literature review

- As per Singh H (2020), According to this research, 76 percent of respondents stated it

is more convenient to use E-pharmacy than the traditional method of purchase. As projected, e-pharmacy could target 85 % of the chronic market and 40% of the acute market in flourishing e-commerce businesses. However, if not adequately regulated, it could be problematic in the future. As with the Pandemic situation, everything was shut down, the majority of brick-and-mortar medical stores remain locked down. This was the main reason many consumers had switched to buying medicines online out of fear of contracting the novel covid-19, and the lockdown presented both Chances and difficulties for the global e-pharmacy. The online pharmacy offers numerous advantages and the potential for growth in e-commerce, the Indian government must consider better regulation, which may be a blessing for both society and the pharmaceutical business in the next years.

- As per Md. Mahiuddin Sabbir, Mazaharul Islam, Samir das (2020) trustworthiness and health literacy are significant in adopting online pharmacy. The variable "perceived risk and personal innovativeness" were not significant enough in determining consumers' intention to adopt online pharmacy in Bangladesh. The neural network analysis offered additional confirmation of the SEM-derived findings.
- As per the research carried out by Sachin Kumar Phogat (2020), there were numerous independent variables that were associated with purchasing intention for different age groups, but the main two factors that were prevalent in all consumers (independent variable significantly associated with dependent variable) across all age groups were Fake/Counterfeit medicine and Information Security, indicating that no age group is willing to compromise on either. Additionally, their study found that people under the age of 35 had a favorable attitude toward medicine purchased through e-pharmacy, while those over that age were unsure whether they like to purchase medicine through e-pharmacy, are neither positive nor negative toward purchasing from e-pharmacy, but preferred to continue purchasing medicine through a retail chemist/offline channel.
- Research carried by Dr. Sridevi Maganti (2020) stated that due to the mobility limits imposed by lockdown and the requirement to maintain physical distance, the COVID-19 epidemic has necessitated a shift in thinking. As a result of the pandemic-induced lockdown, internet and e-commerce firms have grown in importance. E-pharmaceutical companies are also booming, as consumers realize that taking medications online is a safer way to avoid infection. Consumers benefit from an E-Pharmacy by obtaining a consistent supply of drugs, hand sanitizers, face masks, and other health care products in a secure and convenient manner. Recognizing the future potential of the online pharmaceutical market (post-COVID), large e-commerce companies such as Amazon and Reliance Retail had begun investing in the E-pharma industry. Due to the comprehensive value proposition offered by E-pharma companies, past experiences, and the shift to digital platforms as a result of COVID19, the online pharmaceutical business has significant potential in the next years. In India, the primary reason for the need for e-Pharmacy is unmet medical demand as a result of the country's expanding population and increased internet usage. As consumer behavior in India evolves, there is an increasing desire for convenient access to a varied assortment of goods at affordable prices.
- As per the Pilot survey of Physicians carried out by Arvind Kumar Yadav (2020), the results indicated around 91.76 percent of physicians were familiar with e-pharmacy, just 22.35 percent had ever utilized it. Approximately 89.41% of physicians have never asked patients to purchase medications from an e-pharmacy. Around 67.64 percent of physicians deemed electronic pharmacy to be ethical. 56.47 percent of physicians, on the other hand, believed that e-pharmacy is dangerous. Physicians must stay current on emerging technologies such as e-pharmacy, which is likely to become considerably more prevalent over the next few years.

They should use ethical and risk-free techniques to do this. In general, while choosing an online pharmacy, a balance should be maintained.

- Prof. Stafard Anthony (2020) stated that The internet pharmaceutical sector is expanding, and there are numerous prospects. Additionally, online pharmacies give significant benefits to users in India, particularly in the post-COVID-19 era. The only issue that the online pharmacy concept faces in the Indian setting is standardization, ethical business practices, and enough government regulation. Apart from that, the digital infrastructure and information technology environment are sufficient to promote the growth of an online pharmacy model. The post-COVID-19 environment had significantly increased consumers' chance of adopting online pharmacies in India.
- As per Economic times April 09, 2020- Online medical retailers such as Netmeds, 1mg, and PharmEasy, which have struggled to scale for over three years due to regulatory concerns, have seen an extraordinary rise in sales across cities during the Covid-19 crisis.
- The article cited by Business Standard March 26, 2020, stated that Despite labor constraints, E-pharmacies made optimal use of technology and supply chain efficiency to ensure seamless order fulfillment. Orders on the platforms increased by up to threefold their weekly average, with hand sanitizers and masks being the most popular products. Netmeds.com's founder and CEO, Pradeep Dadha, stated that his organization was working to ensure that consumers have an uninterrupted supply of preventive products. "In the last two weeks, the country has seen an extraordinary increase of over 1,400% in sanitation products and over 500% in disinfectants. This had put manufacturers under tremendous pressure. We are aggressively sourcing products from a variety of providers in order to meet demand," he added. Tanmay Saxena, 1mg's chief operating officer, stated that the company was experiencing an increase in demand as a result of COVID-19. "Some categories, such as chronic medications and immune boosters, as well as vital supplies such as sanitizers, masks, and gloves, were experiencing demand levels that are more than 7-8 times normal," he explained.

Research Objectives

Demand for E-pharma surges during Covid -19 however there has been little research done in the context of India. Increased traffic on digital platforms will be a huge opportunity for marketers to build visibility and generate revenue. This research paper attempts to compare usage of E-pharmacy before and after COVID-19 lockdown.

3. Research Methodology

3.1 Questionnaire Design

An online Google form questionnaire consisting of two sections namely descriptive information of the respondents and e-Pharmacy habits was prepared and the link was shared via social media platforms among respondents for data collection. Several multiple choices and Likert scale questions were included in the questionnaire with the purpose to measure the e-pharmacy habits of the respondents.

3.2 Data Collection

An online Google form questionnaire consisting of two sections namely descriptive information of the respondents and e-Pharmacy habits was prepared and the link was shared via social media platforms among respondents out of 200 respondents 185 valid responses were received from Vadodara and selected on the basis of non-probability convenience sampling. Respondents belonged to a population of students and employees of organizations and Employers too.

3.3 Hypothesis

H_{o1}: There is no significant difference between Gender and Online Medicine purchase.
H_{o2}: There is no significant difference between Age-groups and Online Medicine purchase
H_{o3}: There is no significant difference between Educational Qualification and Online Medicine purchase.
H_{o4}: There is no significant difference between Monthly Income and Online Medicine buying frequency

H_{05}: There is no significant difference between Online Medicine purchase frequency before and after lockdown

H_{06}: There is no significant difference between Reasons for buying medicine online and Age-groups.

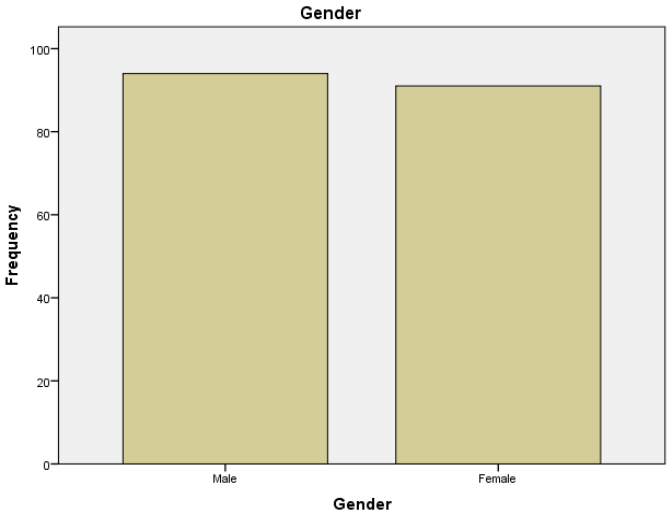
4. Data Analysis and Results

4.1 Sample Characteristics

A total of 185 people filled the questionnaire. Out of all respondents, 50.8 % were male and 49.8 % were female.

Table 1. Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	94	50.8	50.8	50.8
	Female	91	49.2	49.2	100.0
	Total	185	100.0	100.0	

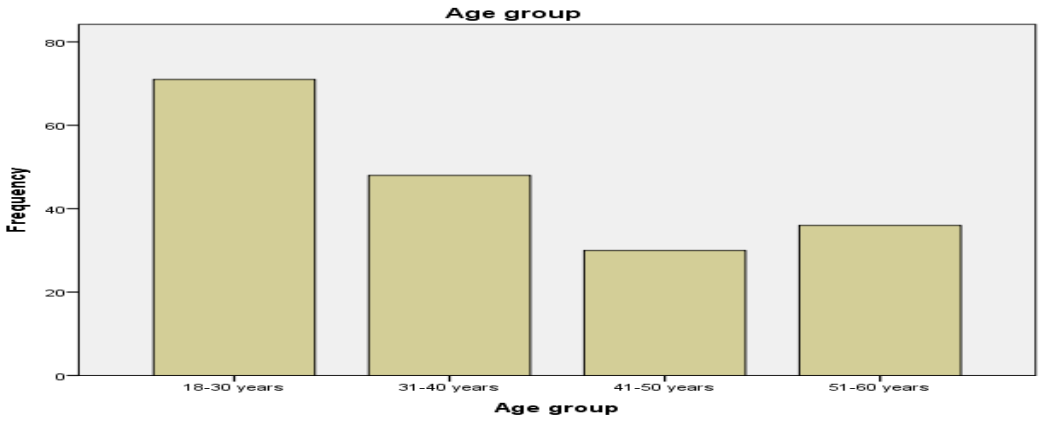


Graph 1 - Gender of Respondents

The sample spans all age groups, with the majority of participants (38.4 %) falling between the ages of 18 and 30. The other age groups are less substantial, with 25.9 % for those between the ages of 31 to 40, 16.2 % for those between the ages of 41 to 50, and 19.5% for the ages of 51 to 60, and none of the above 60 age.

Table 2- Age group of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-30 years	71	38.4	38.4	38.4
	31-40 years	48	25.9	25.9	64.3
	41-50 years	30	16.2	16.2	80.5
	51-60 years	36	19.5	19.5	100.0
	Total	185	100.0	100.0	

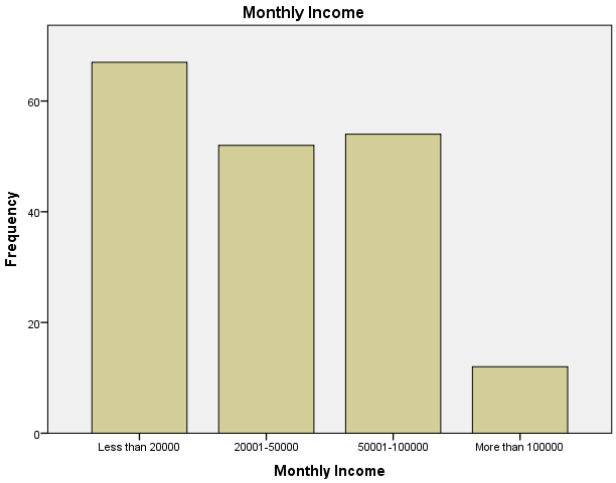


Graph 2 - Age group

The most important Demographic factor analyzed was the monthly income of participants. 32.6% of participants indicated that they earn less than INR 20,000 a month and only 6.5 % of participants indicated their monthly income was above INR 1,00,000.

Table 3 - Monthly Income of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 20000	67	36.2	36.2	36.2
	20001-50000	52	28.1	28.1	64.3
	50001-100000	54	29.2	29.2	93.5
	More than 100000	12	6.5	6.5	100.0
	Total	185	100.0	100.0	

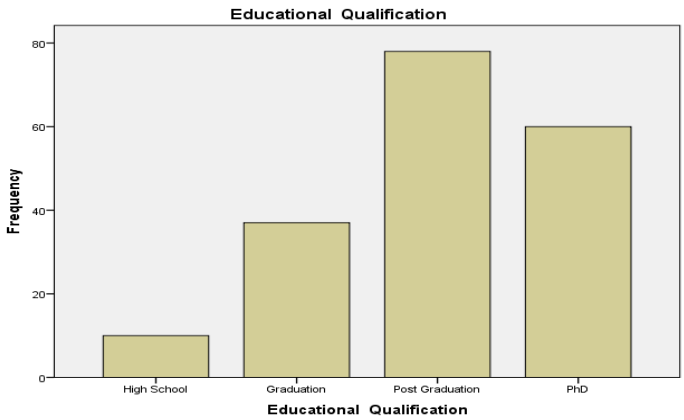


Graph 3 - Monthly Income of Respondents

The study's final demographic variable was education level. Participants were asked to select from a variety of educational options, including high school, graduation, post-graduation, and Ph.D. degree. With 42.2 % of all respondents indicating they had a Masters's degree.

Table 4 - Educational Qualification of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School	10	5.4	5.4	5.4
	Graduation	37	20.0	20.0	25.4
	Post Graduation	78	42.2	42.2	67.6
	PhD	60	32.4	32.4	100.0
	Total	185	100.0	100.0	



Graph 4 - Educational Qualification of Respondents

4.2 Sample Characteristics and Online medicine Purchase behavior

The researcher performed the Kruskal Wallis test to identify if there was any significant difference between gender and online medicine purchase. Table 6 represents the resulting p-value which is 0.034 which proves that there is a significant difference between gender and online purchase of medicine.

Hence H_{01} is rejected and the alternative hypothesis is accepted.

Table 5 - Gender of Respondents

Ranks			
	Gender	N	Mean Rank
Have you ever purchased Medicine online?	Male	94	100.06
	Female	91	85.71
	Total	185	

Table 6 - Kruskal Wallis test for Gender

Test Statistics	
	Have you ever purchased Medicine online?
Chi-Square	4.474
df	1
Asymp. Sig.	0.034

The researcher performed the Kruskal Wallis test to identify if there was any significant difference between age group and online medicine purchase. The results shows that there is a significant difference ($p = 0 < 0.05$) between age groups and purchase of medicine online. Table 8 shows the results. So H_{02} is rejected and the alternative is accepted.

Table 7- Age groups of Respondents and their medicine purchase online

Ranks			
	Age group	N	Mean Rank
Have you ever purchased Medicine online?	18-30 years	71	88.9
	31-40 years	48	76.69
	41-50 years	30	79
	51-60 years	36	134.5
	Total	185	

Table 8 - Kruskal Wallis test for Age group

Test Statistics	
	Have you ever purchased Medicine online?
Chi-Square	38.462
df	3
Asymp. Sig.	0

The researcher performed the Kruskal Wallis test to identify if there was any significant difference between educational Qualification and online medicine purchase. The results show that there is a significant difference ($p = 0 < 0.05$) between educational qualification and purchase of medicine online. Table 10 shows the results.

Table 9 - Educational Qualification and purchase of medicine online

Ranks			
	Educational Qualification	N	Mean Rank
Have you ever purchased Medicine online?	High School	10	69.75
	Graduation	37	117
	Post Graduation	78	109.6
	PhD	60	60.5
	Total	185	

Table 10 Kruskal Wallis Test Statistics Educational Qualification

Test Statistics	
	Have you ever purchased Medicine online?
Chi-Square	52.432
df	3
Asymp. Sig.	0

The researcher performed the Kruskal Wallis test to identify if there was any significant difference between Monthly Income and online medicine purchases. The results show that there is a significant difference ($p = 0.001 < 0.05$) between the monthly income of respondents and the purchase of medicine online in past. Table 12 shows the results.

Table 11- Monthly Income of respondents and their medicine purchase behavior

	Monthly Income	N	Mean Rank
Have you ever purchased Medicine online?	Less than 20000	67	84.8
	20001-50000	52	104.26
	50001-100000	54	83.11
	More than 100000	12	134.5
	Total	185	

Table 12 - Kruskal Wallis test for Monthly Income

	Have you ever purchased Medicine online?
Chi-Square	17.409
df	3
Asymp. Sig.	0.001

4.3 Online shopping Frequency before and after Pandemic

A t-test was done to examine if there is a significant difference between the frequency of online shopping of medicines before lockdown and the frequency of online medicine shopping after lockdown Table 11 shows the outcome of the t-test and proves that there is a difference between the frequency of buying medicine online before the pandemic and after the pandemic, ($p = <0 < 0.05$; $t = -12.42$). Hence, H_{05} can be dismissed, and the alternative receives acceptance.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Frequency of Buying medicines online before Lockdown	2.16	185	1.932	0.142
	Frequency of Buying medicines Online i.e. through E-pharmacy after lockdown	4.42	185	2.274	0.167

Table 13 Frequencies of Online medicine shopping before and after Covid -19

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Frequency of Buying medicines online before Covid Frequency of Buying medicines Online after Covid -19 outbreak	-2.265	2.48	0.182	-2.625	-1.905	-12.42	184	0

Table 14 t-test for frequency of online medicine shopping before and after the outbreak

4.4 Participants motivating factors to shop medicines Online

The researcher performed the Kruskal Wallis test to analyze the influence of age group on participants' motivation to shop medicine online. Table 15 shows the p values resulting from the statements regarding motivational factors considered to shop medicine online. The table does not show a p-value above 0.05 and therefore H_{06} is rejected and the alternative is accepted.

	[Fast]	[Convinient]	[Discounts]	[Products can be compared]	[More Informatio n]	[Quality]	[Doctor recommended]	[Privacy]	[User-Friendly applicatio n]	[Reviews and Ratings]
Chi-Square	54.388	35.839	17.541	30.133	25.119	30.368	46.457	29.463	44.749	69.924
df	3	3	3	3	3	3	3	3	3	3
Asymp. Sig.	0	0	0.001	0	0	0	0	0	0	0

Table 15 - Kruskal Wallis test, factors for online medicine shopping, and Age group.

5. Findings and Conclusion

The first hypothesis claims that there is no difference between Gender and Online Medicine purchase is rejected. This is due to fact that medicine purchase is mostly made offline by Males and since there was a switch to e -platform, Males were early adopters.

The second Hypothesis claims no significant difference between Age-groups and Online Medicine purchase is rejected. This result is not surprising since Covid-19 especially endangers elderly adults, and therefore concerns from this age group were expected also Majority of respondents are from age group 18-30 and they

are most techno-savvy and hence they prefer to shop medicines online.

The third hypothesis, which claims that there is no significant difference between Educational Qualification and Online Medicine purchase is rejected and the alternative is accepted. The results show that participants with higher education levels are more concerned and conscious than participants with lower education levels.

The fourth hypothesis, which states that there is no significant difference between Monthly Income and Online Medicine buying frequency is rejected and an alternative is accepted. One of the most important factors to influence online medicine shopping post-outbreak as a result of this study is "Discounts".

The fifth hypothesis, which asserts that there was no substantial difference between online medicine shopping frequency prior to and after the pandemic's emergence, was rejected. Both the mean value changes and the t-test results indicate that there is a substantial difference in the participants' online medicine buying frequency following the Covid-19 outbreak. This is most likely due to the numerous restrictions as well as stocking the medicines due to fear of contracting disease and lockdown policies that prevent people from shopping offline in the traditional manner.

The sixth hypothesis discovered that there is no significant relationship between age groups and reasons of online medicine purchase behaviors is rejected. This is consistent with the past research of Sachin Kumar Phogat (2020). However, according to this paper's finding convenience and privacy were the most influencing factor in adopting online pharmacy which contradicts Mazaharul Islam, Samir das (2020) findings that trust and Health literacy is significant in adopting Online pharmacy. This article discovered that there is a significant relationship between age groups and online medicine purchase behaviors. This is consistent with the past research of Sachin Kumar Phogat (2020). Also, the major age group was from 18- 30 and factors dominant are fast and "Ratings and review", this clearly shows that this age group does value reviews written by people, and based on that they make their purchase decision.

The research findings corroborate the evidence from the literature review, demonstrating an increase in online pharmacy consumption after the Covid- 19 outbreak all hypotheses were rejected indicating that adoption of E-pharmacy has increased post-Covid -19 outbreak. Value-adding services

This recent reflux has led to massive opportunities for many Online pharmacy giants to encash. It has created opportunities for mergers, acquisitions, and other Big brands like amazon starting the online pharmacy business and Tata acquiring 1 mg (e-pharmacy platform). This has also led to improvement in service delivery - Pharmeasy expresses 2 hours of medicine delivery along with other value-adding services like doctors consultation, monthly subscription for chronic diseases. E-pharmacy models enable the tracking and traceability of medicines, as well as the prevention of drug abuse and self-medication by addressing non-prescription drug use, tax evasion, and value-added services for consumer empowerment in healthcare, all of which are critical areas for national development. The study places a strong emphasis on the potential of the online pharmacy business and the factors that impact it.

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RECEIVER OPERATING CHARACTERISTIC CURVE ANALYSIS OF BMI AND PERCENTAGE BODY FAT IN WOMEN IN URBAN SLUMS OF MUMBAI, INDIA

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ABSTRACT

Asian Indians have high body fat at low BMI than other ethnic population. The purpose of this paper was to assess accuracy of BMI to correctly predict the body fat. Total 500 women from different slums of Mumbai were participated in the study. BMI and % BF were assessed by Body Impedance Analysis (BIA). Results showed that 64.5 % of normal weight women (BMI = 18.5- 22.99 kg/ m^2) showed higher percentage BF (>30%). Prevalence of generalized obesity was 44.8 % whereas abdominal obesity WC (≥80 cm) was 70.8%. Receiver Operating Characteristic Curve (ROC) analysis showed low sensitivity and specificity at conventional cut off value of BMI (25 kg/m^2) in identifying subjects with obesity. Based on the ROC curve, at BMI value of 23 kg/m^2 found the optimal sensitivity (91.52 %) and specificity (88.2 %). The misclassification rate was also found very low i.e. 9.2 % at BMI 21 kg/ m^2 compared to 33 % at BMI 25 kg/m². In the present study at low BMI, we found higher percentage of body fat in women and the prevalence of both generalized and abdominal obesity was also found high which indicate that immediate attention of specific interventions should be implemented to women in urban slum.

Keywords: *Body Mass index, Urban slums, Percent Body fat, Obesity, Mumbai.*

Introduction

According to World Health Organization global estimates (WHO), in 2016, more than 1.9 billion adults are overweight and 650 million are obese (WHO, Fact sheets, 2021). The prevalence of obesity nearly tripled between 1975 and 2016 globally. It has been estimated that Obesity is a key risk factor for non-communicable disease, including cardiovascular disease, hypertension, diabetes and cancer.

It has been forecasted that prevalence of obesity in India will increase very rapidly by 2040 (Luhar et al., 2020). According to National Family Health Survey (NFHS-4) 2015-2016, India is a facing problem of double burden of malnutrition due to poverty and rapid urbanization (IIPS, NFHS Survey-4). The prevalence of overweight/obesity among women of reproductive age has increased from 13% in 2005 - 21% for in 2016 (IIPS,NFHS Survey-4; Al Kibria et al. 2019; Shannawaz, 2018). Several studies have shown that the prevalence of obesity and overweight was higher in women compared to men (Deepa et al., 2009; Ramachandran et al., 2008).

Body Mass Index (BMI) is most commonly used and simple, low cost tool to measure obesity. However, it is not correct measure of obesity as it is estimated by considering both body fat and free mass (Deurenberg et al. 1991). In Asian Indians, BMI is not good tool to estimate obesity as they have lower BMI, excess body fat, abdominal adiposity and less lean mass compared to other ethnic population (Deurenberg-Yap et al. 2002; Deurenberg-Yap et al. 2000; Rush et al. 2009; Wang et al. 1994). Studies have shown that South Asian peoples are at higher risk for to develop obesity and obesity-related non-communicable diseases than White people (A. Misra & Khurana, 2011; Anoop Misra & Shrivastava, 2013). Therefore, assessing the body fat is an essential measurement of obesity in Asians. So it is important to assess accuracy of BMI to correctly predict the body fat and this is very crucial among women as they have relatively higher percent body fat (%BF) as compared with men. Specifically, in present study, we have studied women from the Mumbai slums as very few studies are conducted in the slum population. In the present study Receiver Operating Characteristic (ROC) curve analysis is used to propose a new cut-off limit for BMI for obesity among women in urban slums of Mumbai, India.

There are various highly validated instruments are available to measure body composition like Magnetic resonance imaging (MRI), Computed tomography, and dual energy X-ray absorptiometry (DEXA) etc. but they are costly and difficult to use at field setting. In the present study, Body Impedance Analysis (BIA)

is used. Compare to other techniques, BIA is convenient and less costly at field setting. It has been validated with other relevant techniques including total body water hydrodensitormetry, DEXA and air displacement plethysmography and it was found to be accurate and reliable (Meeuwsen et al., 2010; Vasudev et al., 2004; Wu et al., 2015).

Materials and Methods

The present study was cross sectional study carried out in Mumbai slums among married women aged 18 to 45 years. The ethical clearance was obtained by Inter System Biomedica Ethics committee (ISBEC), Mumbai.

Sample size

According to National Family Health Survey-4 (IIPS, NFHS Survey-4) report of Maharashtra on the prevalence of obesity among women was 23.4 %, so considering 5 % error in the estimation with 95 percent level of confidence was considered to determine the minimum sample size and on the basis of this the calculated sample size was 270. However, a large sample size (n = 500) was considered to make the results more reliable.

Sample design

From the 24 BMC wards of Mumbai, only those wards were listed which had above 40 percent slum population (Census 2011) and total 11 wards were found. From that, total 8 wards were selected by a lottery method. A list of slums was prepared within each ward. Three slums from individual ward were selected by simple random sampling. Women were contacted with the assistance of community Health workers of each slum and the purpose of the study was explained to them. From each slum 20-25 eligible women were taken by simple random sampling. Thus a total 500 samples that were qualified according to inclusion and exclusion criteria were selected after obtaining written the informed consent.

Inclusion and Exclusion Criteria

Married healthy women between age 18 to 45years were included (Self-reported) and women who were physically disabled , pregnant , lactating , have any non communicable diseases like cancer, CVD, diabetes, hypertension and any other illness like fever , cold, cough etc past 30 days were excluded (Self-reported).

Socioeconomic status was measured by using the Revised Kuppuswamy's scale, 2017 (Sharma, et al, 2017).

Assessment of BMI and percent body fat

All women were requested to wear light clothing and remove their footwear at the time of measurements. The weight (0.1 kg accuracy), BMI, and % BF of the women were measured using a multi –frequency, tetrapolar 8 point tactile electrode, InBody 120, BIA (made in South Korea). All measurements were performed after 20 minutes of rest prior to the study. As per the precautionary steps, women were told not to eat or exercise at least 2 hrs before the measurements, bladder should be empty, to remove all metallic ornamentals. Women were requested to wipe the thumb and palm of their hands and the bottom of their feet before testing. Instructions were given to women participants during measurements as per manual of InBody120, to stand upright for about 5 min before testing and then instructed to stand on machine such that the heels cover the rear sole of electrodes while the foot soles cover the front sole electrodes and then told to take the hand electrode in their hands such that the 4 fingers wrap the surface of the bottom hand electrode, and place the thumb on the oval electrode. During the measurement, it was ensured that the arms must not touch to the sides of their body and the thighs should not touch each other.

The Height parameter was measured without footwear using a Seca 213 stadiometer (near to 0.1 cm). Women were asked to stand in an erect position, to put their feet together, knees straight and to look straight. Waist measurements were measured using a calibrated and non-stretchable measuring tape. Tape was calibrated against a standard anthropometric rod (Accuracy of 0.1 cm).Waist measurement was taken in a horizontal plane at midpoint between lower rib cage and superior margin of iliac crest at the end normal expiration.

Definition and cut off: Generalized obesity was defined according to WHO recommendations

for Asian population (WHO, 2004 ; Pan and Yeh, 2008).

Underweight (BMI=< 18.5 kg/m^2), Normal weight (BMI = 18.5- 22.99 kg/m^2), Overweight (BMI = 23-24.99 kg/m^2), Obesity I (BMI = 25-29.99 kg/m^2), and Obesity II (BMI= ≥ kg/m^2).

And abdominal obesity was defined by WC >80 cm (for women) (WHO, 2008).

For, % BF of subjects was compared with cutoff value for desirable fat (≤30%) as it widely used by previous studies among Indian population (Bhansali et al., 2006; Dudeja et al., 2001; Anoop Misra et al., 2003; Singh et al., 2004; Vikram et al., 2003).

Statistical analysis

Statistical data was analyzed using SPSS for Windows, version 25.0. The mean and SD were calculated for continuous variables while categorical variables were presented as frequency and percentage. Fisher exact test was to calculate % body fat across BMI categories. One way analysis of variance (ANOVA) and post hoc Bonferroni test was used to examine differences in WC, Body fat mass, lean mass BMI , and % BF by age categories. Pearson's correlation coefficient (r) was conducted to determine the correlation of BMI with % BF. Receiver operating characteristics (ROC) curve analysis was carried out to find out Area Under Curve (AUC) and to determine the appropriate cut-offs of BMI for defining obesity taking the percentage of body fat as the standard. To check the predictive power of the cutoff points, their respective Positive Predictive Value (PPV), Negative Predictive Value (NPV) and misclassification rate were assessed using chi-square test. For all analyses, a p value of <0.05 was considered statistically significant.

Result

The present study included 500 subjects and the mean age of subjects was 33.60 ± 6.98. About fifty percent (49.6 %) women were studied secondary school and 65.8% were housewife. Majority of women were 68% Hindu, followed by Muslim (25.6%), Christian (2.4%) community.

Parameters	Age groups			Overall	Significance
	18-25	26-35	36-45		
BMI (kg/m$^{2)}$	21.74±4.79	24.34±4.63	25.38±4.84	24.41±4.86	0.00
Body fat (kg)	17.10±8.71	21.31±8.59	23.27±8.80	21.53±8.89	0.00
% Body Fat	32.53 ± 10.33	36.75 ± 8.49	39.05± 8.68	37.10±9.05	0.00
Lean mass (kg)	32.65±4.72	34.67±4.55	34.27±4.50	34.24±4.59	0.00
WaistCircumference	76.20±13.77	83.60±11.97	86.21±12.33	83.66±12.73	0.00

Table 1: Anthropometric and body composition with respect to age category

Table 1 show anthropometric and body composition of participants with respect to age category. The overall mean BMI and waist circumference was 24.41±4.86 and 83.66± 12.73 kg/m^2 respectively whereas mean lean mass, body fat mass and % BF were 34.24±4.59, 21.53 ±8.89 and 37.10±9.05 respectively. There were significant differences observed in all parameters with respect to age category. The mean of BMI, body fat, percent body fat and waist circumference was higher in the age category of 36-45 years compare to other two categories.

When a BMI of ≥ 25 kg/m^2 was applied as the cut-off level, 224 (44.8 %) women were found obese. This condition was significantly different when % BF was taken as the measurement of obesity. Based on percentage body fat cut off was ≥30, found that 389 (77.8%) women were obese. It means that the diagnosis by BMI underestimated around 35 percent women with obesity by %BF. The prevalence of abdominal obesity WC (≥80) was found to be 70.8%.

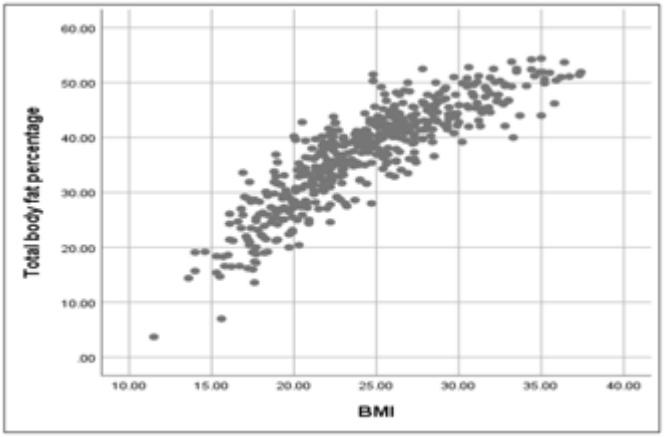


Fig. 1 Scatter plot showing distribution of BF % with respect BMI

BMI was found to be highly and significantly correlated with body fat percentage (r=0.875, P<0.001). Analysisat different age groups showed a highly significant correlation (P < 0.001) of BF% with BMI in all the age groups. **Figure 1** shows the scatter plot of relationship between BMI and % BF.

Table 2 shows that, 64.5 % of normal weight women (BMI = 18.5- 22.99 kg/m^2) showed higher % BF (>30%).The high % BF was also found among few 4.7 % of underweight subjects (< 18.50). Whereas as 94.1 % of overweight women (BMI 23-24.99 kg/m^2) and all obese women (BMI ≥ 25 kg/m2) had high % BF.

BMI Categories	Percent body fat <30 N (%)	Percent body fat ≥ 30 N (%)
Underweight (< 18.50 kg/m^2)	53 (94.6%)	3 (5.4%)
Normal Weight (18.50- 22.99 kg/m^2)	54 (35.5%)	98 (64.5%)
Overweight (23-24.99 kg/m^2)	4 (5.9%)	64 (94.1%)
Obesity (≥ 25 kg/m^2)	0	224 (100.0%)
Total	111 (29.2)	389 (70.8)
Fisher Exact test (p value)	270.334 (0.00)	

Table 2: Body fat per cent in different categories of BMI.

AUC and 95 % CI were calculated from the ROC analysis to determine optimal cut off and the overall accuracy of the BMI in screening obesity using as % BF reference standard. AUC was found to be 0. 958 (95 % CI 0.94-0.97) which is considered good fit in determining the subjects with body fat below and above 30%. The ROC curve analysis indicated that the BMI value 21 kg/m^2 as the cut off value for screening obesity with a sensitivity of 91.52 and specificity of 88.2 % **(Table 3)** and **(Figure 2)**.

BMI cut off	Sensitivity	Specificity	Positive predictor value (PPV)	Negative predictor value (NPV)	Miss classification rate
>20	96	75.67	93.36	86.59	8
>21	91.51	88.2	96.47	74.80	9.2
>22	83.29	90.99	97.00	60.84	15
>23	74.03	96.39	98.63	51.44	20.8
>24	67.35	99.09	99.61	46.41	25.6
>25	57.58	100	100	40.21	33

Table 3: Test characteristics (%) of BMI as a measure of obesity in study subjects considering % BF as standard (% BF>30)

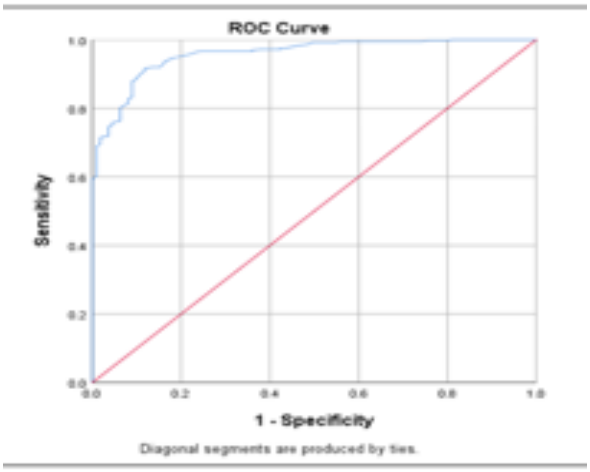


Fig. 2 Receiving operating characteristic curve to determine the appropriate cut-off values of BMI (kg/m²) while taking percentage body fat as standard.

ROC curve for the conventional cut-off of BMI 25 kg/m², in defining obesity, found low sensitivity (57.58 %) while specificity was high (100%) whereas, at a BMI of 23 kg/ m² (WHO Health Action cut-off point for Asian populations), the sensitivity was low (74.03 %/) whereas specificity was high (96.39 %) and misclassification rate was found to be 20.8. When a BMI of 21 kg/m^2 was used as the cut-off point for obesity, the specificity was decreased by 11.8 % but the sensitivity was increased by substantially by 33.3 % compared to BMI 25 kg/m². The misclassification rate was found very low (9.2 %) at BMI 21 kg/m^2 compared to 33 % at BMI 25 kg/m².

Discussion

In the present study , the mean of BMI 24.41±4.86 kg/m^{2}and body fat percent 37.10±9.05 of women was found higher than those reported in other Indian population studies (Gadekar et al. 2020; Misra et al. 2001; Misra et al. 2019; Taing et al. 2017). A study by Taing et al (2017) reported that mean BMI and percent body fat was 22.7 kg/m^{2}and 32% respectively among women age group of 30-69 years. Similarly, a study conducted among adult females in a rural community of North India and they found Mean BMI and percentage body fat 23.3 kg/m2 kg/m^{2}and 33.6 % respectively (Misra et al. 2019). Another study done among healthy women found mean value of percent BF was 38.0 % which is almost similar to our present study (Joseph et al., 2011). Whereas a study by Bhardwaj et al (2011) in urban population in north India, found higher body fat percentage. BMI and percent body fat was found to be 40.8 % and 25 kg/m^2 respectively among women. This difference might be due to the techniques which were used to measure the percent body fat such as predictive equations formula, skin fold measurements etc.

We found positive correlation between BMI and % BF (r=0.875, P<0.001) in the study which is similar to other studies (Misra et al. 2001; Misra et al. 2019; Taing et al. 2017). A study performed among adult females in a rural community of North India and another study done among young adults of Sri Lanka, found a strong and significant positive correlation between BMI and percent BF (r = 0.85, p= 0.001) and (r = 0.82, p= 0.001) respectively (Misra et al.2019 ; Ranasinghe et al. 2013).

ROC curve was used to determine the appropriate cut-off value of the BMI while taking %BF as the standard >30% in women. In our study, we found a higher percentage of body fat at low BMI levels. Based on ROC curve analysis, a BMI cut-off point of 21 kg/ kg/m^2 revealed optimal sensitivity (91.52 %) and specificity (88.2 %) as well as less misclassification (9.2 %) in assessing obesity. This is considerably lower than the WHO Health Action cut-off point (BMI ≥ 23 kg/m2) and the WHO recommended standard cut-off point for Asian for defining obesity (BMI ≥ 25 kg/m^2). This finding is consistent with a study by Shaikh, et al (Shaikh et al., 2016) carried out in rural area of northwest Bangladesh among women. In their study body fat percent was measured using two methods - BIA and skin-fold thickness and their analysis of ROC curve showed that at BMI of 21.0 kg/m^2 had maximum the sensitivity and specificity in identifying subjects with high % body fat, by using both methods(Shaikh et al., 2016).

A study by Dudeja (2001) also observed a higher percentage of body fat among women of a north Indian population at a comparatively low BMI i.e. at 19 kg/m^2 level had the optimal specificity, sensitivity and less misclassification rate in identification of subjects with overweight based on percentage BF as standard (>30%) (Dudeja et al., 2001)(Dudeja et al. 2001)whereas a study by Bhansali et al (2006), carried out among

women from North India, their ROC results showed that slightly higher cut off point of BMI 23.9 kg/m^2 to identify subjects with overweight considering a cut off value of the percentage BF >30% as standard.

Some studies also analysed the cut-off value of the BMI among population who had dyslipidemia and type 2 diabetes based on percentage of body fat. A study among dyslipidemic Asian Indians women found that when the BMI cut off value for obesity was lowered to 23 kg/m^2, the sensitivity, specificity, and positive predictive value increased and overall misclassification and negative predictive value decreased based on percent body fat cut off 30% (Misra et al. 2003). Similarly, another study conducted in an Asian type 2 diabetes females, ROC curve analysis showed that with percentage BF was taken as the standard for determining obesity, sensitivity and specificity of BMI at 23 kg/m^2 sensitivity increased and overall misclassification rate was decreased (Vikram et al., 2003). A study by Singh et al (2004), revealed a cut off levels of Body Mass Index (BMI) among type 2 diabetes considering percentage body fat (%BF) as standard and their ROC curve analysis of the data showed that at cut off value of BMI 22.3 kg/m^2 had the optimal sensitivity and specificity, and less misclassification rate.

Our study showed that 21 kg/m^2 BMI level is considerably lower than the WHO suggested standard cut-off point of BMI 25 kg/m^2. Uniqueness of our current study involves data from Mumbai slums population where few studies have reported earlier. Also, further studies are needed to assess association of BMI, Percent Body fat with biomarkers of non-communicable disease for more valid results.

We also recommended BIA is the most practical, simple and feasible method to obtain quick estimation of body composition in resource-limited settings.

Conclusion

Based on study results, conventional BMI cut-offs of 25 kg/m^2 to identify obesity had low sensitivity and high misclassification rate taking percent body fat as standard in women. We also found very high prevalence of generalized obesity and abdominal obesity among this slum population. This shows that require immediate attention in terms of prevention. Therefore, intervention programs such as nutrition and physical activity related education should be designed and implemented in such economically deprived populations.

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Conflict of Interest

Authors have no conflict of interest.

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A STUDY ON 'INFLUENCE OF BRANDINGONTHE BUYINGDECISION-MAKING PROCESS OF INDUSTRIAL PRODUCTS'

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ABSTRACT

There has been a lot of research carried out on how customers' perception of the value of the product affects the decision of purchase. This article aims at analysing various aspects related to the buying of branded products. An effort has been taken to understand the essential factors which result in buying premium products as well as the approach for the sellers to make customers buy premium products, effectively getting a maximum share of the business. In this article, the researcher has discussed the pricing related to the Value Equivalence line and its effect on market share. This study is based on thereview of literature and also empirical analysis based on sample survey.Literature review consists of the study of topics in books and research papers related to the perception of customers while making decision about buying a particular product. It revolves around the perception of the customers regarding the value provided by the branded products. Brands help in decision making of buying industrial products. This is shown through the survey made with the respondents who are the users of industrial products.

Keywords: *Customer perception, Differentiation, Value Equivalence Line (VEL), Brand Value, Customer Engagement*

1. Introduction

It is observed that while selling industrial products, there is severe competition amongst the manufacturers, irrespective of whether the products are used by original equipment manufacturers (OEMs) or direct industrial users. Every competitor tries to create the best impression and opinion in customers' mind with regards to the quality and service of own products. This effort results in a major market share and also repeat purchases from users. The purpose of this paper is to analyse the effect of the brand of the product on the perception of customers and the price they are willing to pay(Blackettand Brymer, 2004). The industrial products mainly consist of machineries, raw materials, finished and semi-finished components, tools and accessories, and also consumable items. While buying these products, the users evaluate the importance of the product giving due weightage to the brand. Whenever a customer takes into consideration certain make of the products, the brand usually creates a good impression, and this results in the satisfaction of buying. The customers are high concerned about the quality of the products and reliable performance. Branded products provide desired high quality and consistency in a good performance. The users would like to have a trouble-free operation, thus resulting in their profitability (Swaminathan, Sorescu, Steenkamp,O'Guinn and Schmitt, 2020).

2. Objectives of Study

To identify the factors influencing the buying behaviour of consumers while purchasing industrial products
To examine the recent development in branding and strategic management
To analyse the effect of customer perception on buying branded industrial products

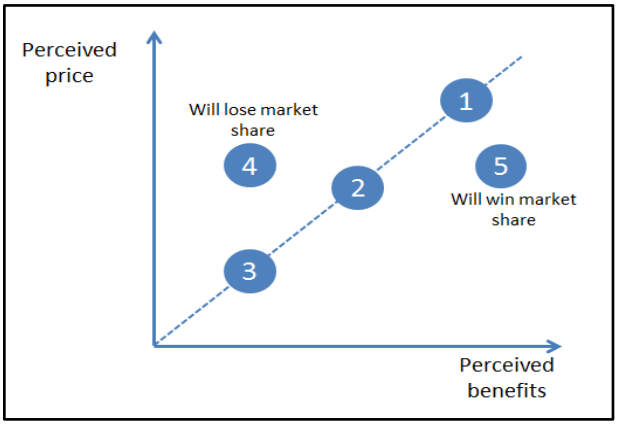
3. Research Methodology

The present study includes both primary as well as secondary data. The primary data is the responses of fifty customers. It is analysed and interpreted with the help of scientific testing. In addition, the valuable insights from national/international reports, databases, journals, magazines and books are sourced as secondary data. Hence, both qualitative and quantitative approached are integrated in the present study.

4. Literature Review

A graphical presentation by B2B International Publication[1] below shows the relationship between perceived value and perceived benefits and how it affects the market share It

shows the importance of Value equivalence Line (VEL)



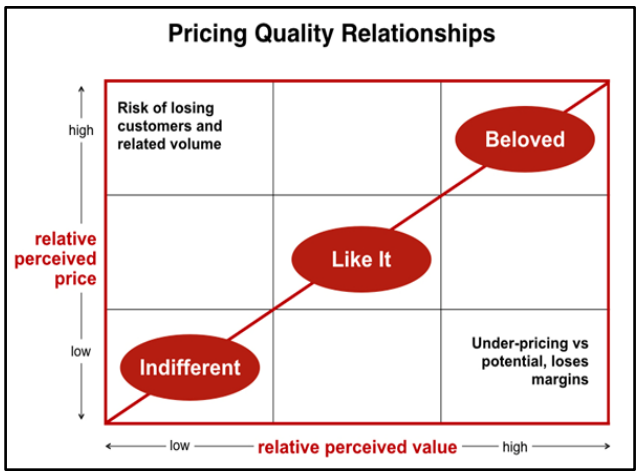
The brand is considered to possess high price as against the benefits perceived (Brand 4)in case it is far away from the line and will make people avoid the related product and is likely to drop market share. However, if the benefits are considered to be higher against the price offered, as per Brand 5, it will be seen appear on the right section of the VEL, thuswill result in attracting more customers. In this case, the market share will be substantial.As time goes, the brand extending lower value (as per Brand no. 4) will exit from the existing market or will be compelled to reciprocate by way of reducing price or enhancing its benefits perceived (Schnebelen and Bruhn, 2018). Eventually, if it is observed that the brand charges relatively lower prices as compared to the benefits perceived,it is most likely to gain market share, because it provides a high perception of value for money. Similarly, the brand owner can exercise a strategic policy to increase prices so that it comes closer to the vale equivalence line (Brand no. 5) Thus, it is observed that the products with high perceived value and can get maximum market share.

Benjamin Klein (2008) has discussed the mindset of customers to pay a high price for branded products, in his article, related to the products made in the Soviet Union. Customers pay a higher price for a product having a brand name as compared to those which do not belong to the established brands, he pointed out. It makes them pay extra because they consider the particular product has been advertised and promoted. The companies with a brand name have to ensure high quality. Customers buying the branded products pay for something extra offered. Due to this expectation, the company needs to take adequate precaution and efforts to keep up to its reputation, he summarised. The assurance about the high quality projected by way of advertisement and promotion and the past performance makes the customer value a particular brand and buy the product.

Chris Fulmer (2020) discussed in his article, premium pricing strategy which will be helpful to small businesses in avoiding price pressure and competitor comparisons, particularly during coronavirus situations. He added that customers are keen to know that what they buy is the best option available and are more likely to buy from purpose-driven brands. Thus, they want value and quality. The article further states that the foundation of premium pricing begins with differentiation. It highlights the concept that premium products and services must deliver functional, technical, and emotional benefits. The article finally emphasizes that people want products that make them feel safer and smarter and also from purpose-driven companies, that believe in more than just making sales.

As noticed by Jane Leighton and Geoff Bird, (2012) customers normally use logos, to find the brand. The visual effect of a logo on the packing generates a clear perception of the quality assurance provided by the brand. This spotlights the concept of the uniqueness of the branded product by way of its positioning and differentiation against competitors.

The appropriate pricing strategy can be used in securing customers by way of utilizing the position of the brand and its value. This can be displayed in a graphical presentation as below:



(Price-Quality Relationships)

The above figure indicates that when relative perceived price and value are high, the situation states that customers are prepared to pay the premium price based on the high perceived quality and associated high value. Especially, for industrial products, the lower price indicates the lower quality and value perception in users' minds. This gives an impression that the cheaper and unbranded product is cutting corners during the process and thus likely to offer a low-quality product. It is observed that customers pay a high price for the product with high perceived value.The Illustration below in by Juliann Grant, shows the role of B2B brands, mostly applicable to industrial products.



(Role of Brands)

From the above figure, we find that the brand of industrial product has eight distinct functions which result in having presence in the market for a long time. By using the method of differentiation and creating brand loyalty, substantial share of business is possible to achieve, thus helping the company to become a market leader. By creating Brand image and preferences in customers mind, price premium is possible to get, thus increasing sales. Finally, brand loyalty is established which helps in securing future business over a long run.

Mónica Gómez-Suárez, et al. (2017), in their article discussed in detail customer-brand relationship in the marketing 3.0 era, i.e., products to customers to human spirit concept, based on the literature review. It values the mind and heart of a customer while marketing.In this concept, brands have a role more than just product identifiers. It covers the activity of addressing to social, economic and also environmental issues. By this way, the brands have a firm engagement with customers. They have discussed two main aspects with regards to customer-brand relationship, i.e brand love and customer engagement. Brand love is passionate emotional attachment of customers for a particular trade name. This is developed based on the positive experience of customers, sometimes customer delight offered by the brand. Customerengagement is focused on interactions between the manufacturer and customers. This becomes stronger as and when customer receives prompt and positive responses from the firms. It is related to addressing complaints and incorporating valuable suggestions given by customers. It results in customer loyalty.

In his article, Nigel Hollis(2013)explained how brand influences purchase decision. Brands do serve as important signals of quality, meaning, and value, but on a day-to-day basis, people rarely invest much time and thought in them. Whenever the customers have to decide between alternative options, the brands are vitally important. Ultimate goal of the sellers is to influence buying decisions. This can be achieved by positioning the products to stand out from the crowd. Differentiation is the key to impress upon the customer about the attributes of the product, which effectively results in his willingness to pay the premium price.

As per the study conducted by Tom Blackett and Chuck Brymer, (2004) by Oxford American Dictionary (1980), a Brand as a noun, is a trademark, goods of a particular value. It highlights the "Impression"of the product. Leading brands display five distinctive traits, viz. consistency in promised delivery, superior products and processes, unique product positioning and feedback of a customer, consistency of internal and external commitment of the brand, and the ability to stay relevant, as per Chuck Brymer. A particular brand stands out amongst the rivals based above qualities and thus results in high perception in the minds of buyers. It is learned

that when the customers have a choice of various brands, it is the perception of the customers based on the distinctive positioning offered by a particular brand of product, which helps customer to go for it.

5. Data Analysis and Interpretation

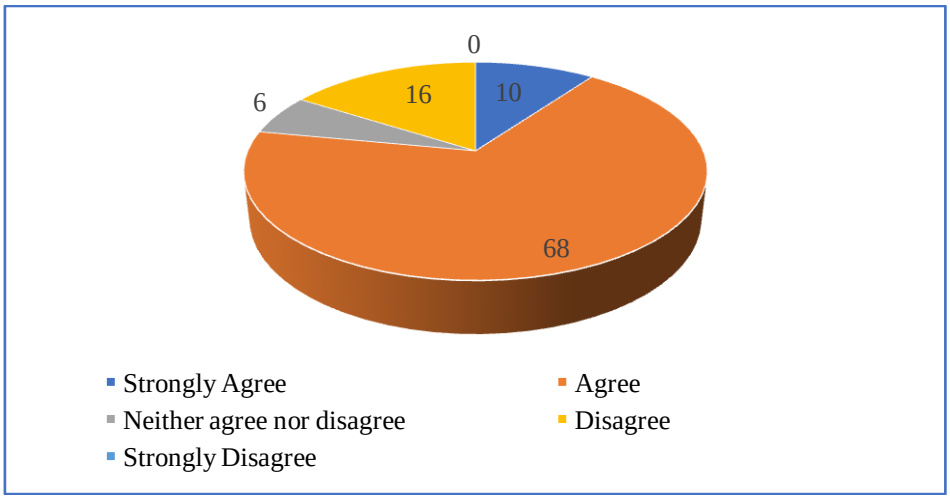
In order to assess the influence of Brands of buying of the product, a sample survey was conducted with 50 customers all over India. Random selection method was used based on available data of customers, manufacturing different products.

Table1: Frequency Distribution of respondents with responses to statement "The brand of the product is helpful in the decision of buying products."

The frequency distribution of respondents according to their responses along with itspiechart is as given below.

Table 1

The Brand of the product is helpful in the decision of buying products.	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
Frequency	5	34	3	8	0	50
%	10.0	68.0	6.0	16.0	0.0	100.0



Frequency Distribution %

Summary: 10% respondents strongly agree to the statement; 68% agree to the statement; 6% neither agree nor disagree; 16% disagree & 0% strongly disagree.

The agreement to the statement is (10% + 68%) 78% & disagreement to the statement is (16 + 0) 16%.

Hypotheses

H0: Brand of the product has not significant influence on buying decision of industrial product.

Ha: Brand of the product has significant influence on buying decision of industrial product.

The parameter of interest in the hypothesis is proportion of respondents with agreement to the statement "The brand of the product is helpful in the decision of buying products" in the sample & using sample proportion it would be decided whether the proportion is adequate or not that is whether it is significantly greater than 50% or not. Hence significant result would imply that the population proportion under consideration is adequate that is greater than 50%. Since the parameter of interest is proportion; to test the hypothesis, the test used is z test for proportions. Here hypothetical value of proportion is taken as 50% & sample size, n =50.

Test statistics:

$$Z = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

Where $\hat{p}$ = sample proportion, p_0 = hypothetical value decided by researcher (here it is 50% that is 0.50), n = sample size = 50

Calculation Table

Question	Frequency (Agree + Strongly Agree)	Proportion	Z Statistics	P value	Significance
The brand of the product is helpful in the decision of buying products	39	0.78	3.96	0.0000	Significant

Result

Since p value is less than 0.05, the level of significance; the result is significant.

Hence community is accepting that "The brand of the product is helpful in the decision of buying products".

Hence the hypothesis is accepted: The brand of the product has significant influence on buying decision of industrial product.

The implications of Study

The responsible officials of manufacturing organisation need to put in extensive efforts to provide proper training to the sales personnel so that they project a high image of the brand of the product and develop confidence while interacting with their customers. They need to assign a specific budget for advertising in the trade magazines and periodicals so that the repeated appearance of company's brand so that the customers remember it well. By providing prompt response to the queries of customers, either regarding the product or the service, the customers build up high perception of the product and its brand. This results in repeat purchase and minimises the chances of deviation of customers to the alternate suppliers.

6. Findings of Study

It is the perception of customers about the high value offered by the branded product, which results in the premium price. Different brands try to influence customers.

While choosingthe available brands in the market, they look for different attributes which emphasize the value of the brand and hence result in selecting the brand even if they have to pay higher price. In such a situation, a customer gets a feeling that a high price is worth paying to the high-value product without any regret.

The differentiation is the key to establishing the brand against competitors. This can be done by way of displaying various attributes, such as durability, excellent after-sales service, product training, good network of distribution channels, and providing custom made solutions.

The brand value is established over a period. This is based on the factors such as the long history of the supply in the market, efforts on the sales promotion to project the usage and attributes of the products, and merits over the other brands. By offering value, long-term loyalty can be established in customers' minds thus establishing the selling company as a market leader and fetches major market share.

The Loyalty takes time to get established. By way of providing the products with consistently high quality and offering timely supply without interruption, as well as providing solutions to their problems by offering suitable products, the customers are willing to buy a product of a particular brand repeatedly for a long period. Based on satisfactory past performance of the product, a seller can charge a premium price.

The industrial products are selected based on certain technical parameters based on the applications. Sometimes, stringent international specifications are followed while selecting the product. In such situations, customers do not mind paying a higher price to the specified products. The buyer does not want to compromise on the quality standard.

7. Conclusion

The leading brands reflect distinctive traits, which result in customer loyalty. To establish as a leading brand, there is a huge effort and backup provided by the team of the supplier. This is achieved by continuous development in the product features and also optimization of

inputs and flowless manufacturing processes. These attributes are continuously monitored by the leaders in the manufacturing team so that customer gets the best product desired over a long period. Price and Perception of the value of the product are closely related to the brand of the product.The customer is the king of the market. He/she is the prime source of revenue. It is imperative to understand the perceptions, likes and dislikes, preferences and priorities of customers and then prepare the business policies accordingly. Quality, durability, trust, timely service, customer centricity, post-sales service, extensive support and healthy human communication make the buying experiences pleasant and memorable. All of these create win-win situations for firms, vendors, retailers and others in the long term.

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