St. Xavier's College, Jaipur

About the College

Jesuits came to Jaipur in 1941, the 400th anniversary year of St. Francis Xavier's arrival to India, at the invitation of the Ajmer Bishop and Mirza Ismail, the then prime minister of Jaipur, to start a school. The school started in 1945 is today known as St. Xavier's School. The Jaipur Xavier Educational Association (JXEA), a trust managed by the Jesuits, was established in 1950 to give organizational support to the school. To carry forward the venture of promoting education and training in Rajasthan, in 2006 the Xavier Vocational Institute (XVI) was started in Jaipur. Its aim was to give vocational training to the economically poorer sections of society. The next step in this direction was the launching of the Higher Education Program. In 2010, the JXEA, in collaboration with the Xavier Alumni and the well wishers of Jaipur, started the St. Xavier's College, Jaipur, affiliated to the University of Rajasthan. It is established and maintained by the members of the Delhi Province of the Society of Jesus.

St. Xavier's College envisions the formation of the whole person. It aims to train young men and women who would grow up as creative leaders and responsible citizens, committed to the service of the people. Every effort is made to see that the students become intellectually equipped, morally upright, socially committed and spiritually awakened to God's presence in the world.

St. Xavier's College reaches out to all without any distinction of caste or creed. Situated in an ancient city, rooted in tradition and resistant to any radical change in the existing socio-cultural structures, it feels called to work for the transformation of society so as to bring about a cultural emancipation of the youth by means of higher education. The college's vision prompts it to enter into a creative dialogue with the local culture in order to bring about social and cultural liberation. It seeks to form young men and women who are committed to the establishment of a just and caring social order.

About the Journal

This journal is dedicated to the cause of research that is interdisciplinary in nature. All knowledge needs to contribute to a confluence of new and innovative thought. A multi-disciplinary approach has many advantages as it offers a holistic view and together all disciplines facilitate a more comprehensive understanding. *Impetus* is an endeavour to develop such a composite image.

Published at :
St. Xavier's College, Hathroi Fort Road, Jaipur, Rajasthan, India

ISSN 2278-0254

Volume X • August 2021

IMPETUS

– Xavier's Interdisciplinary Research Journal

ST XAVIER'S COLLEGE JAIPUR

Competence, Character, Compassion

St. Xavier's College, Jaipur

www.stxaviersjaipur.org

For inquiries, subscription and contributions, please write to:
The Editor
Impetus – Xavier's Interdisciplinary Research Journal
St. Xavier's College, Hathroi Fort Road, Jaipur, Rajasthan, India
Phone: 0141-2370296 E-mail editorimpetus@stxaviersjaipur.org

GUIDELINES FOR CONTRIBUTORS

CONTENT AND LENGTH OF MANUSCRIPTS

1. The editor welcomes original papers from researchers, provided they fall within the scope of *Impetus*. Papers should be concise, preferably not more than 12 pages in length.
2. Papers should contain original work that has not been published previously and is not under consideration for publication elsewhere. Plagiarism will be strictly monitored.
3. It is preferable for papers to be submitted electronically, saved as MS WORD file to editor at: **editorimpetusxvr@gmail.com**

PREPARATION OF MANUSCRIPTS

1. *Impetus* welcomes a variety of papers/articles: empirical studies, review papers, analytical papers — and other research works.
2. Ideally, there should be a cover page that gives the title of the manuscript, the name, the affiliation, as well as the email and full postal addresses of the authors. Correspondence will be entered into with the author named first unless otherwise specified.
3. Authors should not identify themselves, directly or indirectly, in the text following the cover page.
4. Materials taken from external sources must be acknowledged by appropriate citation. Literature citation should be uniform in style in the text and references. References should ideally be in the MLA style, with author's last name and page number, in the text and an alphabetical list of works cited at the end of the paper.
5. Articles/Papers should follow A4 size MS Word format, 12 points, times new roman, with 1" margin.

SUBMISSION TO THE EDITOR
Impetus – Xavier's Interdisciplinary Research Journal
St. Xavier's College, Jaipur
Email: editorimpetusxvr@gmail.com

FOREWORD

Human history is replete with events that have changed the course of our dialogues and debates. Our negotiations have evolved with each event, that has impacted our thought processes and perceptions, opening up new ways to match up newer challenges. As we take into account our past, we realize that wars divide but ironically disasters like Pandemics unite the world through a common thread of suffering, humanity and empathy. Covid -19 is one such unprecedented event, in near history, that has affected lives on a global scale. It has changed and pulled us (individuals and nations) back from the unreasonable haste with which we were advancing, accumulating negativity, unempathetic attitudes, ingratitude, carelessness in all that we do.

The pandemic has shifted the focus from only achievements towards the possibilities and means of achieving, in all walks of life. The scenario is asking for a perfect amalgamation of the old with the new, of tradition with technology, of success with sharing, of leisure with responsibilities, where everyone, be it from familial roles (housewives, husbands, grandparents), or the professional ones : doctors, teachers, businessmen, politicians or policemen (the list goes on to cover each and every segment of society), have to deconstruct their conventional, static and over the time narrowed down roles and, reconstruct themselves into more dynamic roles which are inclusive and in harmony with the contemporary crisis.

The two-day conference, **Dimensions of a Pandemic: The Covid-'19 Crisis**, was a well thought academic endeavour of St. Xavier's College, Jaipur to deliberate and ponder upon the thick darkness that human existence is facing right now as a pandemic and the bright flame that can be ignited through and through human spirit and human resilience alone.

The conference aimed to address and assess the challenges and opportunities relating the Covid-19 Pandemic and worked around the central idea of generating positive resolutions after understanding, exploring, and assembling the variegated researches in different disciplines.

The current issue of Impetus is an outcome of our second ICSSR(Indian Council of Social Science Research) sponsored International Conference. This volume incorporates selective papers from the different dimensions of pandemic relating to Commerce, Management, Economics, Political Science, Computer Science, English Literature and Psychology. We hope you find the articles interesting and useful to read and that you may even consider contributing an article yourself in the near future.

Dr. Ekta Puri
Chief Editor

August 2021

ISSN 2278-0254

Publisher
Rev Fr Dr A Rex Angelo, SJ
Principal
St Xavier's College
Jaipur

Editor
Dr Ekta Puri
St Xavier's College
Jaipur

Subscription
Impetus is published once a year
Annual subscription: Rs 500/-

Printed at
Classified Printers
Jaipur

CONTENTS

ARTICLES **Page No.**

A STUDY ON THE EFFECTS OF ECONOMIC SLOWDOWN IN INDIA

Venus Ghelot
Research Scholar, Department of Management, Jai Narain Vyas University, Jodhpur (Raj)

Abstract

The paper discusses the economic slowdown of India. Furthermore, the present research paper discusses the various causes of the Economic Slowdown and their effects on different sectors. The whole paper covers the last few years' slowdown in our country. Not even a single sector is being untouched by this slowdown. Demonetization and GST are considered the main causes of it, because after demonetization the whole country faced a tremendous economic slowdown. Our government may not accept that there has been an economic slowdown, but the reality remains and the need is to take effective measures.

Keywords: *Economic slowdown, GDP, GST, Demonetization and India.*

Meaning: To understand the whole concept of the economic slowdown in our country, one needs to understand the meaning of economic slowdown. In general, an economic slowdown occurs when the rate of economic growth slows in an economy. Countries usually measure economic growth in terms of Gross Domestic Product (GDP), which is the total value of goods and services produced in an economy during a specific period of time.

In other words, the meaning of economic slowdown is a situation in which GDP growth slows but does not decline. It is a period of slow economic growth, especially one that follows a period of robust growth. Unlike recession, economic growth during a slowdown is not necessarily negative. For example, a country whose GDP has experienced 3 percent, 3.3 percent and 3.5 percent growth for three consecutive quarters, but then sees growth of 3.51 percent and 3.52 percent is not in recession but experiencing slowdown.

Measuring Changes in GDP: The rate of economic growth or decline is calculated by determining the percentage change in GDP from one period to another. i.e. the value of a country's GDP in the second quarter of this year may have increased 2% from the value of the first-quarter GDP. On the other hand, if GDP rose only 1.5% between the second quarter and the third quarter, we can say that the economy is slowing down because it is not growing as fast as it should or was growing earlier.

The Indian economy recorded the highest growth rates of the world at 8.2 percent in FY 16-17 & 7.2 percent in FY 17-18. Then in FY 18-19, it was recorded at 6.8 percent. After being celebrated as the fastest growing economy in the world for two years, the news of the economic slowdown surprised many and was not welcomed by the majority. With the growth rate falling to 4.5 percent in the second quarter of FY20, the lowest since 2012, none could deny the economic slowdown that the Indian economy was facing.

Major causes of economic slowdown in India: Not a single factor is responsible for the slowdown in our country but there are so many other factors that are responsible for it. Among all the factors, Demonetization is the most important one. The following factors are discussed below:-

i. **The Effect of Demonetization:** Demonetization is considered one of the major causes of the Indian economic slowdown. There is a broad slowdown across the entire value chain of the demand and supply. Thus, what we have is a situation wherein cash has dried up leading to a slowdown in the economy. The main reason for the present situation is a lack of planning and poor implementation of Demonetization.

ii. **Collapse in Private Consumption and Investment Freeze Leading to Double Whammy:** Private consumption has taken a beating due to Demonetization as consumers suddenly prefer to hoard cash or keep it in the bank instead of spending on consumer goods. Moreover, demand has also collapsed in the rural areas as the entire rural economy runs on cash and Demonetization led to the loss of jobs as well as incomes thereby squeezing the rural consumer who now prefers to wait and watch as well as postpone consumption except that of essential goods and services.

iii. **Rollout of GST:** GST (Good and Service Tax) is another big reason for the slowdown in India. It hampered the small businesses by forcing them to withhold inventory until they migrate to the GSTN or the GST Network and become compliant with numerous rules and regulations that are part of this tax.

iv. **Global Slowdown:** Another important factor is that there is also a global economic slowdown going on simultaneously and given the fact that India is a net commodity exporter, there has been a slump in the volumes of exports. The global slowdown has also been accompanied by a retreat of globalization which has resulted in FDI or Foreign Direct investment being only in the areas of speculative finance and distressed assets purchases rather than into investments that help the Real Economy.

v. **Retreat of Globalization:** Hence, what the slowdown means for professionals and fresh graduates is that they would be finding it harder to land jobs as well as see their salaries rise on an annual basis. In addition, the policies of the Trump Administration have contributed to a decline in the number of students and professionals going to the United States and added to this, Brexit uncertainties have compounded the situation.

vi. **Tight Monetary & Fiscal Policies:** The monetary policy has been focused on inflation control which has ensured hard interest rates since 2016-17. The fiscal deficit of both the State and Center government has been high.

vii. **Farmer's Empty Pockets:** The continued surpassing of Non-food inflation of food-inflation in the last two years has led to income transfers from rural to urban areas. Farm income might increase from the government's income transfer scheme. The increase in prices of food would boost the terms of trade which could make things better in the second half of the fiscal year. It looks as though that the combined effect of all these factors means that the Indian Economy is likely to remain in the doldrums for sometime to come. As a response to the crisis, the government took a financial aid of Rs. 1.76 lac crore from RBI but it was never made known to the public how the funds will be utilized to restructure the economy.

Effects of Economic Slowdown in Various Sectors:- Current economic slowdown has affected our country very badly. No sector is left untouched by the adverse impacts of the slowdown, right from a small sector to a big automobile company, almost everyone is facing the adverse effects of the slowdown. GDP growth decelerated to 5 percent and 4.5 percent in the April-June and July-September quarters since 2013, it reflected upon the sharp slowdowns in household consumption and investment onset, and the rise in government spending. High-frequency data suggest that activity continued to be weak for the rest of 2019, as per the World Bank.

The automobile sector is in a crisis with a drastic decline in production. Four-wheelers and two-wheelers in terms of sales have witnessed tremendous loss as compared to the previous year. Sales of medium and heavy commercial vehicles including buses fell by 63 percent in August whereas the total vehicle sales dropped by 50 percent. Car sales in April-June 2019 fell by 23.3 percent in comparison to the same period in 2018. The two-wheeler sale contracted by 11.7 percent. The sale of tractors that were high in demand across the agriculture industry fell by 14.1 percent, the highest fall in nearly four years. The slowdown in the automobile sector negatively affects everyone right from tyre manufacturers & suppliers to steel traders, etc. Reflection can be seen in how many auto dealerships are shutting down and shrinking. The vehicle loan growth has also decreased to 5.1 percent slowest in the five years. The leading auto manufacturers in the market announced that there is a continuous weak demand in their products.

Same slowdown is seen in the agricultural sector which provides employment to the majority of the population. This sector has also been drastically affected. Farmers have suffered a lot in the last few years. Thousands of farmers have committed suicide due to the economic loss. The growth in the agricultural sector which was 5 percent last year is now growing at a rate of 2 percent. This is a very serious issue for our country because India is an agriculture based country. Half of our population is engaged in farming.

Bank Retail loans are also affected by it. During the second quarter of 2019, the retail loans of banks grew by 16.6 percent in comparison to the same period in 2018. In 2018, the growth was 17.9 percent. There has been a marginal fall in growth. Housing loans form more than half of the retail loans and they have witnessed the growth of 18.9 percent during the quarter against 15.8 percent in 2018.

Construction sector is one of the largest employers in the country. Slower growth means less employment opportunities which, in turn, translate into lower income. Corroboration is also there. Per capita income is projected to grow at 6.8 percent in 2019-20, which is the lowest since the new GDP series was launched taking 2011-12 as the base year. In March 2019, India’s top 30 cities had 1.28 million unsold housing units showing an increase of 7 percent from March 2018, when the number was 1.2 million. That means, builders built the house but buyers are not investing money in real estate. The real estate sector (construction sector) has forward and backward linkages with other industries. So, when the real estate sector does well, cement, paint, steel, etc., do well too.

Even businessmen are not untouched from the economic slowdown. NBFCs are suffering from liquidity crunch, there has been a major rise in the volume of the Non Performing Assets. The service sector is also not left unaffected. All over every single person facing economic trouble because of the economic slowdown in our country.

General Recommendation to Improve the Economic Condition:

1. **Monetary policy:** "Given the sharper-than-expected slowdown and negative output gap (growth below potential), there is room to cut the policy rate further, especially if the economic slowdown continues."

2. **Fiscal policy:** "We see limited room for stimulus and stress the need for medium-term fiscal consolidation, given the high level of general government debt and the high-interest bill. Further steps could be taken to support growth including, in the short term, by focusing on the composition of expenditures and rationalizing GST and, over the medium-term, by focusing on domestic revenue mobilization, decreasing expenditures on subsidies, and enhancing fiscal transparency and thus reducing uncertainty."

3. **Financial sector:** "A comprehensive set of measures is needed to restore the health of the sector and enhance its ability to provide credit to the economy. These include steps to resolve balance sheet issues, including in the commercial banks, the corporate sector, and the NBFCs including housing finance companies. More information on smaller NBFCs is needed to better understand the impact of reduced credit on private demand, especially micro, small and medium-sized enterprises and in rural areas".

4. **Structural reforms:** "Measures to enhance the efficiency of credit allocation and governance reforms in the banking sector are urgently needed to strengthen confidence. Labour, land and product-market reforms aimed at enhancing competition and governance, along with measures to improve human capital (education and health), should be critical elements of India's structural-reforms strategy."

Conclusion:

The economic slowdown is a direct effect of GST, demonetization and several other factors. So we cannot say that it is only because of GST or demonetization. Every single factor is responsible for the economic slowdown in our country. The base of economic slowdown is the fact that the overall economic activity in the country has decreased. Even if it comes back on track according to the predictions in the fourth quarter of FY20, will these fallacies of the GST not affect the economic classes in a long period. The ill-timed implementation, mismanagement and witless planning has caused rise in inflation rate, rise in unemployment rate and fall in growth rate.

REFERENCES:

- Aakriti. S. (2019) Economic slowdown as an effect of GST.
- Ankit. K. (2019) Why is there an economic slowdown in India? Understanding the main reasons.
- Girish Garg, (2014) "Basic Concepts and features of Good and Service Tax in India".
- Niharika. S. (2019) IMF's recommendations to India to stave off "significant economic slowdown".
- Vaishali. D. (2019) Why is the Indian Economy facing Slowdown in 2019?
- Vasantha Gopal (2011) "GST in India: A Big Leap in the Indirect Taxation System", International Journal Trade, Economics and Finance, Vol.2, No.2, April 2011.
- Sobhana K. Nair Chief Economic Advisor admits to economic slowdown, THE HINDU, 09 November.

A COMPREHENSIVE STUDY OF EVALUATION IN EDUCATION

Pawan
Research Scholar, P.N.G. Govt. Post Graduate College, Ramnagar, Kumaun University, Nainital

Neha
M.Com., B.Ed. (CTET), Faculty of Pratham International School, Rewari

Abstract

Evaluation is a more comprehensive term that includes testing and measurement and also a qualitative description of the pupil's behaviour. It also includes value judgement regarding the worth or desirability of the behaviour being measured or assessed. Evaluation is an ongoing process, not a one-time event. It aids in the formation of students' values of judgment, educational standing, and accomplishment. Evaluation, in one form or another, is unavoidable in teaching and learning, as judgments must be made in all areas of educational activity. Evaluation assists in the development of an educational program, the assessment of its accomplishments, and the enhancement of its efficacy. It also gives useful feedback on the program's design and implementation. A quality, attribute, or variable of an item or a person is always measured. It performs a number of tasks in educational systems, including educational quality control and the selection of higher-quality institutions. The purpose of this study is to examine how educational evaluation is described in terms of interaction with three important components of the educational process. We discussed the need, characteristics, and role of evaluation. The term evaluation, assessment, and measurement are also defined to help distinguish these concepts. Finally, we found that evaluation is a comprehensive term that is essential to a successful teaching-learning process.

Keywords: *Continuous, Comprehensive, Development, Education, Evaluation.*

INTRODUCTION

Evaluation is an essential part of the teaching-learning process. It assists instructors and students in improving their teaching and learning. Evaluation, specifically educational evaluation, is a set of actions aimed at assessing the overall performance of the teaching-learning system. Evaluation includes all of the interaction features of the three major elements that comprise the entire teaching-learning system. We are well aware that the teaching-learning process comprises the interplay of three major elements: objectives, learning experiences, and learner appraisal. Evaluation is a purposeful, cyclical process of collecting, analysing, and interpreting relevant information in order to make educational decisions. Evaluating is a necessary part of life. In education, evaluation is very significant since only through evaluation can a teacher assess students' growth and development, changes in their behaviour progress in the classroom, and the efficacy of her/his own teaching in the classroom. In a nutshell, evaluation has become an essential component of any teaching and learning environment. In reality, evaluation is critical in determining what students learn and what teachers teach. It has a considerable effect on our educational system. *National Curriculum Framework for School Education, 2000.*

"Teaching for successful learning cannot occur without high quality evaluation."

Evaluation is an important part of the educational process. Evaluation is the process of making decisions on student learning and accomplishment, performance, and continuing education. In education, assessment often takes the form of measuring student achievement of course outcomes and information obtained, as well as the quality of student performance. With this assessment, learning needs can be identified, and additional instruction can be given to help students learn and develop competencies. Evaluation, especially educational evaluation, is a set of actions aimed at determining the overall efficacy of a teaching-learning system. Evaluation is the gathering, analysis, and interpretation of data regarding any aspect of an educational programme as part of a recognised procedure for determining its effectiveness and efficiency.

The terms "assessment" and "evaluation" are commonly used interchangeably. An evaluation is used to compare the quality of a performance or a work output to a set of criteria. The essence of evaluation is that a mentor appreciates assisting a mentee and is ready to put in the time necessary to offer excellent feedback that will improve the mentee's future performance. In terms of educational programmes, assessment entails gathering data prior to the development of the programme, throughout the development process to give a foundation for continuous modification, and after the programme has been implemented to assess its efficacy. First and foremost, the instructor must be aware of the educational goals and objectives. More precisely, the instructor must develop instructional objectives for distinct lessons within a subject's systematised and rearranged curriculum. Second, the instructor should be able to design effective communication channels. Finally, the instructor will assess the extent to which these goals have been fulfilled.

Evaluation is an essential component of any teaching and learning programme. In fact, there can be no teaching or learning without evaluation. Both teaching and evaluation are based on instructional objectives, which guide them. The diagram below depicts the interrelationship of objectives, instructional process or learning experience, and evaluation in a teaching program:

Instructional objectives

Evaluation

Learning experience

The teacher evaluates not only how far the student has progressed toward the teaching objectives but also the effectiveness of the learning experience, methodologies, and materials used to achieve those objectives.

Definition of Evaluation

Tyler (1950) defined evaluation as "a systematic process of determining the extent to which educational objectives are achieved by pupils".

Stufflebeam (1973) "Evaluation is the process of delineating, obtaining, and providing useful information for judging decision alternatives."

American Evaluation Association (2014) "Evaluation is a systematic process to determine merit, worth, value or significance."
Evaluating does not always take place at the end of a course. We want to know not only whether a student has developed a specific ability stated in the educational objectives, but also how far they have progressed during the course of teaching and learning. As a result, it is a continuous process.

CHARACTERISTICS OF GOOD EVALUATION
Validity: The degree or extent to which a tool actually, accurately, efficiently and infallibly measures what it is supposed to measure. The major categories of validity that must be met by a tool for evaluation are content validity, predictive validity, construct validity, congruent validity, factorial validity, criterion-related validity, and others.

Reliability: The degree of consistency and precision with which an instrument measures what it is designed to measure is referred to as its reliability. The consistency or stability of scores received by the same person under different examining settings.

Objectivity: A tool is said to be objective if it is free of personal bias in both understanding its scope and rating the replies. One of the primary prerequisites for maintaining all the other qualities of a good life is objectivity.

Practicability: In terms of cost, time, and simplicity of application, evaluation techniques should be reasonable, practical, and efficient. It may be an appropriate process for evaluation, but it may not be implemented. This is not something to be promoted.

Fairness: All students should be evaluated fairly. This can be accomplished by appropriately reflecting on a variety of expected behaviors, as described in the course objectives. To ensure fairness in evaluation, students should be made aware of how they will be assessed. This implies that students should be given information concerning evaluation, such as the nature of the items to be assessed and the format and structure of the exam.

Usefulness: The evaluation feedback must be made available to the students in order for them to show their present strengths and weaknesses. Students can think of ways to develop themselves if they are aware of their strengths and weaknesses. All of the criteria for their improvement should be discovered during the evaluation.

NEED AND IMPORTANCE OF EVALUATION

In the teaching-learning process, evaluation is inevitable. It is inevitable in classroom education, as it is in other domains of activity, when decisions must be taken, regardless of how basic or complicated the issues are involved. Evaluation is a necessary step in the decision-making process. The requirement for assessment is so inherent in the teaching-learning scenario that even a cursory examination appears to point to the benefits of systematic use of planned evaluation. Teachers may make better evaluative decisions with the support of evaluation. All of us are aware that we carry out activities in various aspects of the teaching-learning process, like:

i. Complete all of the objectives in the classroom.

ii. Determine if students have learning disabilities.

iii. Determine your preparation for new learning opportunities.

iv. Form students' classroom groups for special activities.

v. Assist students who are having difficulty adjusting.

vi. Develop progress reports for students.

ROLE OF EVALUATION

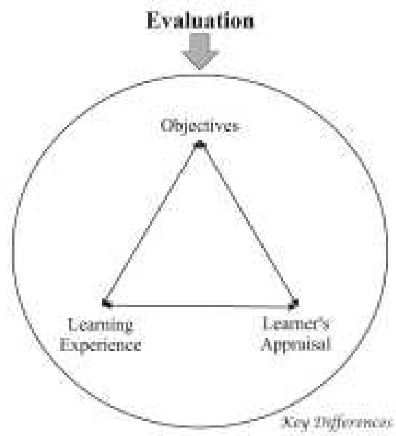
The evaluation procedure is extremely important in the teaching-learning process because it aids in the creation of learning objectives, the design of learning experiences, and the evaluation of learner performance. Aside from that, it is quite beneficial in terms of improving teaching and the curriculum. It holds society, parents, and the educational system responsible.

Teaching: The purpose of evaluation is to examine the efficacy of teaching, instructional strategies, methods, and techniques. It gives teachers feedback on their teaching and learners' feedback on their learning.

Society: Evaluation holds society responsible for the needs and learning processes of the employment market.

Curriculum: Evaluation contributes to the enhancement of the curriculum, tests, and instructional materials.

Parents: The most visible form of evaluation is the perceived requirement for frequent reporting to par parents.



The concept of a simple representation of the function of assessment in the teaching-learning process includes four distinct aspects: objectives, learning experiences, learner appraisal, and the interaction between the three.

Types of evaluation

According to functions	According to nature of reference	According to purpose	According to grades
1. Placement 2. Formative 3. Diagnostic 4. Summative	1. Norm-referenced 2. Criterion-referenced	1. Diagnostic tests 2. Aptitude tests 3. Achievements tests 4. Proficiency tests	1. Direct 2. Indirect

Placement Evaluation: The key word that is used for placement assessment is "entry behaviour." Evaluation of entry behaviour is done just before teaching starts; a teacher should know the previous knowledge of students. This helps teachers organise teaching-learning activities according to the previous knowledge of learners. The future success of the instructional process depends on the success of the placement evaluation.

Formative Evaluation: The aim of this evaluation is to provide feedback on the students' progress by identifying learning gaps and weak points. The teacher can then put together remedial programmes for them. Formative evaluation is done continuously throughout the course period. Formative evaluation also provides feedback to teachers on the effectiveness of their teaching methods, allowing them to improve their instruction. It can also reveal information about the effectiveness of course content and teaching materials.

Diagnostic evaluation: The main purpose of diagnostic evaluation is to find out the underlying cause of weakness in a student's learning, but it is also needed even prior to instruction in order to place the student properly by looking at her level of achievement. This helps the teacher correct the problems immediately, thereby improving the course. The diagnostic goes a step further and tries to provide an explanation for the possible causes of the problems in learning.

Summative evaluation: It is conducted at the end of a course of instruction to determine the extent to which the previously set objectives have been achieved. In other words, it is the assessment of students' accomplishments at the end of a course. Summative evaluation generally includes oral reports, projects, term papers, and teacher-made achievement tests, and it shows how good or how satisfactory the students are in accomplishing the objectives of instruction.

Norm-referenced evaluation: A norm-referenced exam is used to determine an individual's standing in relation to the performance of other people on the same test. It is commonly used in competitive tests. It is an effort to interpret the test results in terms of the performance of a certain group. This group is a "norm group" since it acts as a reference point for making decisions.

Criterion-referenced evaluation: A criterion-referenced evaluation is used to determine an individual's standing in relation to a certain accomplishment domain. Thus, criteria evaluation establishes an individual's standing in relation to well-defined criterion behaviour. A criterion-referenced assessment or exam is used to assess objectives, which is why it is referred to as an "objective-based test." The objectives are measured in terms of student behavioural changes.

Diagnostic test: These exams assist us in identifying "areas of learning" in which a learner may require remedial instruction and give us a profile of what the learner knows and does not know. A diagnostic test may consist of a battery of sub-tests to cover different topics.

Aptitude test: Aptitude tests primarily have a predictive purpose in that they assist us in identifying potential skills and desired attributes that are required for a person to be competent to accomplish a given activity. These assessments are commonly used to choose candidates for particular courses.

Achievement tests: As the name implies, such examinations attempt to assess the extent to which a course's objectives have been achieved. The normal end-of-course exam may be used as an example of an accomplishment test.

Proficiency tests: These tests are used to determine a person's overall ability at a certain particular time. A justified exception to the ability standards for learners of a certain status (matriculated or graduates) should regulate their reach.

Direct grading: In direct grading, an individual's performance is evaluated in qualitative terms, and the examiner's assessment of that performance is immediately reflected in letter grades. Direct grading has the advantage of reducing inter-examiner variability. Transparency is lacking in direct grading.

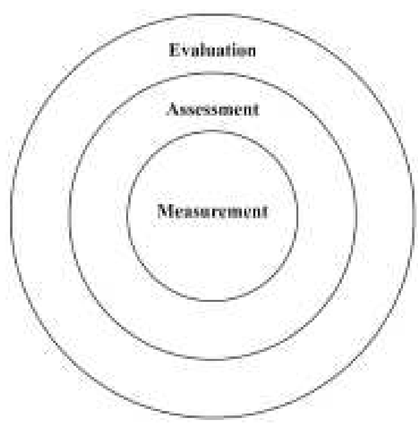
Indirect grading: An examinee's performance is first evaluated in terms of marks and then converted into letter grades using various approaches. There are two types of indirect grading:

- **Absolute grading:** It is a classic method of evaluation based on a predetermined standard that serves as a benchmark for evaluating student achievement. It entails converting marks directly into grades, regardless of the distribution of marks in a topic.
- **Relative grading:** Relative grading is commonly used in public exams. In this method, a student's grade is determined not by her own achievement but by the group's performance. "Grading on the curve" is a popular term for this kind of grading.

Measurement: As the description says, the measuring process entails performing real measurements in order to establish a quantitative meaning for a quality. Measurement is therefore the act of assigning numerals to objects, quantities, or events in order to quantify such features. To determine a child's success in the classroom, you must collect quantitative measures of the child's individual scores. The process of quantification is involved in measurement. Quantification specifies the degree to which a specific property is present in a given object. It has been observed that measurement in any field always involves three essentials:

i. Identifying and defining the quantity attribute or variable is to be measured.
ii. Determining the set of operations by which the attribute or variable may be made perceptible.
iii. Establishing a set of procedures for translating observations into quantitative statements of degree, extent, or amount.

Thus, we may conclude that evaluation entails both assessment and measurement. It is a broader and more encompassing concept than evaluation and measurement. It can be represented as:



Hence, the evaluation process is quite comprehensive and it is very much desired for effective teaching and learning.

Assessment: The word assess comes from the Latin word assessor, which means "to sit by or help the judge." Therefore, it becomes reasonable in evaluation studies to extend the word assessment to the act of acquiring data and transforming it into an interpretable form. A judgemet may then be formed on the basis of this assessment. Assessment in the classroom refers to all methods and outputs used to reflect the nature and extent of students' learning. This also considers the degree of correlation between such learning and the instructional objectives. Some experts contend that while evaluation is often used when the subject is not a person or group of people but the efficacy or technique or teaching, assessment is generally used for assessing or deciding on personal attributes. A variety of instruments are frequently used to get measurement data from multiple sources. These include tests, aptitude tests, questionnaires, observation schedules, etc.

Brookhart and Nitko (2019) identified five guidelines for effective assessment:

1. Identify the learning objectives (outcomes or competencies) to be assessed.
2. Use multiple assessment strategies and indicators of performance for each outcome.

3. Keep in mind the limitations of assessment when interpreting the results.
4. Match the assessment strategy to the learning goal.
5. Meet the students' needs.

CONCLUSION

Evaluation is an essential component of every educational system. It is a systematic procedure used in the classroom or school to develop skills with the information they need to make crucial decisions. A successful, goal-oriented teaching-learning sequence includes clearly defined objectives, classroom activities, and sufficient feedback to make students aware of their own strengths and weaknesses. Teachers should be well-versed in the concept of evaluation and the techniques for assessing in order to make their teaching more purposeful and successful. Assessment and evaluation are essential components of the learning process because they are linked to both instructional and learning outcomes. They should understand the goals that will be utilized to test them most effectively and how to use evaluation to make judgments. An evaluation is used to compare the quality of a performance or work product against a standard. Hence, we came to the conclusion that evaluation is a broad term that is critical to an effective teaching-learning process.

REFERENCES:

- Bloom, B.S., et al. (1970) Handbook on Formative and Summative Evaluation of Student Learning, New York, MC Geaw-Hill.
- Gronlund, N.E. (1981) Measurement and Evaluation in Teaching, The MacMillan Company, New York.
- Julian, C., Stanley and Hopkins. Educational and Psychological Measurement and Evaluation. New Delhi: Prentice Hall of India Pvt. Ltd.
- Srivastava, K.S. (1989): Comprehensive Evaluation in School, NCERT, New Delhi, India.
- Reynolds. R et al. (2011). Measurement and Assessment in Education. New Delhi: PHI Learning Private Limited.
- Tomás de Aquino Caluyua Yambi (2018), Assessment and Evaluation in Education https://www.researchgate.net/publication/342918149
- Dr. Bob Kizlik (2012) Measurement, Assessment, and Evaluation in Education http://www.adprima.com/measurement.htm
- https://www.tetsuccesskey.com/2014/12/evaluation-types-characteristics-ctet.html

IN-VITRO SCREENING OF MIXED LIGAND COMPLEXES OBTAINED FROM 2-AMINOPHENOL AND AZO DYE

Deepankar Sharma and Manisha Sharma
Asst. Prof., Department of Chemistry, Jaipur National University, Jaipur 302017, Rajasthan

ABSTRACT

Present communication deals with synthesis, characterization and in-vitro biological screening of mixed ligand complexes derived from 2, 4-dimethyl-3-arylazo-6-thiopyrimidine and 2-aminophenol using transition metal ions viz. Mn(II), Co(II), Ni(II), Cu(II) and Zn(II). The characterization of these synthesized complexes has been carried out with the help of spectral techniques such as H-NMR, IR and electronic spectra. The antimicrobial activities carried out on the derived complexes reveal that all these complexes are biologically active against Bacillus subtilis, Staphylococcus aureus and Pseudomonas diminuta.

Keywords: *2-Aminophenol; 2, 4-dimethyl-3-arylazo-6-thiopyrimidine; Mixed ligand complexes; Antimicrobial activity.*

INTRODUCTION

Mixed ligand complexes have been particularly known to possess at least two different kinds of ligands associated with the same metal ion and are quite different from traditional metal complexes. The complex may vary in specific properties due to the existence of multiple ligand systems. Due to this peculiarity, such complexes attract the researchers to get involved in this field. Numerous reports have been accounted for synthesis, characterization and applications of mixed ligand complexes [1-3]. The coordination of ligand to metal center changes the electronic property and the ligand itself may undergo reaction with nucleophiles at an improved rate as compared to that of free ligands. This is yet a growing field in the metal assisted organic transformation [4, 5].

Aryl azoheterocycles are potential acidic ligands and undergo varieties of metal assisted organic transformation which are otherwise impossible [6-10].

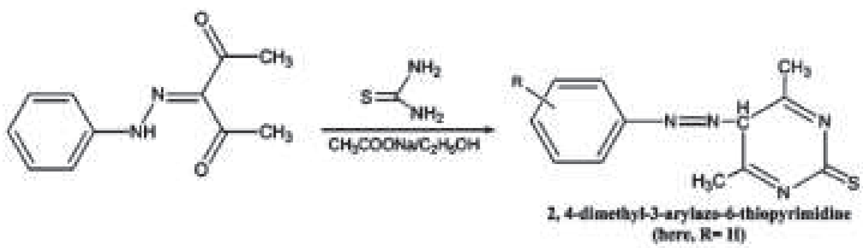
Herein, we report the synthesis and characterization of five mixed ligand complexes derived from 2, 4-dimethyl-3-arylazo-6-thiopyrimidine and 2-aminophenol using transition metal ions Mn(II), Co(II), Ni(II), Cu(II) and Zn(II); which is an extension to the similar work done earlier in our lab [10-12]. The synthesized complexes were screened for their antimicrobial activities.

EXPERIMENTAL

All the reagents (from Sigma/Merck) were used as such. IR spectra were recorded on a Perkin Elmer spectrophotometer (Spectrum Version 10.4.00) in the 4000 - 400cm^{-1} range using KBr pellets. ^{1}H-NMR spectra were recorded in d_6-DMSO using TMS as an internal reference on a Bruker Ascend 300 MHz system. UV-visible wavelengths were calculated on SL-159 Single Beam Microprocessor based Scanning UV-Visible Spectrophotometer. Melting points were observed in an open capillary tube using an electric melting point apparatus and are uncorrected. The IR & ^{1}H-NMR studies were carried out at *MNIT, Jaipur.* UV-visible data and anti-microbial activity were carried out at *Biotech Department, School of Engineering & Technology, Jaipur National University, Jaipur.*

Synthesis of 2, 4-dimethyl-3-arylazo-6-thiopyrimidine

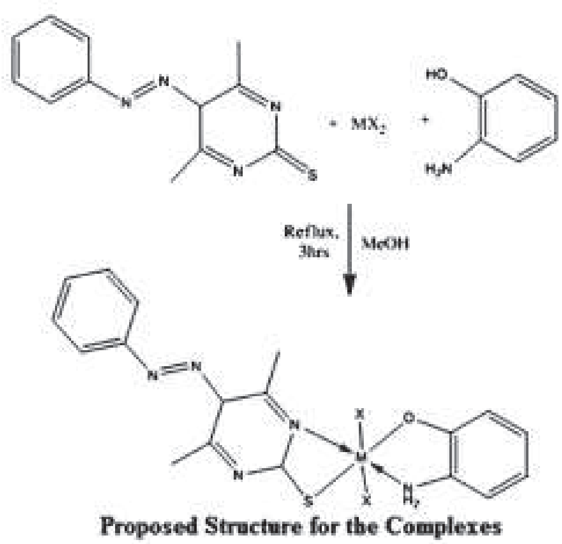
3-(2-phenylhydrazono)pentane-2,4-dione (4.71 g, 23.078 mmol) and thiourea (1.75 g, 23.078 mmol) were mixed together in the presence of freshly prepared sodium ethoxide solution (1.6 g sodium metal in 50 ml absolute ethanol). This solution was stirred for 3–4 h at room temperature, eluted over silica gel and solvent was stripped off to obtain good yield (75-80%) crystals of 2, 4-dimethyl-3-arylazol-6-thiopyrimidine (Scheme 1). The crystals were then filtered and dried under vacuum.



Scheme 1. Synthesis of ligand 2, 4-dimethyl-3-arylazo-6-thiopyrimidine

Synthesis of mixed ligand complexes

A hot methanolic solution of zinc chloride (1.6 g, 11.74 mmol) was mixed with an equimolor quantity of 2, 4-dimethyl-3-arylazo-6-thiopyrimidine (2.87 g) and 2-aminophenol (1.81 g). Few drops of conc. HCl were added to this mixture and the contents were allowed to reflux for 4 hours (Scheme 2). Resultant complexes were precipitated out on cooling, filtered, washed with methanol and recrystallized from ethanol to obtain $[Zn(C_{18}H_{19}N_5OS)Cl_2]$.



Scheme 2. Synthesis of Mixed ligand Complexes

The other complexes were synthesized with similar procedure. The synthesized complexes were obtained in 65-74% yield.

RESULT AND DISCUSSION

General Composition of Complexes

The general composition of the synthesized mixed ligand complexes can be represented as $[M(C_{18}H_{19}N_5OS)Cl_2]$ (where M = Mn, Co, Ni, Cu & Zn). All the synthesized complexes are found to be thermally stable and coloured. Physical parameters were recorded and are given in Table 1.

Table 1: Physicochemical parameters of synthesized mixed ligand complexes

S. No.	Complex	Color	Melting points (°C)	Yield (%)
1.	$[Zn(C_{18}H_{19}N_5OS)Cl_2]$	Dark Brown	195-196	68
2.	$[Cu(C_{18}H_{19}N_5OS)Cl_2]$	Dark Blue	212-214	81
3.	$[Mn(C_{18}H_{19}N_5OS)Cl_2]$	Black	186-188	76
4.	$[Co(C_{18}H_{19}N_5OS)Cl_2]$	Dark Green	202-204	79
5.	$[Ni(C_{18}H_{19}N_5OS)Cl_2]$	Light Brown	176-178	79

IR Spectra

IR spectra of all the synthesized complexes have been recorded in the range 4000 – 400 cm-^{1}. The spectra are interpreted considering few main peaks observed. The presence of peaks around 3400 cm-^{1} account for the presence of ν(-NH_2) group in the complexes.

The bands observed around 1445 - 1450 cm^{-1} and 2990 - 3055 cm^{-1} have been assigned to ν(C=C) and ν(C-H) aromatic stretching, respectively. The peaks observed in the region around 1600 cm-^{1} for all the complexes is due to presence of ν(>C=O) group in complexes. The peaks observed around 1525 cm^{-1} can be assigned due to ν(-N=N-) group present in the complexes [13].

The weak intensity peaks observed in the region 505-645 cm^{-1} can be attributed to ν(Metal-O) and ν(Metal-N) present in the complexes. The ν(Metal-Cl) band is usually observed below 400 cm-^{1} region.

^{1}H-NMR Spectra

Proton NMR spectrum of 2, 4-dimethyl-3-arylazo-6-thiopyrimidine exhibit a singlet at δ 1.41 ppm due to the presence of isopropenyl methyl groups. Another singlet at δ 2.33 ppm has been assigned to two methyl entities of thiopyrimidine ring. The peak at δ 6.91 ppm can be attributed to methine proton. A small hump at δ 14.11 ppm accounts for the tautomeric behaviour of proton on nitrogen of imidazole ring, with methine proton. Doublet at δ 7.58 ppm can be assigned to the H_a and H_d protons due to ortho coupling of the order of J = 8.0 Hz. Similarly, a triplet at δ 7.08 ppm is associated with H_b, H_c aromatic protons with J = 8.0 Hz, characteristic of ortho-coupling with neighboring protons. A blurred singlet at δ 8.35 ppm shows the presence of (-C-H) proton present in the pyrimidine ring. The well resolved multiplet at δ 7.2-7.7 ppm corresponds to the aromatic protons in mixed ligand complexes and the singlet broad peak observed at δ 4.5 ppm is assignable to (-N-H) protons.

UV Spectroscopy

The UV-vis spectroscopy for all the synthesized complexes was recorded in DMSO. Azo compounds usually show two to three bands are reported for azo compounds [14-16]; the band around 200-220 nm is assignable to $\pi\rightarrow\pi^*$ of the benzenoid moiety and the band around 420-425 nm can be accounted for $n\rightarrow\pi^*$ electronic transition of -N=N- group. Shift in positions of these bands signifies that the azo compounds form a complex with metal atom through -N=N- group. In the present case, these two bands are not significantly altered and are almost undisturbed suggesting that the -N=N- group is not taking part in bond formation with the metal ion. Apart from these, specific bands assigned to metal ligand interaction were also observed in these complexes (Table 2).

Table 2: UV-vis spectral data of synthesized complexes

S. No.	Metal Complex	Wavelength (nm)
1.	$[Zn(C_{18}H_{19}N_5OS)Cl_2]$	645 nm
2.	$[Cu(C_{18}H_{19}N_5OS)Cl_2]$	570 nm
3.	$[Mn(C_{18}H_{19}N_5OS)Cl_2]$	655 nm
4.	$[Co(C_{18}H_{19}N_5OS)Cl_2]$	665 nm
5.	$[Ni(C_{18}H_{19}N_5OS)Cl_2]$	575 nm

Antimicrobial Activity

The in vitro antibacterial activity of the mixed ligand complexes have been investigated against several pathogenic bacteria. The Minimal inhibitory concentration (MIC) was determined by means of Kirby-Bauer well diffusion method using nutrient agar media [17]. The bacterial suspension prepared in peptone water compared to 0.5 Mc Farland Turbidity standards. Bacterial plates were incubated at 37°C for 24 h. Standard laboratory cultures of four microbial strains i.e. *Bacillus subtilis, Staphylococcus aureus and Pseudomonas diminuta* were used in antimicrobial assay. Two concentrations of the test compounds of the stock solution (1X and 0.5X) were prepared for the compound and 100 µl of each concentration was used in separate wells. Streptomycin was used as positive control and ethyl alcohol as negative control for antimicrobial activity. The screening results (Table 3, Figure 1) reveal a remarkable effect of metal complexes on the bacteriocidal/ bacterostatic potency, as per the pattern:

S. aureus > *B. subtilis* > *P. diminuta*

Table 3: Antimicrobial screening results of mixed ligand complexes

S. No.	Complex	–log MIC (in µg/ml)		
		SA	BS	PD
1.	$[Zn(C_{18}H_{19}N_5OS)Cl_2]$	4.822	4.175	4.623
2.	$[Cu(C_{18}H_{19}N_5OS)Cl_2]$	4.663	4.622	4.549
3.	$[Mn(C_{18}H_{19}N_5OS)Cl_2]$	4.400	4.378	4.336
4.	$[Co(C_{18}H_{19}N_5OS)Cl_2]$	4.750	4.583	4.469
5.	$[Ni(C_{18}H_{19}N_5OS)Cl_2]$	4.643	4.493	4.375

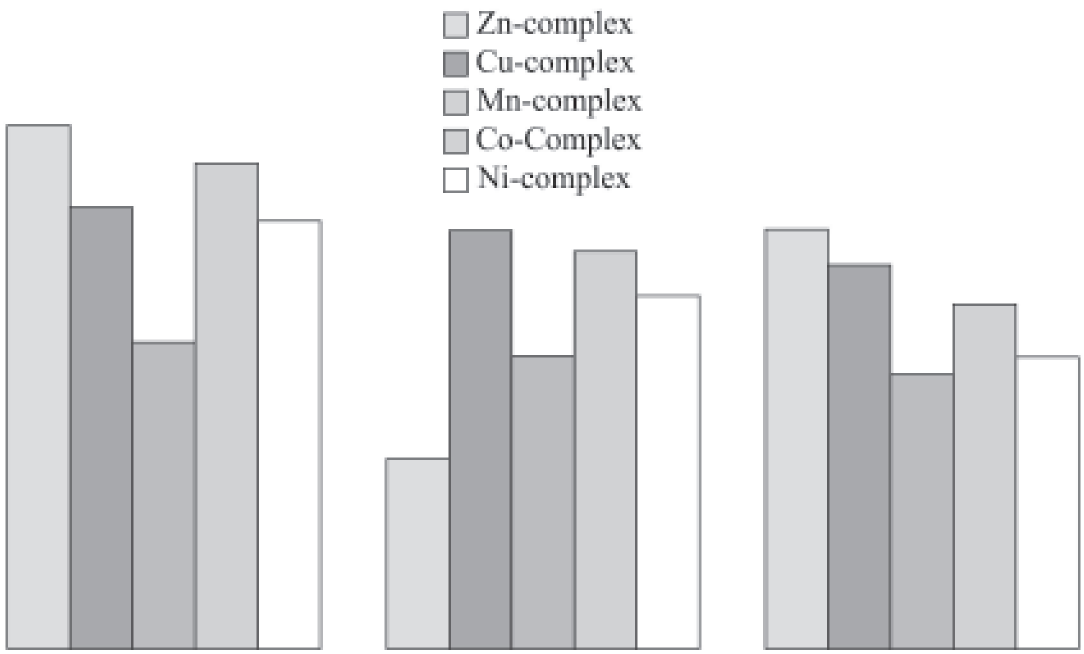


Figure 1. Anti-microbial screening results of mixed ligand complexes (Y-axis accounts for –log MIC values in µg/ml)

CONCLUSION

In this work, we have reported mixed ligand complexes synthesized by reacting 3-(2-phenylhydrazono) pentane-2,4-dione and 2-Aminophenol with respective metal chlorides. These synthesized complexes have been characterized with the help of spectral techniques such as IR, electronic spectra and a six coordinated octahedral geometry can be proposed for all these complexes. The anti-microbial of all these complexes reveal their active biological significance.

REFERENCES:

1. S.V. Sanap and R.M. Patil, Res. J. Pharma. Sci., 2, 1 (2013).
2. L. Mrinalini and A.K.M. Singh, Res. J. Chem. Sci., 2, 45 (2012).
3. N.B. Ndosiri, M.O. Agwara, A.G. Paboudam, P.T. Ndifon, D.M. Yufanyi and C.Amah, Res. J. Pharma. Bio. Chem. Sci., 4, 386 (2013).
4. R.A. Sheldon and J.K. Kochi, Metal-catalysed Oxidation of Organic Compounds, Academic Press, New York (1981).
5. C.K. Pal, S. Chattopadhyay, C. Sinha, D. Bandhyopadhyay and A. Chakravorty, Polyhedron, 13, 999 (1994).
6. P.K. Santra, R. Roy and C. Sinha, J. Chem. Sci., 112, 523 (2000).
7. P.K. Santra, P. Byabratta, S. Chattopadhyay, C. Sinha and L.R. Falvello, Eur. J. Inorg. Chem. 1124 (2002).
8. M. Panda, S. Das, G. Mostafa, A. Castineiras and S. Goswami, Dalton Trans., 1249 (2005).
9. P.K. Santra, D. Das, T. Misra, R. Roy, C. Sinha and S.M. Peng, Polyhedron, 18, 1909 (1999).
10. P. Sharma, A. Kumar, M. Sharma, Cat. Comm., 7, 611 (2006).
11. P. Sharma, M. Mandloi, S. Pritimani, Indian J. Chem., 38B, 1289 (1999).
12. P. Sharma, A. Kumar, M. Sharma, J. Singh, P. Bandyopadhyay, M. Sathe and M.P. Kaushik, J. Enz. Inhi. and Med. Chem., 27, 294 (2012).
13. R.N. Prasad and S. Gupta, J. Serb. Chem. Soc., 67, 523 (2002).
14. D.S. Wankhede, Der Chemica Sinica, 6, 52 (2015).
15. A. Anitha, K.R. Venugopala, K.S. Vittala, A. Fasiulla and A.M. Sridhara, Der Pharma Chemica, 3, 118 (2011).
16. A. Kumari and K.K. Jha, International Research Vision, 3, 19 (2017).
17. D.F.J. Brown and D. Kothari, J. Clin. Pathol. (London), 28, 779 (1975).

LACK OF AWARENESS ABOUT VARIOUS INVESTMENT AVENUES AMONG WOMEN IN INDIA

Navita Roy
Asst. Prof., Jaipur National University, Jaipur

Abstract

Saving and investment are the two major elements which help in reaching the financial goals of an individual. If you are earning then there must be a balance between your expenditure, saving and investment. Majority of the people save atleast some portion of their earning and further invest it in different avenues of their choice. At present so many investment avenues are available but majority of the people are still restricted to only few instrument like FD's, Gold, Bonds etc. This paper is a study to find out the various reasons which restrict people to choose other investment options.

Keywords: *Avenues, Financial goals, Time value of money, Diversification*

INTRODUCTION

Investment in the right direction is as important as your saving in right proportion if you want to reach your financial goals in life. At present so many tools like FD, Bonds, Debentures, Gold, Shares, Mutual Funds, ETF, Post Office Schemes, Financial Derivatives etc. are present in the market where you can earn smart returns. There is a certain amount of risk associated with each tool and it all depends on a person's risk taking ability, term period and also trust in that. If we talk about the traditional FD's and Post office schemes then the return which they give is almost equal to the rate of inflation i.e a person is getting nothing if we consider time value of money and same is with RD, but still prefer because its safe. If we talk about the other option after FD's people prefer investing in Gold, Real Estates and Insurance etc. Share and Mutual funds are nowadays one of the high return earning instruments but are highly risky. Shares, Mutual Funds, Derivatives etc. are long term instruments and if purchased for longer duration then it will surely let you earn good returns. Mutual funds are little safer then shares because it consist of so many funds which diversify your investment into various avenues of different companies and reduces risk of loss.

LITERATURE REVIEW

Akhilesh Mishra (2008), 'Shared assets is the better investment plan' the investigation closes because of absence of awareness, the vast majority of the individuals are not keen on Mutual subsidizes investment and furthermore proposed that the Mutual Funds financial specialists need information about its related terms.

Jain Dhiraj, et al. (2012), "Financial specialist's Attitude towards Post Office Deposits Schemes – Empirical Study in Udaipur District, Rajasthan" The Study investigates about Post office reserve funds. Also, it has assumed an indispensable job to interface the entire of the nation. It gives banking offices without banks. Its job has been changed and it turns into an extraordinary compared to other investment roads to affluent financial specialist and utilizations them productively in country building exercises.

Murugan (2012), "Financial specialists disposition towards investment choice in Nellore district" The exploration investigates the majority of the speculators are generally uninformed of the corporate investment roads like value and inclination shares, common assets, corporate obligation protections and stores. The investigation investigates respondents are exceptionally mindful of conventional investment roads like land, bullion, bank stores, disaster protection plans, and little reserve funds plans. Further, the financial freedom females are low cooperation in investment choices.

Sarita Bahl (2012), "Investment Behavior of Working Women of Punjab" the investigation investigates that the respondents set aside a lot of effort to get ready for the investment.

Sidharthul Munthaga, J. (2013), "Investment Pattern of Rural Investors in Nagappattinam District of Tamil Nadu", The Study closes the vast majority of the respondents are intrigued to put resources into protection, Post Office Savings (NSC), Public Provident Fund (PPF) and Bank Deposit (BD) aside from Investors having over fifty years.

Rajesh Arora (2013) attempted an investigation on singular financial specialist awareness level and choice conduct towards common reserve plans in Delhi and inferred that the individual speculator favored vis-à-vis individual correspondence rather than web based correspondence. Wellbeing of capital is a higher priority than to development based installments. Singular financial specialists want to choose themselves on where to contribute. Dominant part of the financial specialists favored open finished assets than the nearby finished assets. Plan execution, notoriety or brand name and cost proportion were viewed as generally significant while choosing the common assets.

Uma Maheshwari S. and Ashok Kumar M. (2014) investigated the investment awareness and mentality of the financial specialists to see the degree of fulfillment with their investments. The examination presumed that there is critical association among the segment components of the salaried class and their awareness with the investment approaches. The outcomes likewise demonstrated that huge level of salaried speculators of Coimbatore know to take wise investment choices and 33% of the salaried class don't select the privilege monetary arrangement because of absence of investment awareness.

Ishwara P. (2014): The creator has made an endeavor to consider the conduct and levels of fulfillment towards different investment options by salaried class representatives. Larger part of the individuals acted in a positive manner while picking their investments. The awareness level about attractive protections was relatively low.

Priya Vasagadekar (2014) considered ladies working in various modern parts in Pune. They were asked to comprehend their investment propensities, their role in investment decision making, ideal investment roads and hazard bearing limit. It was discovered that a significant number of women didn't have definite information pretty much all the investment instruments. Ladies likewise for the most part wanted to put resources into safe investment roads like Bank Fixed stores and Post-office sparing plans.

Sidharth Muthaga, J., et al. (2014), "A Study on the Attitude of the Respondent towards Investment Choices in Thanjavur District" The Study concluded that most of the financial specialists are interesting in putting resources into bank stores, post office reserve funds plans and protection and a portion of the respondents are keen on common assets and value shares.

Deepak Sood and Navdeep Kaur (2015): People set aside cash for different reasons, for example, kids' training, their marriage and different objectives of life. A close study of these factors revealed that individuals despite everything liked to put their reserve funds in customary investment channels because of absence of information on stock and product markets.

Sasirekha P. and Jerinabi U. (2015) have embraced an examination fair and square of awareness on investment concerning experts of Information innovation and uncovered that 38 % of the speculators have just normal degree of awareness on the investment. It is demonstrated that there is a relationship between age, level of training, nature of family, economic wellbeing, yearly salary, nature of association, local location, and reserve funds potential with level of awareness and not noteworthy for sex and number of acquiring individuals. Consequently it is reasoned that all the components aside from sexual orientation and number of procuring individuals have upheld the relationship with level of awareness.

C. Sathiyamoorthy et al. (2015): Investment is attempted with a desire for return which is in relation to the hazard accepted by the speculator. As per them, factors like period of speculator, instruction level and number of relatives are the affecting variables for individuals while making investment choices.

RESEARCH METHODOLOGY:

PURPOSE OF THE RESEARCH:

OBJECTIVE

1. To know the reason for very low or no investment in avenues like Shares, ETF, Derivatives etc.
2. To understand the reason behind lack of awareness among people regarding other investments tools.
3. To make some suggestions in order to enhance investment awareness among people.

METHODS OF DATA COLLECTION:

- Primary data is collected through questionnaire filled by 200 respondent.
- Secondary data is collected from Journals, Newspapers and various Websites.

DELIMITATIONS OF THE RESEARCH:

The research was conducted in Jagatpura, Jaipur by filling questionnaires from 500 individuals (service professionals+businessman).

LIMITATIONS OF THE RESEARCH:

The research has physical and economical constraint. Not everyone provided us the data according to their own personal preference and some of them knew about only few avenues.

FINDINGS:

- People prefer investing in avenues having less risk and mostly focuses on traditional FD’s & Bonds where the principle amount is safe and interest rate is fixed.
- Lack of awareness about various investment tools in the market. So, many are there who have money to invest and are ready to take risk also but have no idea where to put in.

- Investors fear about present financial scenario in our country and world. They are worried about the market fluctuations and uncertainties in the economic conditions around the words arises due to political disturbances and war conditions.
- There is a lack of proper guidance and transparency from investment companies which creates a blockage in investors mind.
- Lack of trust on other avenues. Everyday we hear about so many scams and fraud inside the companies, which leads to poor performance of shares firm and ultimately closure or dilution of the firm.
- People prefer short term benefit while investing than long term. Due to uncertainties, risk and motive of short term benefits investors in our country mostly go for maximum of 3 to 5 yrs terms.

CONCLUSION

Despite so many avenues present in the market which can earn good returns in future people want to play on the safer side. Lack of knowledge and the danger in Risk taking stops them to go for alternative options. A strong concrete financial plan is needed to fulfill financial goal of an individual and for that a proper diversified portfolio is required. One has to consider the inflation factor, time, and value of money because it helps in calculating the right return for their investments.

SUGGESTIONS

- In order to create awareness among people government and other financial organizations must organizes conferences, webinars and train their executives in such a way that they can guide investors for choosing better avenues and fulfill their financial goals.
- Transparency must be maintained and service should be given to the investor for building trust. Each and every single information whether it is company related or instruments related, must be told to the investor.
- Banks must provide a wide range of options in every branch, so that a large number of people can get benefits. Banks are the most trustable and important source, through which a large number of investors can be reached.
- Executives should be able to analyze the investor risk taking appetite and must consider time value of money and inflation before suggesting anything. They also try to understand the needs of the investor and help them to earn better from their savings.

REFERENCES:

- https://www.ijser.org/researchpaper/A-RESEARCH-PAPER-ON-INVESTMENT-AWARENESS-AMONG-INDIAN.pdf
- https://www.semanticscholar.org/paper/INVESTMENT-PATTERN-AND-AWARENESS-OF-SALARIED-CLASS-Sathiyamoorthy-Krishnamurthy/cfe5523cd9dcf4fb5cadba1a9a7cb6ff8a5632ea
- https://shodhganga.inflibnet.ac.in/handle/10603/139705
- https://www.worldwidejournals.com/indian-journal-of-applied-research-(IJAR)/article/investor-s-attitude-towards-investment-and-risk/NzUxNg==/?is=1&b1=77&k=20

AN IMPACT ON PRODUCTIVITY OF WFH IN EDUCATIONAL SECTOR

(AN ANALYSIS OF OPPORTUNITIES AND CHALLENGES DURING AND AFTER COVID-19)

Ms. Krati Agarwal

Research Scholar, University of Rajasthan, Jaipur

Abstract

The pandemic, Covid-19, that swept the world has rendered a large number of educationists unable to commute to their work, to cope with the lockdown policies of the Indian Government. This has resulted in work from home for adults and online classes from home for children as well as new learning opportunities in terms of webinars, e-conferences, E-FDPs and other virtual teaching & learning methods. The new ways of learning & teaching has caused a direct impact on the productivity as most of the educationists are new to the work from home environment. While some, if not all coming from a classroom environment, had to face difficulties in working from home, the others have learnt and adapted the new patterns of the online environment. Covid-19 has especially challenged educationists who had experience mostly in teaching in classroom environment. This study examines their experience using the data of 50-100 samples through questionnaires and interviews. It investigates the question of whether working from home improves productivity and creates new opportunities in the educational sector. This study also analyse the changes in productivity due to factors like experience, age, gender and family background. This research provides insight to understand how work from home be designed and blended with traditional working system. It helps to reshape the current structure of teaching and learning as well as working hours and flexibility.

Keywords – *Work from home, Productivity, Educationists, Covid-19 Pandemic, Lockdown*

Introduction

The outbreak of covid-19 disease affecting the world had brought social and economic losses to the people, who specifically work in the educational sector. This will reshape the way of teaching and learning. As of December 8, 2020, more than 67 million confirmed cases had been registered worldwide, with more than 1.5 million deaths (BBC News, 2020). In order to prevent the spread of this hazardous disease, governments had ordered a lockdown of whole nations. This has resulted into a change in the working patterns of people in every sector of the economy. The major change that has been observed in the working patterns is telecommuting or Work from Home system. Telecommuting has been suggested by the World Health Organization which is to be implemented by governments and organizations around the globe as a new work innovation in order to prevent the spread of the virus as well as to provide a solution to continue work as usual without any hurdles. In comparison to working from home system, WFH has the potential to reduce commute time, provide more flexible working hours and improve work-life balance.

In this paper the researcher has analyzed the impact of WFH on the productivity levels of educationists as it is a major transition in the educational sector for both the teachers and the learners. It is speculated that this work arrangement will continue even after the pandemic ends not in the form of complete WFH system but in the blended form. As the technology advances where everyone owns a mobile phone or computer, it has become important that we evolve with this change. Educationists made use of technology to be able to teach students even during lockdown and in a better way.

The researcher has analyzed that whether a possibility of working from home in the educational sector is to be considered as a means of work life balance because it provides the time to spend with family members. However there can be the possibility of risks at the same time that must be considered while working from home. Working from home is effective to improve the quality of life (Azarbouyeh and Jalali Naini 2014), employee happiness, work satisfaction (Kazekami 2020), and openness to creativity that will lead to innovation (Ellis and Webster 1998).

One of the side effects and risks that need to be considered when introducing telecommuting work such as social isolation can be a serious problem that causes workers to be detached and leads to reduced motivation and performance (Martin and MacDonnell 2012). The purpose of this study is to find out the major predictors impacting the productivity of the educationists while working from home. It also investigates whether online education is more convenient to the teachers in comparison to classroom teaching, whether it gives more scope for work life balance and whether online education adds to the quality of content delivery. The study investigates the psychological aspect of the teachers regarding the work from home setup.

Review of Literature

Review of literature is done to understand the areas of study previously undertaken work which throws a light on the potential areas that are yet to be discovered. An effort has been made to make a brief review of past work in relation to the work from home environment. It is essential to make a review on this field in order to develop an understanding on the relationship between productivity and work from home.

Rahman and Arif (2020) has a conducted a study on 'Working from Home during the COVID-19 Pandemic: Satisfaction, Challenges, and Productivity of Employees'. This study has investigated on how professionals have collaborated with each other while working online from home during covid-19 pandemic in Bangladesh. The researcher has used both the primary and secondary data to conduct a research. The findings of the study state that the participants of the research are fairly satisfied with the work from home environment.

Irawanto, Novianti and Roz (2021) conducted a research on 'Work from Home: Measuring Satisfaction between Work–Life Balance and Work Stress during the COVID-19 Pandemic in Indonesia'. The purpose of the study was to fill the gaps in literature by finding out the various predictors of job satisfaction during working from home. The researchers used a quantitative approach and the responses were analyzed using a Smart-PLS software. The study points out that working from home, work–life balance, and work stress have a significant effect, both directly and indirectly, on job satisfaction.

Gibbs, Mengel and Siemroth (2021) conducted a study on 'Work from Home & Productivity: Evidence from Personnel & Analytics Data on IT Professionals'. The aim of the study was to investigate productivity while working from home during and before the pandemic at an Asian IT service company. The researchers presented various factors that have affected employee's productivity in the working from home environment. They have investigated the challenges that employees are facing while working from home.

Abi Adams-Prassl et al. (2020) have conducted a study on 'Work Tasks That Can be Done From Home: Evidence on the Variation Within and Across Occupations and Industries'. The researchers have presented the models to determine the possibility of work from home including models that are used to analyze the impact of the pandemic policies pointed at reopening the economy.

Erik Brynjolfsson et al., Von Gaudecker et al. (2020) have done a study on 'Covid-19 and Remote Work: An Early Look at US Data'. In this study the researchers have concluded that professionals, managers, knowledge workers, young employees and those with other related occupations make more use of work from home system.

Barrero et al. (2020) have done a study on '60 Million Fewer Commuting Hours Per Day: How Americans Use Time Saved by Working from Home'. The researchers found out that people in USA have saved more time by more than 60 million hours per work day from WFH.

Bloom et at. (2015) conducted a study on 'Does Working from Home Work? : Evidence from a Chinese Experiment'. The researchers have done a study on call center employees in Chinese firm. The findings suggest that the output of those employees rose who were assigned work from home partly because they have worked more hours and partly because their productivity has increased in WFH environment.

Research Objectives

This study's general objective was to analyse the productivity level of educationists while working from home during the pandemic. To get a clear understanding of overall aim of the study, certain specific objectives were set out as follows:

1. To determine the scope of work life balance in online education.
2. To know the challenges involved in telecommuting.
3. To know the psychological aspect of educationists related to telecommuting.
4. To determine the perceived level of ease of use of e-learning tools.

Research Methodology

Research methodology is a systematic approach of describing the problem of research scientifically. It provides a clear thought of how research has been done. In this study, the exploratory research design has been employed. Both primary as well as secondary data has been used to collect the information for the conduct of the study. Primary data was collected through online survey conducted by creating Google forms. The sample consisting of 50 educationists as respondents working remotely during the Covid-19 pandemic in Jaipur city of Rajasthan has been taken. While secondary data was collected from reviewing previous research literature, published articles, journals, books, websites, etc.

Due to the strict measures of lockdown during the pandemic and busy WFH schedule of educationists and due to the non-availability of sampling frame or the database, probability sampling was not possible to employ. Convenient sampling method was adopted which is otherwise known as a non random sampling. In this non-random sampling, data collection is done conveniently by well suited members of the education sector.

Data Analysis and Interpretation

For the purpose of the study, primary data has been gathered from 50 educationists who were remotely working during the pandemic. Online questionnaire created on Google forms had been filled by the participants and their responses are recorded below.

Microsoft excel has been used to analyze the data which involve various quantitative aspects viz. percentage, mean, standard deviation etc.

The following tables depict the information provided by the participants for the purpose of the study.

Table 1 depicts the positions of the educationists who have taken participation for the successful conduct of the study. In this assistant Professor (44%), Lecturer (20%) and Teacher (18%) have made up most of the sample.

Table 1: Job Positions of Educationists

Job Title	No. of Respondents	Percentage of Respondents
Teacher	9	18%
Lecturer	10	20%
Assistant Professor	22	44%
Associate Professor	7	14%
Professor	2	4%
Total No. of Respondents	**50**	**100%**

Working hours in WFH

Table 2 shows the online working hours of Educationists during the Covid-19 pandemic. The respondents on an average work for about 26.58 hours per week. Subsequently, there are four weeks in a month which amounts to 106.3 hours per month on an average.

Table 2: Online Working hours of Educationists

Duration of work (Per Week)	Percentage of Respondents	Mean of work hours
Less than 20 hours	35.9%	Mean = 26.58 hours/week
20-30 hours	23.1%	
30-40 hours	30.8%	
More than 40 hours	10.3%	

Demographic Factors Affecting the Efficiency Level of Educationists in WFH System

Some of the demographic factors also affect the efficiency level of educationists. Online survey reveals that younger age group participants were more satisfied with WFH system rather than old age group participants as they were more technologically savvy. Similarly, male faculties were more satisfied than women as the woman faculty find it difficult to balance both home and work. They got more distractions at home while working from home. In addition, marital status also affects the efficiency level of educationists. The efficiency of married participants with dependents at home has reduced considerably than unmarried participants with no dependents.

Table 3: Demographic factors affecting the efficiency of educationists

Demographic factors	No. of Respondents	Percentage of respondents
Age	Below 35 years - 23	46%
	Above 35 years - 27	54%
Gender	Male -15	30%
	Female- 35	70%
Marital Status	Married – 36	72%
	Unmarried - 14	28%
Family background	Less than 5 members - 40	80%
	More than 5 members - 10	20%

Satisfaction level of Educationists While WFH

42% of respondents have expressed that they are “disagree” with the statement that online education is more convenient to teachers while 15% of respondents are “strongly disagree” with the statement. This shows that the satisfaction level of educationists with respect of online education is fairly low in comparison to physical setup.

Table 4 shows the factors that are somewhat positively contributing to the satisfaction level of educationists from WFH. ‘Comfortable in using E-teaching tools’ seem to be most significant factor (70%), followed by ‘E-learning platform is user-friendly (56%).

This strongly indicates that educationists are more inclined towards the blended teaching rather than the proper work from home system.

Table 4: Factors contributing to the satisfaction level of educationists from WFH

Factors contributing satisfaction levels	No. of Respondents	Percentage of Respondents
Scope for work life balance	16	32%
Quality of Content Delivery	22	44%
E-learning platform is user friendly	28	56%
Comfortable in using E-teaching tools	35	70%
E-learning platforms help in simplifying teaching ability	26	52%

*Multiple responses were present

Challenges Faced by Educationists While Working from Home

Challenges are always present in any work environment. Table 5 shows some of the major challenges faced by educationists while working from home are ‘distractions at home’ (50%), ‘social isolation’ (44%) and ‘internet connectivity’ (40%). Usually, educationists have 6 hours of work per day but in WFH setup they were facing difficulty in keeping a regular schedule. Educationists were also facing a challenge in having proper access to the equipments needed for working from home.

Some previous literatures also have some similar findings. According to Werber (2020), 25% of the respondents believe that the most challenging factor of working from home is social isolation. 13% of the respondents have also mentioned about the distractions caused by children at home.

Table 5: Challenges faced by educationists while working from home

Challenges	No. of Respondents	Percentage of Respondents
Access of tools/equipments needed	11	22%
Social Isolation	22	44%
Difficulty in coordinating with coworkers	10	20%
Internet Connectivity	20	40%
Distractions at home	25	50%
Physical workspace	12	24%
Other reasons	20	40%

*Multiple responses were present

Source: Online Survey

Psychological Aspect of Educationists towards WFH

Table 6 shows the psychological aspect of educationists towards the work from home system. The most significant factor which is essential in educational sector is the interaction of the teachers and their students which is missing in the WFH system. 76% of the respondents believe that 'inconsistent or poor contact with students' (76%) and 'personal attention is less in WFH' (74%) are the most significant factor which is lacking in WFH system. Moreover, 70% of the respondents believe that there is continuous distractions both teachers and learners are facing while taking online education. This clearly indicates that educationists are not convenient in taking the classes online more often.

Perceived level of productivity

Level of productivity of educationists can be measured by the number of students present in the class and their understanding level. Only 26% of the respondents believe that there was a satisfactory level of attendance of the students while only 22% of the respondents believe that online education is helping the students in understanding their subjects.

Productivity of educationists can also be measured by the knowledge they have gained by attending the seminars or workshops. Due to the restrictions on the gatherings during pandemic

Table 6: Psychological aspect of educationists towards WFH

Psychological aspect	No. of Respondents	Percentage of Respondents
Personal attention to students is less in WFH	37	74
Possibility of distractions at both ends	35	70
Difficulty in coordinating with colleagues	22	44
Inconsistent or poor contact with students	38	76

*Multiple responses were present

educationists were able to attend seminars at home with the help of internet. Table 7 clearly indicates that 86% of the respondents believe that E-webinars, FDPs, E-conferences are more convenient to attend at WFH rather than attending physically. This indicates that WFH system in the education sector can be both productive and unproductive in different ways.

Table 7: Perceived level of Productivity

Productivity level of educationists	No. of Respondents	Percentage of Respondents
Satisfactory attendance of the students	13	26%
Understanding level of students	11	22%
More than 4 webinars attended during pandemic	30	60%
E-webinars, FDPs are more convenient to attend	43	86%

Conclusion

Research findings make it evident that work from home system in the education sector has not proved to be a best option for the educationists of Jaipur city of Rajasthan. This study brings to light the changed scenario of working pattern in the educational sector during the Covid- 19 outbreak. The findings of the study suggest that the respondents did not find the working from home system convenient in comparison to the physical setup. In addition, some of the factors that contribute to the satisfaction level of educationists like quality of content delivery, e-learning platform being user friendly etc. Moreover, some of the challenges like social isolation, internet connectivity, physical work environment at home, distractions at home etc have also been highlighted. The study also highlighted the productivity level of educationists which is both also low and high varying under different factors. Specifically, the study has concluded that for the successful implementation of WFH system, there should be an access of tools/equipments required at both ends.

REFERENCES:

1. Bloom, N.J. (2015). Does working from home work? Evidence from a Chinese experiment. *The Quarterly Journal of Economics,* 165-218.
2. Brynjolfsson, E.J.-Y. (2020). COVID-19 and remote work: An early look at US data. *National Bureau of Economic Research.*
3. Chung, H. (2018). Future of Work and Flexible Working in Estonia: The Case of Employee-Friendly Flexibility. *Tallin: Arenguseire Keskus,* 42.
4. Clark, A.E. (1996). Job Satisfaction in Britain. *British Journal of Industrial Relations,* 189-217.
5. D.,1.A., Golden, T., & Shockley, K. (2015). How Effective Is Telecommuting? Assessing the Status of Our Scientific Findings. *Psychological Science in the Public Interest,* 40-68.
6. Di Martino, V. A. (1990). Telework: A New Way of Working and Living. *International Labour Review,* 529-54.
7. Dodi Wirawan Irawanto, K. R. (2021). Work from Home: Measuring Satisfaction between Work–Life Balance and Work Stress during the COVID-19 Pandemic in Indonesia. *MDPI.*
8. Ellis, S.T. (1998). Managers' Innovation toward Telecommuting: A Structural Equation Model. *Proceedings of the Hawaii International Conference on System Sciences,* 161-68.
9. Fisher, G.G. (2009). Beyond Work and Family: A Measure of Work/Nonwork Interference and Enhancement. *Journal of Occupational Health Psychology,* 441-56.
10. Fonner, K.L. (2010). Teleworkers Are More Satisfied with Their Jobs than Are Office- Based Workers: When Less Contact Is Beneficial. *Journal of Applied Communication Research,* 336-61.
11. Konrad, A.M. (2000). The Impact of Work-Life Programs on Firm Productivity. *Strategic Management Journal.*
12. Narayanan, L.A. (2017). Telecommuting: The Work Anywhere, Anyplace, Anytime Organization in the 21st Century. *Journal of Marketing and Management,* 47-54.
13. Rahman, K.T., & Arif, M.Z. (2020). Working from Home during the COVID-19 Pandemic: Satisfaction, Challenges and Productivity of Employees. / *International Journal of Trade and Commerce,* 282-294.
14. Singh, R., Kumar, M.A. and Varghese, S.T. (2017), "Impact of Working Remotely on Productivity and Professionalism," IOSR Journal of Business and Management, 19(5): 17–19.
15. Zikmund, W.G. (2000). Business Research Method. The *Dryden Press.*

FINITE ELEMENT METHOD IN THE FLUID FLOW AND HEAT TRANSFER PROBLEMS

Shefali Jauhri
Asst. Prof., Department of Mathematics, Jaipur National University, Jaipur

ABSTRACT

Engineering problems of heat transfer and fluid flow involve one or more governing equations with some boundary conditions over a domain. In general, the domain of the problem is not simple but often complex and nonuniform so it is not possible to find an exact solution every time. A finite element method is a powerful tool for numerically analyzing problems in these areas because of the ability to accurately discretize domains of any size and shape to use a mesh of finite elements. This paper reviews the applications of finite element approaches in heat transfer and fluid flow, and highlights some recent advances in this method.

Keywords: *Finite Element Method, Fluid Flow, Heat Transfer, Mesh Generation.*

The introduction: The period prior to the introduction of computers, engineering problems often demanded a large amount of time to derive analytic or exact solutions. Although these solutions often provided excellent insight into the behavior of some systems, it could be derived only for limited problems. Since the late 1940s, the availability of digital computers has led to an unquestionable explosion in the development and use of numerical methods. These techniques have great capabilities to solve complex problems and handle large systems of equations, nonlinear behavior, and complicated geometries that are often difficult or impossible to solve analytically.

For example, the governing equation of the fundamental two-dimensional heat conduction problem is:

$$\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0 \quad (1)$$

where $u(x, y)$ is the temperature distribution in the Cartesian coordinates x, y, and is defined in a rectangular region $0 < x < a$, $0 < y < b$, together with the boundary conditions:

$$u(0, y) = 0 \text{ and } u(a, y) = 0 \quad \forall 0 \leq y \leq b$$

$$u(x, 0) = 0 \text{ and } u(x, b) = u_b \quad 0 \leq x \leq a \quad (2)$$

This equation has an analytical solution [1]:

$$u(x, y) = \frac{4u_0}{\pi} \sum_{k=1}^{\infty} \frac{1}{(2k+1)} \frac{\sinh \frac{(2k+1)}{a} \pi y}{\sinh \frac{(2k+1)}{a} \pi b} \sinh \frac{(2k+1)}{a} \pi x \quad (3)$$

This expression is not simple, and still we need numerical procedure to evaluate this. It is desirable to recast the problem by considering various forms of discretization. The typical term of a differential can be converted to approximate discrete expression by using a numerical scheme. The discretized form of the problem only requires the solution to be satisfied at a finite number of points in the region; and in the remainder of the region, appropriate interpolations may be used. Thus, the problem is reduced to a purely algebraic form involving only the basic arithmetic operations, which could in turn be solved by numerical methods. We have many general discretization methods namely, the Finite difference method, Finite Element Method, etc. The Finite Difference Method is the simplest method to apply, but particularly on the uniform grid, and requires high degree mesh regularities. One common numerical technique in engineering analysis is the finite element method for solving initial and boundary value problems.

History: The modern use of finite elements started in the field of structural engineering. The advent of jet engine in the 1940s and the resulting changes in aircraft speeds had led to the change from unswept to swept wind designs. The first attempt was by Hrennikoff [1] who developed analogy between actual discrete elements and the corresponding portions of a continuous solid, and it was adapted to aircraft structural design. Based on Displacement Assumptions, Turner et al. [4] introduced the element stiffness matrix for a triangular element, and together with the direct stiffness method, described the method for assembling the elements. Clough [7] introduced the term 'finite element' in a paper describing the applications in plane elasticity. Works on the solution of non linearity problems had become more prominent. Incremental technique to solve geometrical non linearity problems was initiated by Turner et al. [4], and stability problems were analysed by Martin [3]. Material nonlinearity problems, such as plasticity and viscoelasticity, were discussed by Gallagher et al. [8] and Zienkiewicz et al. [5] respectively. Melosh [8] utilized the principle of minimum potential energy and provided the first convergence proof in the engineering literature. This led to the use of variational principle that extended the use of FEM in many new areas. Zienkiewicz and Cheung [6] examined the solution of Possion's equation, and Wilson and Nickell [2] considered the transient heat conduction problems. The method also found applications in the field of biomedical engineering, where geometric and material non linearity would be involved. This problem was first investigated by Gould et al. [10].

FINITE ELEMENT METHOD:

The fundamental idea of the FEM is to discretise the domain into several sub domains, or finite elements. These elements can be irregular and possess different properties so that they form a basis to discretise complex structures, or structures with mixed material properties. Further, they can accurately model the domain boundary regardless of its shape. To establish a 'general purpose' method for solving problems in heat transfer and fluid flow, consider the system of differential equations:

Au = f in Ù (4)
with the boundary conditions:
Bu = t in Γ (5)

where A is a system of governing equations defined in the domain Ù, B is a system of some boundary functions defined in the boundary Γ, and f, t are some functions. This system governs many applications in the engineering field. To find a solution to this system, apply the weighted residual method and yield:

$$\int_{\Omega} W_j (Au - f) d\Omega + \oint_{\Gamma} W_j (B\bar{u} - t) d\Gamma = 0 \quad (6)$$

where $Wj(j = 1,\ldots,n)$ are weighting functions and $\bar{u}$ is an approximation to the unknown u:

$$u = \bar{u} = \sum_{j=1}^{n} N_j u_j \quad (7)$$

in which N_j are some basis functions and u_j are the nodal values of the unknown.

Substituting equation (7) into equation (6), a system of equations can be obtained:
$Ku = f$ (8)

where K is a square matrix, and u, f are some vectors.

The Galerkin version of FEM (GFEM) is defined when the weighting function in equation (6) is: (9)
$W_j = N_j$ *(9)*

This method leads to minimum errors and preserves the symmetry of matrix K, and it is the most frequently used version of FEM. Sometimes this method is also called the Bubnov-Galerkin methods (BGFEM). In recent years we have some other versions of FEM like, Petrov-Galerkin finite element method (PGFEM), the finite volume method (FVM) etc.

APPLICATIONS TO HEAT TRANSFER AND FLUID FLOW

1. Hybrid Schemes for Solving Nonlinear Convection-Diffusion and Compressible

Viscous Flow Problems-The viscosity and heat conduction coefficients of gases are small, so that viscous dissipative terms are often considered as perturbations in the inviscid Euler system. It implies that an effective numerical method for solving inviscid flow must be considered. A hybrid FVM and FEM scheme is proposed to solve nonlinear convection-diffusion problems and compressible viscous flow using a general class of cell-centred flux vector splitting FVM discretization of inviscid terms together with FEM discretization of viscous terms over a triangular grid.

2. Spatially Periodic Flows in Irregular Domains

Based on the relative orientation of the modules, two types of periodicity are considered translational and rotational. When the geometry of the flow problem is complex, periodic boundary fitted grids are often used over a typical module to predict such flows. Finite volume non staggered grid methods are often used to discretise the momentum and continuity equations in fluid flow.

3. Acoustic Fluid-structure Interaction - Problems In this method, the pure displacement-based formulation is replaced by a displacement/pressure (u/p) formulation via a variational indicator. The standard Galerkin finite element discretization procedure is applied to give the matrix equations of the u/p formulation.

Conclusion:

FEM offers enormous flexibility in the treatment of nonlinearities, inhomogeneities and anisotropy. The objective of this paper was to identify some trends in FEM and their relation to research in engineering. It is hoped that works from different disciplines, whose common interest is finite element methods, can promote wider awareness throughout the finite element community of the latest developments in engineering and mathematics.

REFERENCES:

1. A. Hrennikoff, *"Solution of problems in elasticity by the framework method"*, J. Appl. Mech., Vol. A8, pp. 169-75 (1941).
2. E.L. Wilson and R.E. Nickell, *"Application of finite element to heat conduction analysis"*, Nucl. Engrg. Des., Vol. 4, pp. 1-11 (1966).
3. H.C. Martin, *"On the derivation of stiffness matrices for the analysis of large deflection and stability problems"*, Proc. Conf. Matrix Methods in Struct. Mech., pp. 697-716 (1965).
4. M. J. Turner, R.W. Clough, H.C. Martin and L.T. Topp, *"Stiffness and deflection analysis of complex structures"*, J. Aero. Sci., Vol. 23, pp. 805-823 (1956).
5. O.C. Zienkiewicz, M. Watson and I.P. King, *"A numerical method of visco-elastic stress analysis"*, Int. J. Mech. Sci., Vol. 10, pp. 807-827 (1968).
6. O.C. Zienkiewicz and Y.K. Cheung, *"Finite elements in the solution of field problems"*, The Engineer, Vol. 220, pp. 507-510 (1965).
7. R.W. Clough, *"The finite element in plane stress analysis"*, Proc. 2nd A.S.C.E. Conf. on Electronic Computation, Pittsburgh, Pa., pp. 345-378 (1960).
8. R.H. Gallagher, J. Padlog and P.P. Bijlaard, *"Stress analysis of heated complex shapes"*, Proc. A.S.C.E. Symp. on Application of Finite Element Methods in Civil Engineering, Vanderbilt University, Nashville, Tennessee, pp. 155-205 (1962).
9. R.J. Melosh, *"Basis for derivation of matrices for the direct stiffness method"*, J.A.I.A.A., Vol. 1, pp.1631-1637 (1963).
10. P.L. Gould, A. Cataloglu and R.E. Clark, *"Mathematical modelling of human aortic valve leaflets"*, Appl. Math. Modelling, Vol. 1, pp.33-36 (1976).
11. T.Y. Chao and W.K. Chow, *"A Review on the applications of Finite Element Method to Heat Transfer and Fluid Flow"*, International Journal on Architectural Science, Volume 3, Number 1, p.1-19, 2002.

THE UNGRATEFUL REFUGEE : EXPLORING THE EXODUS

Harshita Agarwal
Student, St. Xavier College, Jaipur

Abstract

"And here is the biggest lie in the refugee crisis. It isn't the faulty individual stories. It is the language of disaster often used to describe incoming refugees—deluge or flood or swarm. These words are lies." - Dina Nayeri, The Ungrateful Refugee

People fleeing persecution and conflict have been granted asylum in foreign lands for thousands of years. The UN says - an unprecedented 70.8 million people around the world have been forced from home by conflict and persecution at the end of 2018. While we just picture an overcrowded camp, full of people and children, sick, shabby, food half-cooked, half-spilled, the lives of these refugees hold more into it.

In this paper, an attempt is made to understand these lives closely with the text "The Ungrateful Refugee" by Dina Nayeri. In this book, Nayeri weaves together her own vivid story with the stories of other refugees and asylum seekers in recent years, bringing us inside the daily lives and taking us through the different stages of their journeys, from escape to asylum to resettlement. In addition to this, some other examples are cited from other works related to refugees. Insights have been drawn from a comparison between the treatment given to refugees by the local people and the government of the nation they enter, then and now. With the pandemic covid-19 and an unsurprising spread of diseases at other days, because of their living conditions which affect their lives more than others', a study is done of the circumstances they are bound to live in, with limited or no support and present a theoretical analysis of it.

Keywords: *The Ungrateful Refugee, Refugee Crisis, Covid-19, Asylum, Dina Nayeri*

Objectives

- Understand the reality of the refugee crisis
- Unfold the hidden reality with the help of accounts mentioned in literature
- Study about the process and problems involved in seeking an asylum
- Estimate and provide some solutions

Methodology

A theoretical analysis of the lives of refugees and problems faced by them with regard to a collection of real narratives mentioned in the book "The Ungrateful Refugee".

Introduction

- **About the author and the book**

Dina Nayeri an Iranian American Novelist was eight when she became a refugee and had spent several years seeking asylum before she settled in an American asylum and later a citizen. Throughout her journey from Iran to America, she comes across many people from different backgrounds, coming out of it for several reasons. The book *"The Ungrateful Refugee"* recalibrates the conversation around the refugee experience. Nayeri pens down all such stories in the most transparent manner, possible. On the other hand, it brings several important issues related to the lives of refugees which go unnoticed and uncared, into notice.

- **Refugee Crisis**

It is defined as difficult and life-threatening situations faced by refugees moving out or entering a country. A crisis can occur either from the perspective of the forcibly displaced persons, or that of the receiving state, or both, but the problems faced by the later are considered the real major "crisis", above human life at stake.

Every country in this political world is dealing with a serious refugee crisis with an ever-increasing number of incoming people and lesser resources and solutions. However, the refugees face severe adversities physically and emotionally. They are the victims of the crisis, not the creators.

Review of literature

"*No one leaves home unless home is the mouth of a shark,"* writes Warsan Shine. UNHCR refers refugees in need of resettlement to countries that accept refugees (Georgetown Law, 2009). *"Refugees must pass an interview and complete an extensive medical check and security clearance" (Martin, 2004).* While there is no accepted definition of the term integration, scholars have identified a wide variety of indicators, or measures, that policy makers and those working with refugees can utilize to assess refugee progress towards integration. The ORR focuses on three particular indicators of integration: employment, self-sufficiency, and English language acquisition.

Thesis Statement- This paper draws a closer insight into the refugee lives and how the narrative is different from that presented to us by the ignorant society we live in. Hence, it is an attempt to present the picture from the victim's viewpoint.

Why- "Refugee Crisis"?

The UNHCR defines a refugee as "someone who has been forced to flee his or her country because of persecution, war, or violence." According to Amnesty International, there are many reasons why people around the globe seek to rebuild their lives in a different country. Millions flee from armed conflicts, violence, human rights violations, etc. Some no longer feel safe and might have been targeted just because of who they are or what they do or believe – for example, their ethnicity, religion, sexuality, or political opinions.

The first major international refugee crisis happened in the 20th century when more than 50 million people were displaced because of the Second World War. War doesn't only pose a threat to life but the collapse of economic and financial services make it difficult to earn a livelihood. Since the 1950s, many nations in Africa have suffered civil wars and ethnic strife, thus generating a massive number of refugees from different nationalities and ethnic groups.

In the form of religion, social, national, or political, persecution causes many to flee from their home country. According to Pew, 46% of refugees in 2016 who came to the US were Muslim and 44% Christian; 10% were other, including Hindus, Buddhists, and Jews.

Women and LGBT are the targets of killings, sexual and gender-based violence, physical attacks, torture, arbitrary detention, accusations of immoral or deviant behavior, denial of the rights to assembly, expression, and information, and discrimination in employment, health and education in all regions around the world.

It is estimated that more than 20 million people all over the world face food insecurity. Countries like Somalia, South Sudan, Nigeria, and Yemen face extreme drought, and many from here become refugees, in search of stable food sources. Millions of people face extreme weather conditions such as droughts or floods. Adding on, Financial instability, uncontrolled inflation, lack of access to healthcare are often the major reasons for a financially driven refugee crisis.

The crisis doesn't end when they leave their country but begin. In hope of a better life in another country, there await several other challenges before them to seek a refugee camp, an asylum, and then citizenship. These problems include the following-

- **Housing at Refugee Camps**

In Sri Lankan refugee camps, a typical house is a small wooden one-room hut with a corrugated iron roof. In Jalazone, a Palestinian refugee camp, the households have 3-5 people per room, while some have over 5 people per room. French Refugee Camps, *"are plagued by rats, water sources contaminated by feces, and inhabitants have been diagnosed with tuberculosis, scabies, and post-traumatic stress."* A study conducted in refugee camps in Bangladesh found that camps that provided sanitation facilities had cholera rates of 1.6 cases per 1,000 people, while camps that had no such facilities had cholera rates that were almost three times greater. It can easily be concluded that the houses are poorly ventilated and overcrowded.

- **Health**

The most frequent health problems of newly arrived refugees include accidental injuries, hypothermia, burns, gastrointestinal illnesses, pregnancy and delivery related complications, diabetes, and hypertension. They are also exposed to psycho-social disorders, reproductive health problems, higher newborn mortality, nutrition disorders, drug abuse, alcoholism, increase their vulnerability to non-communicable diseases. Female refugees frequently face specific challenges, particularly in maternal, child health, sexual and reproductive health, and violence. Vulnerable individuals, especially children, are prone to respiratory infections and gastrointestinal illnesses because of poor living conditions, suboptimal hygiene, and deprivation during migration. Social, economic, and political factors in the origin and destination countries of refugees influence their risks for infection with HIV and hepatitis viruses. However, to access proper treatment, their legal status is a barrier. As refugees, they have *"no status" (pg13, Nayeri, 2019)* in the country they come to. Also, it *"takes hours"* to make appointments with the doctors at the refugee camps and *"need a translator" (pg132, 2019).*

Camps often fail to provide the recommended amount of food, and access to proper water which leads to malnutrition. Traumatic experiences in the country of origin, compounded with displacement, loss, lead to severe depression, panic attacks, and debilitating forms of anxiety. According to several studies, many refugees suffer from PTSD which includes- persisting, recurrent and disturbing memories or flashbacks of a witnessed or experienced trauma, along with other symptoms such as negative thoughts and feelings, difficulty with concentration and sleep, feeling detached from people and current experiences, as well as exaggerated startle responses and reactive symptoms such as being irritable, having angry outbursts.

From unofficial refugee camps to legal settlements, the next step is to seek asylum and then citizenship in the country they choose to live in. Seeking asylum is the most difficult as it unfolds the manifold problems, perhaps the reality of the world and its most brutal face in times of need.

An asylum seeker is someone who claims to be a refugee but whose claim hasn't been evaluated.

Many books revolving around refugees have talked about the difficult process to undergo to seek asylum. Ben Rawlence in the book *City of Thorns: Nine Lives in the World's Largest Refugee Camp* quotes –

"Caught between the ongoing war in Somalia and a world unwilling to welcome them, the refugees can only survive in the camp by imagining a life elsewhere. It is unsettling: neither the past, nor the present, nor the future is a safe place for a mind to linger for long (2016). This is where the reality resides and how far we are from reaching the same due to false narratives by different governments about the works done by them. The insights stated below are from the study of the refugee camps and asylums of western and highly reputed, developed countries.

- **Refugees – a prey to smugglers**

Profit-seeking criminals smuggle refugees across borders. When refugees cannot access the legal channels of migration, they are willing to take risks for a better life and are caught by smugglers and become vulnerable to abuse and exploitation. They may suffocate in containers, perish in deserts or drown at sea while being smuggled because smugglers treat them as goods. There are many organized groups and networks operating as smugglers in different regions of the world. Some hospitality providers are one among them as it gives them an easy chance to make extra money with the help of corrupt officials and other individuals. Many refugees are abused or die on the way while many are abandoned en route without resources. *"Police often arrested (such) asylum seekers on the streets, handed them to authorities or left them on the mountain at the mercy of smugglers, stray bullets and the elements" (pg53, 2019).*

These issues pose a problem for other asylum seekers as well in proving themselves as a refugee and therefore undergo a long security check procedure. Two principal smuggling routes as per estimates lead from East, North, and West Africa to Europe and from South America to North America. Between 1966-2011 at least 1691 people died while attempting desert journeys and in 2008 alone a further 1000 deaths occurred as a result of sea crossings.

- **Interview**

The next step after applying for asylum and the security check is the interview. It is a complex process with multiple interviews, dozens of reviews, known as the United States Refugee Admissions Program. An important step in one's application for "refugee status" - it's a chance to put their case across to someone from the Home Office. They make a decision based on what one says. However, it is based on the story about the past that they narrate, which generally fail an individual from seeking asylum. Suffering from mental, physical, and emotional turmoil, the refugees need to make sure that they narrate all the incidents in the correct chronology and yet, if it is doubted, they will be rejected. *"When the refugee refuses to be original or specific her story fails; she is sent away" (pg200, 2019)*. Moreover, there is a certain category of people that are selected. If a *"rape victim"* claims in the interview that they need help and that they are raped, which is why they ran and crossed boundaries, this might not get them a clear pass but, *"The government is targeting me. I am a threat to them,"* will. Because *"Then, you're a real refugee." (pg179, 2019)*

The interviews are not only difficult but humiliating. Especially for the LGBTQs where some are asked: *"to perform their gayness, to prove they have acted on it" (pg182, 2019)*. Moreover, such processes take hours and days until they are satisfied which is not a common possibility because *"they're not looking to rescue. They're looking to reject." (pg171, 2019)*

- **Language differences**

Language is both a means of assimilation and a source of exclusion for refugees. They are torn between different languages when they cross borders. Language again is a deciding factor in seeking asylum. Those beneficial for the accepting country only are granted an asylum. Interpreters from the other country are often biased and don't translate the original information at times, that doesn't let individuals qualify. Young children too face issues because of multiple languages, *"There is no way to forsee what is their academic educational future, so they don't know which language to choose". (Sunaina Kumar, 2019)*

- **Religion Test**

Religion is an important deciding factor in getting asylum and therefore, many convert their religion according to the beliefs of the country they are trying to get in, called as 'conversions of convenience'. There's an increasing anecdotal evidence of Persian refugees converting to Christianity from Islam – both in the UK and across Europe. The UK government has long implemented a test for asylum seekers in an attempt to establish if the claim of Christian conversion is genuine, which is generally the most difficult. Many are even taught to claim themselves as Christians in the interview, to get their applications accepted. But to discourage this, Nayeri writes, *"Maybe we shouldn't lose our minds if we see four Muslims walking down the street, one time." (pg201, 2019)*

Despite all this, if they qualify, *"asylum seekers have 4 weeks; to find a home, a bank account & a job, or they face the streets" (pg221, 2019).* The government calls them sick and the locals of that country don't treat them well too, for *"taking too much, wanting too much" (pg167, 2019), also the "carriers of disease and vermin" (pg107, 2019)* but they cannot dare to return because if they do, *"you'd see hangings, shootings, beheadings". (pg200, 2019)*

Refugees in the Pandemic

During Covid-19, 168 countries fully or partially closed their borders, with around 90 making no exception for those seeking asylum. In the US: although testing is ostensibly free, refugees are less likely to be referred for it. Aside from the threats to health and access to asylum, the pandemic has also undermined the social and economic rights of refugees and the displaced. Being the most vulnerable populations, they were among the first to suffer the economic impacts of lockdown, losing their jobs and being evicted from their homes. Limited access to information due to language and cultural barriers, coupled with the marginalization of refugees, place them amongst the hardest to reach populations when information is disseminated. For many protracted crises due to conflict – including Afghanistan, Syria and Myanmar – returns are still not safe. Therefore, the pandemic has also thrown up new barriers to voluntary repatriation.

Estimated Solutions and Suggestions

1. Resettlement is a vital solution for the most vulnerable refugees – including torture survivors and people with serious medical problems.

2. World leaders also need to put saving lives first. States can stop deaths in shipwrecks and other issues en-route, by investing in search and rescue operations and helping people in distress.

3. Governments should combat all kinds of xenophobia and racial discrimination, investigate and prosecute trafficking gangs who exploit refugees.

4. People should be encouraged to donate essential goods and a sense of help and politeness should be inculcated in them towards refugees, if they come across any.

5. Educational institutions can offer scholarships to refugees.

Conclusion

"People are dying while governments spend billions on border control", says Amnesty International. Refugees suffer through a lot beyond our imagination and need help, most importantly they need to be treated as humans. Refugees are *"not a deluge. Looking down from high above, an honest image isn't a flood or swarm. It's a small stream, or a thin, dying herd, finding its way onto a vast, fertile*

land. What few broken and wretched lives the richest nations take in, they should do so graciously, as the chief consumers of the world's bounty". (pg201, 2019) Hence, they should be rescued, helped and given shelters. Giving life and opportunity to someone is not being biased to others rather being equal to all humans with equal freedom to live.

REFERENCES:

Websites

1. www.unrefugees.org
2. https://www.amnesty.org/
3. www.unodc.org

Articles and Reports

1. Refugee Health- uniteforsight.org
2. WHO Regional Office for Europe Public Health Aspects of Migration in Europe
3. How Rohingya Refugee children are torn between languages - thenewhumanitarian.org
4. Seeking Asylum, Finding Christ, Why Muslim Refugees are converting 2017
5. UNHCR- COVID-19 crisis underlines need for refugee solidarity and inclusion 2020

Studies and Researches

1. Turner, A., Pathirana, S., Daley, A., and Gill, P. 2009, "Sri Lankan tsunami refugees: a cross-sectional study of the relationships between housing conditions and self-reported health." BMC International Health and Human Rights.
2. Jessica A. Marks 2014, Rural Refugee Resettlement: Secondary Migration and Community Integration in Fort Morgan, Colorado

TRACING ETHNIC DISTINCTIVENESS IN AMITAV GHOSH'S IBIS TRILOGY

Dr. Khan Sheehan Shahab
Asst. Prof., Department of English, Alankar Post Graduate Girls College, Jaipur

Abstract

The paper focuses on the many Ethnicities portrayed by Amitav Ghosh in the Ibis Trilogy. It sheds light on the concept of ethnicity, the polysemy and synonymy associated with the term. The study also explores how ethnicity differs from race while discussing traits of the respective concepts. The research also discusses the significance of ethnicity in one's identity as the habits, experiences, food and language are reflected in the identity of a person. The paper deliberates on how the cosmopolitan colonial world paved the way for mixed ethnicities to come into existence resulting in "cultural cosmopolitanism" and "global culture" with regards to nineteenth-century British India depicted in Ghosh's Trilogy (Nagla 193). Language, ethnocentrism, multiculturalism and religion through caste are some of the features of the subject in discussion. The aforementioned characteristics have been explored through characters belonging to different strata, caste, religion and ethnicity, in other words from all walks of life of the colonial society prevalent in the nineteenth century due to which their paths cross at different stages of the narrative in the Trilogy.

Keywords: *Ethnicity, Cultural Cosmopolitanism, Global Culture, Ethnocentrism, and Multiculturalism.*

The concept of 'ethnicity' is often misconstrued with that of 'race' and 'nation,' probably because of the common core elements shared between the three concepts. The core elements of ethnicity are "common descent, common history, and common homeland" (Green 1). Defining ethnicity is difficult as many social scientists have acknowledged and have attempted to define ethnicity as per their perception of the concept which has resulted in the concept suffering from polysemy i.e., having multiple definitions. The relativity of the core elements of the concept with that of the other concepts results in the synonymy of ethnicity.

The term ethnicity finds its roots in the Greek language, *ethnos* and *ethnikos* generally used to address the pagans. But with time, the term was used to refer to the 'Other' section of the populace. The other section in reference kept on changing to represent the people differing from those possessing the agency of discourse. The subjects of discourse being fragmented from the society in the name of ethnicity were subject to change, for example, the aforementioned Greek terms were used for non – Hellenic, also known as pagans, the non-Jewish and non-Catholic.

'Ethnicity' forms a crucial part of one's identity, as the habits, experiences, food and language are reflected in the identity of a person. It is a term that describes the beliefs and practices of a particular group, as the members of an ethnic group may share a religion, customs and language and members bond on the basis of shared culture. It is a phenomenon that has changed since the inception of the term and the consequent concept, i.e. the subject referred to as 'ethnic' has been fluctuating over the years. On one hand, where ethnicity becomes the base of affinity and association for members hailing from the same ethnicity, on the other hand, it also forms the base of distinction among the various ethnicities prevalent in society. Nevertheless, the answer to some societies employing 'ethnicity' as a dividing factor, are pluralistic multicultural societies that respect, acknowledge and accept the differences among the different ethnicities.

'Ethnicity' is a socially constructed phenomenon, as it is based on social parameters whereas 'race' is based on the shared biological traits. One of the sociologists' varied comprehensions about 'ethnicity' relates it to the cultural values of a group. The microcosm of the cosmopolitan world presented by Ghosh in the Trilogy through the colonial world consists of multiple ethnicities viz., English: Mr. Benjamin Burnham, Mrs. Catherine Burnham, Captain Mee, Justice Kendalbushe; French: Paulette Lambert; Chinese: Ah Fatt (also known as Framjee Pestonjee Moddie); and Indian: Deeti, Kalua, Neel, Kesri Singh are the characters representing these ethnicities.

The colonial world paved way for these ethnicities to be mixed which resulted in the overlapping of these ethnicities, for example, the hybrid form of Indian and French ethnicities was Indo – French ethnicity in the character of Paulette Lambert. Indo – Chinese ethnicity is another example of the hybrid blend of Indian and Chinese ethnicities is evident in the character of Ah Fatt (Framjee Pestonjee Moddie).

The cosmopolitan colonial world also resulted in "cultural cosmopolitanism" and "global culture" (Nagla 193). This cultural cosmopolitanism came about through various reasons one of which was the Imperialist Colonial reign of the East India Company, which enabled the interaction between people of varied nationalities, races and ethnicities and abetted Global culture. It was also aided by the process of "acculturation," the assimilation of various cultures, which was a part of colonization wherein the colonizing nations endeavoured to make the colonized nation a replica of its own society (Atal 168). The widespread use of literature in its varied forms and genres also resulted in the people sharing their experiences with those across the globe through fictional or factual accounts leads to the creation of a further hybrid form of culture and identities by association. Hybrid forms of cultures and identities are formed when diasporic beings ingest certain parts of the host culture and endeavour at embracing them. This attempt results in changes that take place, in many aspects of a culture such as a language, cuisine, attire, biology and ethnicity are all "rework(ed), reform(ed) and reconfigure(ed)" (Kalra, et al., 71).

The adaptation of various cultures also occurs due to diasporic displacement, which as suggested by Homi K. Bhabha, takes place either due to "'middle passage' of slavery and indenture," or because of "the 'voyage out' of the civilizing mission" ("The Postcolonial and the Postmodern: The Question of Agency" 191). The realm of Diasporic Studies witnessed the rise of another notable figure apart from Homi. K. Bhabha, Vijay Mishra, nonetheless, both celebrate the varied hybrid formations in their critical works respectively. For example, Bhabha in "Of Mimicry and Man: The Ambivalence of Colonial Discourse" (1994) states that the Third Space is also known as the "interstitial passage" between the fixed markers of identity contests the dominant hierarchy and paves way for possibilities like inversion and hybridity (217). Mishra, rather than focusing on the friction in the creation of various forms of hybridity, emphasizes "vibrant kinds of interaction" taking place amidst the diasporic communities in "New Lamps for Old: Diasporas Migrancy Border" (67). Diasporic studies and encounters developed into a new postcolonial subject, as it frames the premise of contemporary postcolonial thought which reverberates with the diasporic clashes and wistfulness braved by the individuals from the diasporic networks (communities) in the present times, as the extension of diasporic networks is a "social transformation of global significance" (Leon 272).

Ethnicity through its various features has been a notable part of Amitav Ghosh's literary works; the same can be stated for the Ibis Trilogy. Ethnic characteristics such as language, ethnocentrism, multiculturalism and religion through caste can be traced through the course of the Trilogy. The Trilogy is composed of characters who belong to different strata, caste, religion and ethnicity, in other words from all walks of life and it was due to the colonial society prevalent in the nineteenth century that their paths cross at different stages of the narrative. Despite the differences in their the varying aspects of life they were able to interact and understand the plight others came across and it was because they too had suffered the ordeals of inequity at the hands of colonialism and restrictive norms of society, that is, these characters transcend the cultural boundaries and bond over shared experiences of marginalization. Britain's forced cultivation of poppy to procure opium in northern parts of India rendered the peasants helpless as they were threatened and coerced to lease their lands to the East India Company. They were paid with minimal compensation for the loss of fertility of their productive agricultural lands along with what they might have earned from their usual agricultural produce. But a large sum of this amount would return to the Company in the form of exorbitant taxes paid by peasants for lands they owned. To fulfil the conditions of the agreement they signed under duress peasants like Deeti would take their agricultural produce of poppy to the famous Opium factory of Ghazipur (Uttar Pradesh, India).

The agent directing Deeti through the factory would lower his voice to a mere whisper of reverence like "a pilgrim who is about to step into the innermost sanctum of a temple" on entering the assembly room where rows of dhoti clad-men were busy in carefully packing the dried balls of opium *(Sea of Poppies 96).* Ghosh's depiction of the Opium factory as a "cavernous shrine in the high Himalayas" introduces the two-fold intention of the West behind setting up the factory first of which was that it earned the East India Company revenue requisite to maintain its hold over most of the South Asian continent in addition to strengthening the armed forces of the Empire *(Sea of Poppies 96).* And second was to enslave the senses of avaricious natives of its colonies like India by greed and ensnare and cater to those addicted to opium throughout the world with its production of the factory, "Maha-Chin" (China) in this case as Britain wanted to gain the loss of revenue that importing tea from China had cost the nation in the discussion *(Sea of Poppies 97).* The trade of opium was looked after with utmost care, the packaging of the opium suggestive of the significance it held for Britain as the balls containing sticky opium were prepared following the "measure for every ingredient ... laid down by the Company's directors in faraway London: each package of opium was to consist of exactly one seer and seven-and-a-half chittacks (thirteen hundred grams approximately) of the drug" *(Sea of Poppies 97).* The factory was protected like a fortress to guard one of the most lucrative artefacts produced by the Empire; the poppies were processed under the watchful eyes of English "cane-wielding overseers" who did not hesitate in employing the prop of authority over an offender. That is a person who failed to catch a sphere of opium while balancing with one hand over a ladder to place the object on shelves above over sixty-two metres (two hundred feet) from the ground. Severe punishment was inflicted over people like one of the handling boys mentioned in the previous statement, who on falling from such a height was certain to have lost his life. Yet the English men kept in line with the Empire's thought valued opium more than human life and were harshly beaten for their transgression, so much so that Deeti on witnessing such an incident could not bear to hear the shrieks and howls of pain that echoed through the lofty ceilinged chamber of the factory.

At the core of the actions of the East India Company the perception of the West about the East, India in this case, was indirectly revealed as they had chosen to mask to hide their objectives with diplomatic benevolence. The West, in reality, perceived the East as an unexplored land replete with opportunities occupied by people who lacked the sophistication of the European society with reference to the administration, trade, education system and cultural etiquettes. This ideology of the West was another form of ethnocentrism based on which Mr. and Mrs. Burnham looked down upon the orphaned young Paulette. Though the young lady was of French origin, a part of the European sovereign, yet she was ostracized by those hailing from English ethnicity for being different. The young lady of eighteen (Paulette) had been brought up by an Indian Bengali lady of Muslim faith along with that of her botanist father who was known for his rationale which did not necessarily conform with norms of the society. The nurture Paulette was raised with was rather secular and humanitarian, influenced by the French and Indian cultures she was taught and was surrounded with resulted in Paulette becoming a young lady of distinct tastes and choices. The overlapping of ethnicities created a hybrid form of ethnicity namely Indo – French, embodied by Paulette, who in the opinion of members and friends of the Burnham household lacked the education and etiquettes of a white lady of their standing. Attempts of moulding and training the young lady in accordance to the behaviour deemed to be appropriate by people like Mr. and Mrs. Burnham, Captain Chillingworth and Mr. Kendalbushe – the upstanding members and representatives of the English society in colonial India. Their efforts were reflective of ethnocentrism as well as acculturation wherein they not only tried to transform Paulette into a *memsahib* (a proper English lady) but also began training her in the teachings of the Scripture. Through the course of Paulette's stay under the Burnham's roof, she was made to wear dresses discarded by Mrs. Burnham as they had become old fashioned; these dresses even after being tailored were loose and short on Paulette's slim and tall physique, as Mrs. Burnham was a healthy lady of short stature. Dressed in gowns originally tailored for her patron made Paulette awkward as she was liked wearing a *sari* rather than a gown customed to cater to the social expectations of English society. Apart from her wardrobe, Paulette was also ostracized and alienated, at the hands of the staff members of Bethel and the Burnham household, on account of her preferred language of communication. It was a fact that Paulette learnt during her stay at Bethel, before being undertaken by the Burnhams, that Paulette realized that the staff serving in the European households and institutions were equally staunch in their beliefs than their European master. As "the bearers and khidmutgars sneered when her clothing was not quite pucka and they would often ignore her if she spoke to them in Bengali because they had their own preconceived notions on what was appropriate for the Europeans especially *memsahibs* (lady) *(Sea of Poppies 123).* Their opinions were so firmly rooted that perceptions that they only responded to anything instructed in "kitchen-Hindusthani," for, it had become a language of command in European dwellings *(Sea of Poppies 123).*

Apart from Paulette, Ghosh explores linguistic ethnicity through Neel, even though Neel was a native Indian but he was part of the upper echelon of the society with higher education and mastery over the colonial language at his disposal. Neel is seen interacting with people of varied backgrounds, such as the less educated or even illiterate crowds of his estate in Bengali and Hindi and with the administrators of the British East India Company in fluent English. He switches from languages in such a fluid manner that it never occurred to the observer as though Neel transited between languages at all. It was Britain's colonial presence in India wherein the cosmopolitan environment of the society encouraged people to educate themselves in accordance with the British education system. Neel's ability to speak in English came through his father's inability of mastering the art of the colonial language, which strengthened the Old King's wish to educate his son (Neel) in matters beyond his capabilities. Neel's education was a result of the cosmopolitan environment that brought people of varied nationalities, races, ethnicities and faith together under the roof of colonized India and enabled interactions between them. But these interactions were only possible if they had a common language to communicate in, this need resulted in the identification of common grounds and common aspects among the different ethnicities and the gradual overlapping in pure ethnicities, the consequence of which was the creation of hybrid ethnicities.

The pidgin used by Indian traders to converse with people in foreign lands is another example of the hybrid form of language explored by Ghosh in the Trilogy. Bahram Moddie's encounter with Chei-Mei, her nephew Allow are all evidence of the Sino-English languages founded by men of trade to be able to exchange information with foreigners who spoke a different language. Neel's attempts at hiding his real identity and surviving as an educated Indian in the Fanqui town of Canton (China) is another instance of the same, where over time and multiple exchanges with the Cantonese people he was able to converse with Compton. Neel's help in comprehending and translating one of *Chinese Repository's* articles created a reputation due to which Compton's teacher offered a job to Neel, the ensuing exchange is an example of a hybrid and pidgin language and thereby ethnicity explored by Ghosh:

> *'So, Ah Neel! I hear you've been learning to speak Cantonese? Haih Lou-si!' ... 'Yat dihng, yat-dihng, said I, at which Zhong Lou-si said that rumours had reached Canton that the English were planning to send an armed fleet to China. Did I have any knowledge of this? ... Haih me? Really? Where had I heard this? From whom? ... Then he looked up at me and said: So the Indians fight for less pay, knowing that they will never advance to positions of influence? Is this right? None of this could be denied. Jauh haih lo, I said: what you are saying is right (Flood of Fire 45 – 46).*

Hybrid ethnicity was the outcome of not only the biological intermingling between people of varied ethnicities but it was also the result of social, cultural and economic influences and can be traced through the characters of Baboo Nobb Kissin Pander, Neel, Paulette, the Colver Fami (family), Ah Fatt, the Burnhams, the Moddies and the lascars. Hybrid ethnicities also result in the adaptation of cultures through diasporic displacement along with those who voluntarily chose to adapt and absorb ethnic aspects from foreign and new ethnicities. In Bhabha's opinion, diasporic displacement is an outcome of the "'middle passage' of slavery and indenture," or because of "the 'voyage out' of the civilizing mission" ("The Postcolonial and the Postmodern: The Question of Agency" 191). Deeti's journey and the subsequent life as a part of the Fami is an apt example of an adaptation of culture through diasporic displacement where not only does Deeti but her siblings and the following future generations, too, retain qualities from their own ethnic cultures but also add to their ethnic qualities by absorbing the virtues of the new ethnicities around them. The Creole language employed among the Fami to communicate developed from the encounter of their native languages with the different speeches used on the plantations sites they worked on as *girmitiyas* (indentured labourers). Deeti narrating the incidents that revolved around the four years of the *Ibis* embarking from India to Mauritius and the events the ensued, prove the creation of hybrid ethnicity resulting from the confluence of pure ethnicities. The Fami along with the ship-siblings, though, were suggestive of Vijay Mishra's perception about the creation of various forms of hybrid where the author celebrates the new creation rather than focusing on the friction entailed in the creation of the hybrid, where Mishra emphasizes "vibrant kinds of interaction" taking place amidst the diasporic communities ("New Lamps for Old: Diasporas Migrancy Border" 67). The Fami was evidence of the multicultural society where the siblings of the wooden womb hailed from varied ethnicities, nations, faiths and walks of life. The members of the Fami had all retained aspects from their own identities and culture by extension, such as Deeti's faith, intuition and her Madhubani art; Paulette had her love for nature and her distinct cultural identity and Neel's identity reflected his passion for words and was evident in years following their escape in Jodu's *sampan* (small boat) when he along with Paulette would narrate anecdotes and tales of their survival before the *Ibis* and thereafter.

Another manner through which Ghosh explores ethnicity is by portraying how marginalized people of varied societies, too, connected and contributed to the creation of hybrid ethnicity. Bahram Moddie, a downtrodden Parsi, was marginalized and subjected to subaltern treatment for materialistic reasons because he could not speak fluent English and inheriting a lack of financial stability from his ancestors. He was a young man who had just stepped into the realm of jobs and gaining employment and was soon married into a rich and well-established family of Seth Rustomjee Mistrie and was looked down upon by his brothers-in-law for being favoured by his father-in-law. Apart from being suspected by the heirs of the Mistrie family, he shared a marriage of obligation with his wife, Shireenbai Moddie, all these added to Bahram's wish to belong in a world of affection. Bahram found the affection he sought with a widowed Chinese washerwoman, Chi-Mei, who was ostracized for being a boatwoman, which was a polite manner of addressing a mistress or a common woman. Given their status in life and societies, respectively it was evident that their offspring too would be completely accepted in neither Bahram's nor Chi-Mei's world and were referred to as the *achha* people in the Chinese. The word *achha* in Chinese meant a bad man whereas in the Hindustani language it connotes alright and good. *"Jaahp-júng-jai* – 'mixed-kind-boy'...'West-ocean-child'...'salt-prawn-food'...'half Cheeni (Chinese) and half *Achha*'" were the expressions used to address people like Ah Fatt, the natural son of Bahram and Chi-Mei who was half Chinese and half *Achha* (Indian) *(River of Smoke 93)*. The manner of address to the hybrid offsprings revealed the outlook of the Cantonese towards the members of hybrid origin, who were referred to as such because it rendered their efforts at maintaining a monoculture in the Qing Dynasty of China in the nineteenth century useless.

Ethnicity is a crucial part of society with reference to aspects like ethnocentrism, multiculturalism, language and religion considering the circumstances of the present times. With the emergence of modern times, the issues raised by Ghosh resound with the problems braved by people in the present century as they were similar to the discrimination faced by the marginalized characters of the Trilogy. Ghosh explores Ethnicity and portrays a society where discrimination based on features of ethnicity was contrasted with a society that was accepting of plural ethnicities prevalent in nineteenth century colonial India. The subaltern section of the society bonded over the experience of oppression and being ostracized made them tolerant, appreciative and respected the others who had likes and inclinations different from their own. The ship siblings and the Fami embodied the multicultural harmony where the pluralistic and hybrid nature of the new world was embraced by them and the kinship shared among the members of the Fami laid the framework for their descendants. As the radical steps taken by the siblings like blurring the boundaries of castes through marriage and even getting married on ships carrying human cargo became new ethnic customs that are followed by generations even after over a hundred and fifty years.

REFERENCES:

Primary Sources

Ghosh, Amitav. Sea of Poppies. Penguin Books, 2008.

---. *River of Smoke. Penguin Books, 2011.*

---. *Flood of Fire. Penguin Books, 2015.*

Secondary Sources

- Atal, Yogesh. "Globalization and the Future of Cultures." *Modernization, Globalization and Social Transformation,* edited by Ishwar Modi, Rawat Publications, 2012, pp. 163 – 179.
- Bhabha, Homi. K. "Of Mimicry and Man: The Ambivalence of Colonial Discourse." *Location of Culture.* By Homi. K. Bhabha. Routledge, 1994, pp. 85 – 92. *Internet* Archive, archive.org/details/ The Location of Culture BHABHA/page/n1.
- ---. "The Postcolonial and the Postmodern: The Question of Agency." *The Cultural Studies Reader.* (1993). Edited by Simon During, 2nd edition, Routledge, 1999, pp. 189 – 208. *Library Genesis,* 93.174.95.29/main/6E9FEF7B9AD2EEA1DA6365A054FBE90B.
- Green, Elliott. "Redefining Ethnicity" *Paper presented at the Annual Meeting of the International Studies Association, Town & Country Resort and Convention Center, San Diego, California, USA,* Mar 22, 2006. *Semantic Scholar,* pdfs.semanticscholar.org/3b21/fb3e20e6d8f6f238d36e6f26 44db68ba3402.pdf.
- Kalra, Virider S, Raminder Kaur, and John Hutnyk. "Hybrid Connections." *Diaspora & Hybridity.* By Virider S. Kalra, Raminder Kaur, and John Hutnyk, Sage Publications, 2005, pp. 70 – 6. *Academia.edu,* www.academia.edu/20179701/Diaspora_and_Hybridity.
- Leon, Carol E. "Reading Diaspora: The Architectonic Spaces in Preeta Samarasan's *Evening is the Whole Day." Malaysian Literature in English: A Critical Companion,* edited by Mohammad A. Quayoum, Cambridge Scholars Publishing, 2020, pp. 271 – 84. *Google Books, books.*google.co.in/ books?id=SczmDwAAQBAJ&pg=PA271&dq=bhab.
- Mishra, Vijay. "New Lamps for Old: Diasporas Migrancy Border." *Interrogating Post-Colonialism: Theory, Text and Context,* edited by Harish Trivedi and Meenakshi Mukherjee, Indian Institute of Advanced Study, 1996, pp. 67 – 86.
- Nagla, B.K. "Globalization and Its Impact on Culture." *Modernization, Globalization and Social Transformation,* edited by Ishwar Modi, Rawat Publications, 2012, pp. 190 – 202.

FLOW OF FOREIGN INSTITUTIONAL INVESTORS AND MUTUAL FUNDS IN THE INDIAN STOCK MARKET: A COMPARATIVE STUDY

Neha Sharma
Asst. Prof., Alankar Mahila PG College, Jaipur

Dr. Rajkumar Nagarwal
Asst. Prof., Samrat Prithvi Raj Chauhan Government College, Ajmer

Sumita Gurnani
Asst. Prof., S D Government College, Ajmer

ABSTRACT

Mutual funds (MFs) are professionally managed open-ended investment funds that pool money from a variety of participants to purchase securities. Institutional investors, including foreign institutional investors and retail investments, invest in MF. The purpose of the research is to look into the statistical relationship between the FII and the MF. Mutual Funds and FIIs are compared to indicate the entire flow of funds in the stock market.

Keywords: *FII Net Flows, MF Net Flows, SIP, Correlation.*

INTRODUCTION

In the last three decades, large institutional flows have influenced the Indian stock market. Because of their large inflows and withdrawals, FIIs (Foreign Institutional Investors) have always had a significant impact on the Indian stock market.

Our markets just followed their lead; when they invested, our markets rose dramatically, but when they withdrew funds, our markets plummeted like a deck of cards. As a result, this is a critical part of the Indian stock market's operation. However, in recent years, Indian mutual funds have emerged as important players, and their contributions have helped to maintain market stability. Indian mutual funds have formed the foundation of the Indian stock markets in recent years, since they have had consistent inflow from regular investors under the Systematic Investment Plan (SIP).

This article attempts to examine the statistical association between flow of FII and MF into the Indian stock market from 1999 to March 2020. The study will examine the impact both of these institutions have on the Indian stock market, as well as how their flows have changed in response to various global economic crises.

FOREIGN INSTITUTIONAL INVESTORS

After May 1992, foreign institutional investors (FII) were permitted to invest in the Indian stock market.

The new LPG (Liberalization, Privatization, and Globalization) regulations have revolutionised the way the Indian economy operates. When it comes to investing in the Indian stock market, the FII has been a key player, and its impact on the Indian stock market's volatility has been significant. FII has been one of the primary drivers in the Indian stock market, and it has had a significant impact on how the Indian markets operate. In the year 1999, there were approximately 56 foreign institutional investors (FII) registered in the Indian capital market, which climbed to 506 by March 31, 2000.

FIIs made a net investment of Rs. 10,121.93 crores between 1999 and 2000, which reached a five-year high of Rs. 1,01,122 crores in 2019. There were years when they invested Rs. 1,66,127 crores in the Indian debt market and our markets returned 31%, and years when they invested Rs. 1,01,122 crores and our markets returned 14%. FIIs withdrew Rs. 45,811 crores from the Indian stock market in 2008 amid the Global Financial Crisis, and the market fell from 21,206.776 in January 2008 to 7,697.39 in October 2008. This demonstrates the FII's influence in terms of the outflows they have caused and their impact on the Indian economy.

MUTUAL FUNDS

The Unit Trust of India was established in 1963 on the initiative of the Government of India (GoI) and the Reserve Bank of India (RBI). The adventure of Indian mutual funds began. It was in 1993 when private sector players were given permission to launch mutual funds. In April 2020, the total Asset Under Management (AUM) reached Rs. 23,93,486 crores, up from Rs. 47,004 crores at the end of 1993.

There are now 43 mutual funds with over 1000 strategies. Every month, over Rs. 8,000 crores is invested in the Indian stock market under the Systematic Investment Plan (SIP), indicating that the Indian investor's psychology is maturing. Despite the fact that global and Indian markets have corrected by more than 30%, mutual fund flows have been positive. Mutual funds contributed Rs. 1,15,000 crores in 2017 when the Indian markets returned 27 percent, and Rs. 1,20,000 crores in 2018 when the markets returned 5.6 percent, despite the fact that FII were net sellers to the extent of Rs. 32,000 crores. This demonstrates that mutual funds have become a significant support for the Indian stock market, supplying consistent flow of capital to the Indian stock market.

LITERATURE REVIEW

This is a detailed understanding of the study conducted by a number of different researchers. Here is a list of all existing and notable research from the past.

The study "An Empirical Evidence of Dynamic Interaction between Institutional Fund Flows and Stock Market Returns in India," undertaken by Naik, 2015, looked at a three-factor vector auto regression (VAR) model. They discovered that flow of both mutual fund and funds from FII had a considerable impact on the Indian stock market.

A study on the "Impact of Foreign Institutional Investors (FIIs) on Indian Capital Market" was undertaken by Kulshrestha, 2014. He gathered information over 11 year period, from 2000 to 2011. His research sought to determine whether foreign institutional investors had an impact on the Indian capital market, as well as whether FII have an impact on the BSE Sensex and CNX Nifty. He employed regression analysis for this research. He discovered a positive association between the FII and the BSE Sensex and the FII and the CNX Nifty. As a result, if FII investment rises, the BSE Sensex and CNX Nifty will rise as well.

(Kotishwar, 2015) investigated "FII & DII Fund Flow Influence of Mutual Funds Inflows and Outflows His intentions were to define the connection between nifty and FII, DII, and MF inflow and outflow, as well as the impact of nifty on MF inflow and outflow. He gathered data for the study during an eightyear period, from 2006 to 2014. He discovered that mutual fund inflows had a negative connection with the secondary benchmark using correlation, regression, and the granger causality test. During the study period, FII, DII, and Flows had an impact on nifty.

(Meman, 2016) in his research work, investigated the "Impact of Foreign Institutional Investments (FIIs) on India Stock Market." He used data from the year 2000 to 2015 for this study, which spanned 15 years. His purpose was to see if FII had any impact on the NSE Nifty. This study used Causal Analysis. He discovered that there is only one way causation from NSE Nifty to Foreign Institutional Investments (FIIs), and that there is no reverse causality. There is no direct relationship between foreign investments and the movement of the Indian stock market, but there is a direct relationship that the movement of the Indian stock market causes international investors to invest or disinvest in the country's market.

(Dave, 2016) published a study titled "A Study on FII's Investment in Equity Market and its Impact on BSE SENSEX" as part of his research. From the year 2000 to 2015, the data was collected over a period of 15 years. The goal of his research was to see if there was any correlation between the BSE Sensex and FII equity net investments. The Regression Model was employed in this investigation. He discovered that the BSE Sensex has a considerable impact on foreign direct investment (FDI) in India.

A study on the "Impact of Foreign Institutional Investors(FII) on Indian Capital Market" was undertaken by **(Abid, 2017)**. Their idea was to see if there was a link between the Indian stock market and foreign institutional investors. From 2006 to 2016, they collected data for a period of ten years. They employed correlation to conduct their research and discovered that the Indian stock market and FII inflows have a favourable association. As a result, the conclusions of various academics are incongruent, necessitating further investigation into the statistically significant relationship between FII and Mutual Fund Flows in the Stock Market of India.

The study "Effect of Foreign Institutional Investor on Stock Market: Bibliography of Unclassified Literature" was undertaken by **(Budur, 2017)**. His goal was to find out if the FIIs and the stock market had some sort of relationship. According to his research, there is a modest positive correlation between the two, that both the SENSEX and FII inflows have a direct correlation, with the Sensex increasing when there is a favorable FII inflow and decreasing when there is an adverse FII inflow.

"A study on the impact of FIIs and DIIs on the Indian stock market NSE Nifty," according to **(Bansal, 2018).** Their target was to investigate the behaviour of foreign institutional investors and domestic institutional investors in relation to the Indian stock market, to determine whether there is a positive and significant correlation between institutional investors (both foreign and domestic) and stock market returns in India, and to explore the influence of these investors on the Indian stock market. They collected data for this study during an 11 year period, from April 2007 to April 2018. Using trend analysis they discovered that when foreign institutional investors (FIIs) invested in the Indian stock market, DIIs disinvested, and vice versa. They learned that the DIIs and NSE nifty had a strongly negative association, but the FIIs had a somewhat favourable relationship.

(Datta, 2019) conducted a study on the topic "Impact of FII (Foreign Institutional Investors) on Indian Stock Market with Specific Reference to Sensex and Nifty." They evaluated data from the years 2007 to 2018 till the end of April for this study. The focus of their study was to look into the relationship and effect of foreign institutional investors (FIIs) on the Indian stock market, with a clear focus on the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE), as well as the relationship between FII flows and NIFTY returns. They conducted both qualitative and quantitative research on this. According to the findings of the qualitative research, there is a favourable association between FII investments and SENSEX returns. They used correlation and t-test for their mathematical modeling and encountered that there is a moderate relationship between FII's net equity investments and SENSEX returns, as well as a moderate correlation between FII net equity investments and Nifty returns, and that there is a significant correlation of FIIs flows with both SENSEX and Nifty returns.

(Nalini, 2019) conducted research on the topic "Influence of Foreign Institutional Investors on Indian Stock Market," with the intent of examining the impact of FII on different measures of the National Stock Exchange (NSE). They used a few NSE factors and data for this analysis, which spanned a period of 18 years from 2000 to 2018.

For their data analysis, they used statistical tools including correlation and regression analysis. The regression study revealed that FII has an impact on several variables such as market capitalization, Demat trading, and internet trading. According to the findings, the FII has a favourable impact on the Indian stock market, according to their report.

OBJECTIVE

The purpose of this research is to determine the statistical association among both the FII and Mutual Fund flows in the Indian Stock Market from 1999 to March 2020.

SCOPE OF THE STUDY

The research is being carried out from 1999 to March 2020. The net flows of both Mutual Funds and FIIs were evaluated for examination in this study. The study's objective is to explore the statistical relationship between FII and Mutual Funds flow in the Indian Stock Market from 1999 to March 2020.

METHODOLOGY OF RESEARCH

For analysis, the available data (secondary data) was employed. Statistical tools has been used to analyse the secondary data. To showcase the correlation between the two variables, data from several websites such as the NSE, NSDL, Way2Wealth, and CDSL has been compiled for the course of the last 20 years, commencing from April 1999 and ending in March 2020. Mutual Fund Flows (Dependent Variable) is one of the variables, while Foreign Institutional Investors is the other (Independent Variable). Microsoft Excel and IBM SPSS Statistics Version 25 were used to examine the data.

HYPOTHESIS

Null Hypothesis Ho: FII and MF flows have no meaningful association.
Alternative Hypothesis H1: FII and Mutual Fund flows have a substantial relationship.

Correlation, F-Test, T-Test, Regression, and ANOVA were used in this study, and the analysis was completed utilising the aforementioned statistical methods.

DESIGN OF RESEARCH

Casual research, which is intended at evaluating the hypothesis, was used in this study.

Analysis

Table 1

Year	FII Net Flows (Rs. In Cr)	MF Net Flows (Rs.In Cr)
1999	6578.1	-1975
2000	6370.5	-81
2001	13498.1	428
2002	3607.7	1340
2003	30737.1	-4
2004	38704.2	-25
2005	46711.9	1627
2006	36393.1	15225
2007	70057.2	6195
2008	-52986.9	13992
2009	83392.4	-5313
2010	133266	-27876
2011	-2714	6653
2012	128360.7	-20593
2013	113026.7	-21188
2014	97736.08	23326
2015	17946.24	71564
2016	21398.26	47818
2017	51949.06	115946
2018	-32628.28	120280
2019	100887.14	51514
2020	-50981.47	39947
	Correlation	-0.333423348

Source: www.way2wealth.com **Note**: The data is taken up to 31st March 2020

Correlation

The coefficient of correlation is negative coming upto -0.3334 which indicates that the FII and MF flows have a weak relation. For comparison purposes, from January 2020 to March 31, FII withdrew Rs.-122348.56 crores in January 2020, Rs. 3916.59 crores in February 2020, and Rs. - 209 crores in March 2020 respectively, totalling Rs.-1,18,222.97 crores in three months from the Indian stock market, whereas investment made in mutual funds amouting to 68177.28 from January 2020 to March 31 (Rs. 16020.01 crores in January 2020, Rs. 23392.59 crores in Feb 2020 and Rs. 28764.68 crore). The possible explanation for this indifference is due to Pandemic- 2020 (Novel Coronavirus), which has had a negative impact on the global gross Domestic product, and as a result, FII have withdrawn money from equities and placed it in gold as an alternate solution to equity market, whereas mutual funds, which are receiving large inflows through SIP from retail investors, believe that since markets have corrected around 30%, valuations are cheap and one should do value buying so that when things improve, one can earn greater profit.

Table 2

F-Test Two-Sample for Variances

	FII NET FLOWS	MF NET FLOWS
Mean	38650.84318	19414.95455
Variance	3007896968	1581924298
Observations	22	22
df	21	21
F	1.901416503	
P(F<=f) one-tail	0.074527668	
F Critical one-tail	2.084188623	

Source: Compiled by the author using SPSS.

F-Test: The calculated value of the F test is 1.90, which is well below the table value of 2.08 at a 5% level of confidence, indicating that the Null Hypothesis of no significant association between FII and Indian Mutual Fund flows is acceptable.

T-Test: The estimated value of the T-test is 0.190, which is less than the table value of 2.02 at a 5% level of confidence, indicating that the Null Hypothesis of no significant association between FII and Indian Mutual Fund flows is accepted.

Table 3

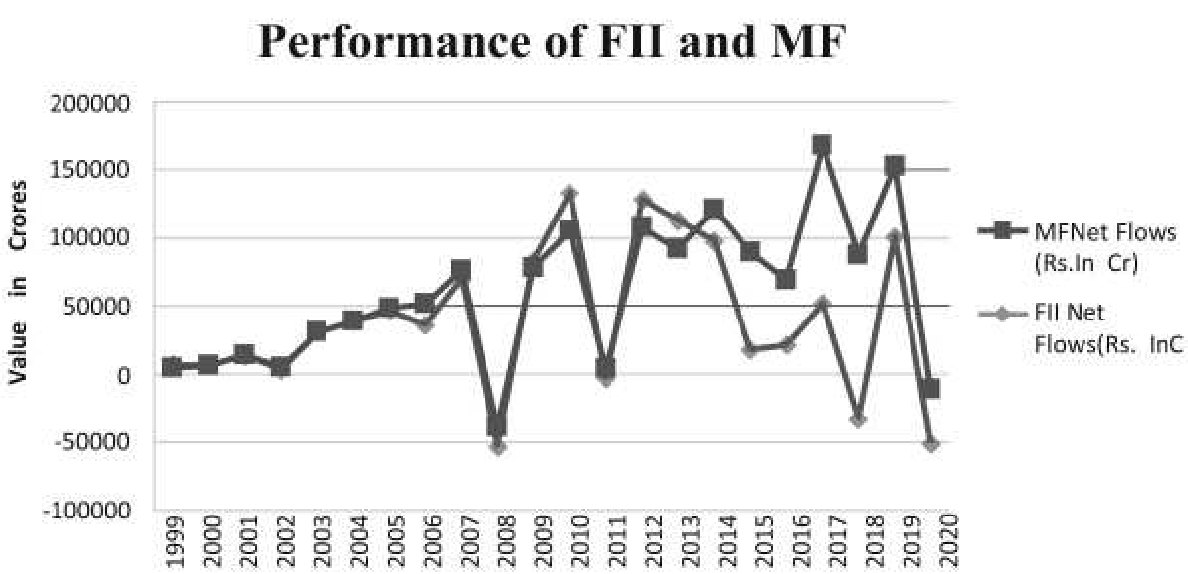
t-Test: Two-Sample Assuming Unequal Variances

	FII NET FLOWS	MF NET FLOWS
Mean	38650.84318	19414.95455
Variance	3007896968	1581924298
Observations	22	22
Mean Difference	0	
df	38	
t Stat	1.331759206	
P(T<=t) one-tail	0.095436406	
t Critical one-tail	1.68595446	
P(T<=t) two-tail	0.190872812	
t Critical two-tail	2.024394164	

Source: Compiled by the author using SPSS.

Chart 1

Foreign Institutional Investors and Mutual Funds Net Flows Trend Analysis



Source: Designed by the Author using Excel.

Interpretation

The Net Flows of Foreign Institutional Investors and Mutual Funds are depicted in the graph above. This graph clearly shows that when Foreign Institutional Invest money in the market, investors pull their money from Mutual Funds, and when net inflow of Mutual Funds rise, Foreign Institutional Investors divert funds from the market. As a result, we can conclude that they have a negative connection in respect of Net Flows.

Average flows: Annual FII flows averaged to Rs. 40701 crore between 1999 and April 10, 2020, whereas that of mutual fund flows were roughly Rs. 20989 crores. The fact that mutual fund flows were relatively low when compared to FII flows in the initial periods, and that mutual funds were only observers in the market with little impact on the Indian stock market. The influx of mutual funds has accelerated significantly since 2015. All figures in Rupees Crore

Year	FII flows	MF flows
2015	17946	71564
2016	21398	47818
2017	53650	112000
2018	-32000	120000
2019	100000	51000
2020	-51000	39000

Source:-www.way2wealth.com

FINDINGS OF THE STUDY

1. There is a negative relationship between FII and MF flows.

2. There is no connection between FII inflows and the inflow of Indian mutual funds.

CONCLUSION

Ever since 1992, when foreign institutional investors were allowed to invest for the first time, they have been a crucial source of capital for the Indian stock market. They have been a powerful element influencing the fluctuations in the Indian stock market since 1999. Indian mutual funds, on the other hand, have flown under the radar in recent years and have emerged as a formidable counterweight to the Indian stock market. Indian mutual funds have been gradually investing through the SIP (Systematic Investment Plan), with Rs. 8000 crores flowing into the stock market every month. Even though Indian MFs invested Rs.120000 crores in 2018, while FIIs were net sellers to the tune of Rs.32000 crores, the SENSEX returned 5.6 percent in 2018, owing primarily to mutual fund inflows. This is in contrast to the Financial Meltdown of 2008, when FIIs withdrew Rs. 52000 crores from Indian stock markets and the SENSEX returned a negative 52 percent, and the European Union Crisis of 2011, when FIIs withdrew Rs. 2700 crores and the SENSEX returned a negative 24.65 percent.

REFERENCES:

- Abid, S. A. (2017). Impact of Foreign Institutional Investors (FIIs) on Indian Capital Market. *IOSR Journal of Nusiness and Management,* 19(6), 42-46. doi:10.9790/487X- 1906034246
- Bansal, P. K. (2018, May). A study on impact of FIIs and DIIs on the Indian Stock Market NSE Nifty. *International Journal of Commerce and Management Research,* 4(3), 67-70. Retrieved from www.managejournal.com
- Budur, R. M. (2017). Effect of Foreign Institutional Investor on Stock Market: Biography of Unclassified Literature. *Asian Journal of Research,* 03-42. doi:10.26739/2433-202x
- Datta, D. B. (2019, December). Impact of FII (Foreign Institutional Investors) on Indian Stock Market with specific reference to Sensex and Nifty. *International Journal of Scientific Research and Review,* 7(12), 85-98. Retrieved from www.ijsrr.co.in
- Kotishwar, D. A. (2015). FII & DII FUND FLOW IMPACT OF MUTUAL FUNDS INFLOWS AND OUTFLOWS- A STUDY. *Madras University Journal of Business and Finance,* 3(2), 87-93. Retrieved fromhttp://journal.unom.ac.in
- Kulshrestha, H. (2014). IMPACT OF FOREIGN INSTITUTIONAL INVESTORS (FIIs) ON
- INDIAN CAPITAL MARKET. IMPACT: *International Journal of Research in Business Management (IMPACT: IJRBM),* 2(3), 35-52. Retrieved from www.impactjournals.us
- Meman, M. U. (2016). Impact of Foreign Institutional Investments (FIIs) on Indian Stock market. *Paripex-Indian Journal of Research,* 5(4), 430-431.
- Naik, P. K. (2015). An Empirical Evidence of Dynamic Interaction between Institutional Fund Flows and Stock Market Returns in India. Asia-Pacific Journal of Management Research and Innovation, 2(3), 219-229. doi: 10.1177/2319510X15588385
- Nalini, D. R. (2019, June). IMPACT OF FII ON INDIAN STOCK MARKET. *EPRA International Journal of Economic and Business Review,* 7(6), 33-39. https://www.sebi.gov.in/sebi_data/commondocs/ar99002d_h.html https://www.ibef.org/economy/foreign-institutional-investors.aspx https://www.fpi.nsdl.co.in/web/Reports/Yearwise.aspx?RptType=5 https://www.cdslindia.com/publications/FIIFPIInvstmntFinYrData.aspx
- https://www.sebi.gov.in/statistics/fpi-investment/fpi-calendar-year/fpi-investmentdetails- financial-year.html
- https://www.bseindia.com/Indices/IndexArchiveData.html https://www.amfiindia.com/research-information/mf-history https://www.amfiindia.com/indian-mutual
- https://economictimes.indiatimes.com/mf/mf-news/investors-rush-to-mutual-fundsasset base- grows-over-rs-6-trillion/articleshow/62238938.cms?from=mdr
- https://www.way2wealth.com/market/fiiactivity/ https://www.way2wealth.com/market/mfactivity/

AATMANIRBHAR BHARAT : A STEP TOWARDS STRENGTHENING ECONOMY

Dr. Aarti Chopra
Principal, Bhavan's College of Communication and Management, Jaipur-302015

Abstract

With the outbreak of Covid-19, the whole world has come to a halt. There is a deep and dark cloud of uncertainty. Due to travel restrictions, the economies across the world are bound to impose and implement adverse policies and regulations regarding manufacturing and export. This has resulted in de-globalization. The condition has brought problems for developing nations like India which were highly dependent on other countries for the availability of various products. Economic fallouts, loss of jobs and dependence on other countries for not only luxurious goods but some essential and lifestyle goods also, India had to face dual problem as negative supply and demand along with the health challenges had to be faced. The only solution for the recovery of Indian economy from the impact of this disastrous pandemic was to become self-reliant. Aatmanirbhar Bharat scheme implemented by the Government of India is the significant step towards the journey of being self-reliant. This paper focuses on the significance and prospective implications of the scheme in the near future. The paper follows the descriptive approach.

Keywords : *Aatmanirbhar Bharat, Entrepreneurship, Make in India, Vocal for local*

Introduction

The pandemic has shown the mirror to the whole world of its dependence on China for manufacturing. It has brought out the underlying problem. Some economies have taken this problem as a challenge which can be converted into an opportunity in terms of manufacturing those goods locally which were being imported earlier. Also, they have realized the importance of manufacturing locally and a perfect supply chain management. Due to the urgent need and resentment for China, economies across the world began to plan to develop their domestic manufacturing economy. Elephant was also keen to run with the speed of a dinosaur carrying its extreme weight to if not beat it in the race but at least to make a pace for survival. The entrepreneurs of India ought to take it as an opportunity to make India a global leader by improving GDP and boosting employment.It was presumed that this step would sail the economy in the positive direction through more employment, freeing investments and better Gross Domestic product.

After the virus, the kind of antipathy the world has for China, the priority of the global leaders like USA and Japan is shifting to India with great hopes. These opportunities will not only take India to be a developed nation in the long-run but also would help to lessen the effects of the pandemic and recovering fast in the short-run. At such a situation, a policy for the sustainable and inclusive growth of the nation was immensely required. Announcement of Aatmanirbhar Bharat made India realized its strengths that are required to make any economy powerful. India has got infrastructure, human resource, technological developments, etc. These demographic and technological advantages may yield huge dividends for India to become a global manufacturing hub. If these resources are used in an optimal way, it would not only make a way to supply the manufactured goods as per the global demand but provide India with the goods manufactured by India and for India as per the *Swadeshi* demand.

Understanding the Mission

Aatmanirbhar Bharat is the mission and vision of our Prime Minister Shri Narendra Modi to make India self-reliant. The announcement of the mission was made on 12th May, 2020. The breakup of the package and the distribution to different sectors of economy was announced by our finance minister Nirmala Sitharaman. The package of self-reliant India mission includes the change in definition of MSMEs, boosting the scope for private participation, increased FDI in defense sector, etc.

There are five pillars of Aatmanirbhar Bharat which are Economy, Infrastructure, System, Demography and Demand. The major focus of the mission is on laborer, middle-class, cottage industry and MSMEs. The motto is to infuse liquidity in them.

Existing and Revised Definition of MSMEs

Existing MSME Classification			
Criteria : Investment in Plant & Machinery or Equipment			
Classification	Micro	Small	Medium
Mfg. Enterprises	Investment<Rs. 25 lac	Investment<Rs. 5 cr.	Investment <Rs. 10 cr.
Services Enterprise	Investment<Rs. 10 lac	Investment< Rs. 2 cr.	Investment<Rs. 5 cr.

Revised MSME Classification			
Composite Criteria : Investment And Annual Turnover			
Classification	Micro	Small	Medium
Manufacturing & Services	Investment< Rs. 1 cr. and Turnover < Rs.5 cr.	Investment< Rs. 10 cr. and Turnover < Rs.50 cr.	Investment< Rs. 20 cr. and Turnover < Rs.100 cr.

Source: Press Information Bureau, Government of India

It signifies the globalization of our local industries. The extension of registration and completion date of real estate projects under RERA is the soothing step for the budding entrepreneurs because due to corona period and subsequent lockdowns, they were not able to complete their ongoing projects in prescribed time. MGNREGS support for the returning migrants and special credit facility for the street vendors is undoubtedly a good step. One ration card for the migrants is apraiseworthy step which covers 23 states providing basic things to the underprivileged class. One more area focuses on strengthening of agricultural infrastructure by setting up of agri-infrastructure fund is likely to bring fruitful results in Indian agriculture. The next dimension focuses on the new horizons of growth for which private participation in space technology is a major reform. For the better efficiency of fuel, privatization has been increased in coal and mineral sector. Ease of doing business by simplifying the norms and reforming corporate laws is a noteworthy step for the new entrants who are fearful of the bigger formalities.

Prospects for the Future

The policy of 'vocal for local' has led Indian economy on the path where the significance of domestic manufacturing is highly understood. It is an opportunity to realize that manufacturing at local level is not only the need of an hour but also a great responsibility towards the citizens of the country. This pandemic situation has also alarmed the economies that research and development, more affordable raw material, cheaper logistics and reasonable quality of production are required for the so-called 'preparedness' to face such unprecedented events. The world is looking at India because of its highlighted "I" list that are Intent, Inclusion, Innovation and Infrastructure (Saraswati, Priya and Ghosh 2020).

The initiative of Aatmanirbhar Bharat is not a one-time scheme but an ongoing process. Though the process is slow, but it will transform the trade relations of India with the global leaders, its own educational and healthcare system and public governance system. One more advantage India can receive at this point of time is the advantage of easy licensing which would have been a trouble or a long process otherwise, especially for export to some countries.

The initiative proposes to follow the idea of 'Swaraj' propounded by Kalidas Chandra Bhattacharya without getting protectionist in nature. Under the current scheme of Aatmanirbhar Bharat, more focus has been on the migrant workers, public health, technology-driven education and state level reforms. The shortcomings and flaws in public sector healthcare were exposed during the pandemic situation. Thus, investing in healthcare is equivalent to investing in grass-root level for the better fruits in future. The vaccine trials and productions are also going in high spirit because of this. The news of defense minister not importing weapons and instead structuring them in India is a great example of it. So, the objective is to become global with a human-centric approach.

Criticisms

- Most of the projects are re-packaged of the old proposals.
- Immediate relief is difficult to be seen as most of the measures would harvest long-term results.
- The focus is more on the supply side rather than the demand side reforms.
- Some critics say that thee mission to become self-reliant would make India cut from the global world and advanced technology and make it a 'frog of the pond.'

Conclusion

Through the policy, government is aiming to bring the economy in pace with the world. The concern of the government for debt to GDP ratio is also being seen. By introducing this campaign, the government aspires to lead a true Swadeshi movement and resonates with the philosophy of enriching and revolutionizing Indian products. However, in the expedition to attain a self-reliant India, it is necessary for the government to decentralize its policies, take decisions for rurallabors, give priority to the poor and underprivileged, draft the policies that are environment friendly and sustainable that are rooted to make India a self-sufficient nation globally. In the history of India, wonders have been already observed with the movements of Gandhi in regard to charkha to become self-reliant. He articulated it as an economic independence and mutual co-operation in the society. Today, when a virus has infringed our freedom, we all shall ‘be vocal for local’ and adapt to new lifestyle of being mutually independent and get empowered socially and financially.

REFERENCES:

- Abhiyan, Gram Swaraj. "Government of India." *Ministry of Human Resource Development* (2018).
- Haldhar, Shravan Manbhar, Indira Sarangthem, and M. Premjit Singh. "e-Book of Abstract: Agriculture Resource Management for Atma-Nirbhar Bharat." *Journal of Agriculture and Ecology* (2020): 1-163.
- Kalam, APJ Abdul, and Yagnaswami S. Rajan. *India 2020: A vision for the new millennium*. Penguin Books India, 2002.
- Purushothaman, P., and E. S. M. Suresh. *"Addressing learning and training needs of rural population in the context of Atma-Nirbhar Bharat."*
- Sheth, D. L. "Grass-roots initiatives in India." *Economic and Political Weekly (1984):* 259-262.