E- TEACHING APPROACH FOR UNDERGRADUATE EDUCATION

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ABSTRACT

The purpose of this study was to learn about supervisors' thoughts on the influence of employing online technology in online classrooms, as well as mentors' experiences with various teaching styles in online classes. Teachers who taught fourteen weeks of online courses used E-software in this study. Calculators have been the focus of most of the research into educational technologies. Learning how teachers and students may use laptops with E-software and technology, with or without the use of handheld devices, as in this study, was extremely valuable. In this technical learning environment, it has also been of particular interest to look into possible improvements in teachers' classroom experiences, students' problem-solving skills, students' learning and deeper comprehension, and other educational outcomes. During the entire semester in a regular course, Class A or Class B, students in undergraduate theoretical programmes, as well as their teachers, have been utilizing E- Software. They utilized the software and/or handhelds continuously during the course. Interactions between students and instructors, both positive and negative, as well as hurdles and concerns, are well-received.

Keywords: *Education, E-Teaching methods, E-software, E- learning environment*

Objectives of the study

Today's use of ICTs, particularly the global crisis that COVID-19 is experiencing, makes e-learning a vital pedagogics. This necessitates the use of cutting-edge instructional tactics and pedagogical methodologies.

- The basic goal is to locate Undergraduate education using an electronic teaching approach.
- To investigate supervisors' viewpoints on the influence of employing online technologies in online classes.
- To gain a better understanding of mentors' experiences with various online teaching approaches.
- To understand how instructors and students can use laptops with E-software and technology to examine the influence of outstanding value.
- The purpose of this research is to see how laptop E-software applications may be employed in undergraduate education courses in the real world.

A Literature Review

- Stephen Norton, Campbell J. McRobbie, and Tom J. Cooper, Exploring Undergraduate Teachers' Reasons for Not Using Computers in Their Teaching, pages 87-109, published online February 24, 2014.
- Although the internet has brought a new means of linking professors and students, distant education is not a new notion. Distance learning, according to Saba (2005), can be traced back to the 1800s; technological advancements, such as radio in the 1920s, television in the 1950s, and thus civilian use of the Internet in the mid-1980s, have all contributed to moving distance education from a fringe activity to a central focus in American education.
- MERLOT Journal of Online Learning and Teaching Vol. 4, No. 3,September 2008 326 Whether the method is referred to as distance education, distributed learning, e-learning, or online education, the goal of research into these methods of bringing instructors and learners together has always been to find the best strategies for improving the student learning experience.
- The concept of active learning is one area of research that has gotten a lot of attention from researchers across disciplines. When instructional strategies involve students in the learning process, active learning is promoted (Bon well & Eisen, 1991).
- When teachers ask students to reflect on what they do and participate in meaningful learning activities, they are engaging in active learning. This could take the form of journal entries or discussion board

comments in an online learning context, as well as traditional homework assignments or simulation exercises. Prince (2004) identified substantial empirical support for the assumption that active learning can dramatically improve data recall and significantly contribute to student engagement in an in-depth assessment of the research around active learning. Active learning tactics have been found to lead to improved enjoyment in online learning as well as greater retention of factual data.

- Dennen discovered that about half of non-posting discussion board behavior among students in online classes felt that they learned through online discussions; students who reported participating in discussion only to meet course requirements and those who focused more on posting than reading messages had fewer positive impressions of discussion.
- The learning object (LO) nomenclature provides a useful foundation for describing Web-based multimedia systems that deliver instructional content in online courses. Learning objects have been the subject of much dispute recently, and definitions vary greatly; yet, the zeal with which proponents and adversaries continue to debate both the explication of the concept and its educational utility is a proof of the concept's durability.
- LOs, as described by Hodgins, are short, reusable instructional components given via the Internet that are meant to meet specific learning objectives. Hodgins compared LOs to LEGO building bricks, or individual course components that can be readily added, deleted, or replaced, resulting in highly customizable course content. Wiley expanded the definition of LOs to include any digital material that will be utilized to promote learning. The LO definition used in this study is loosely based on Hodgins' original concept.
- This study used the literature on student preferences, satisfaction, and perceived learning as a foundation (with special attention paid to active learning strategies), as well as the taxonomy of learning objects as a framework, to investigate the LOs that students preferred, used the most, and were the most satisfied with, as well as the LOs that they believed had the most potential.

Methodology

Scope of the work

- A survey of the literature on a wide range of theoretical and empirical research on the use of technology in UNDERGRADUATE online teaching techniques at a variety of organizations.
- Examining papers such as curricular documents, teacher support materials, and workshop materials.
- The qualitative data for this study was acquired and analyzed using a document analysis of research articles from journals, books, edited volumes, reports, and internet materials, using an interpretive method. The approach for the proposed study is based on document-based analysis.

Methodology Employed

1. It is based on qualitative research.
2. It is also a document-based analytical study.
3. it's the chief characteristics of recent document based analytical research.

Research Materials

1.Peer-reviewed Journals
2. Books,
3.Magazines,
4. On-line reports from some relevant and reliable internet sources.

Data Collection Process

Multiple procedures consisting of studying international and national journals, library consultation, online journals, periodical, newspapers, and monographs have remained employed.

Data Analysis

The study employs current document-based analytical approach. To examine the obtained data, the research also adopts historical and sociological strategies.

The rationale for choosing this project tools:

The use of ICTs today, including the worldwide crisis being experienced by

COVID-19, makes e-learning a necessary pedagogics. This implies the appliance of latest didactic.

Strategies and pedagogical approaches

This research provides an e-learning-based teaching technique for undergraduate students who attend college on a part-timeand regular basis. It also depicts the educational measures taken in the first quarter of the 2020–2021 college year. A comparison is also made with the traditional explanatory technique created with the college's students. The concept of subject applied to the social sciences was wiped out by all of this. The goal of this study is to provide consistency in the use of the e-learning technique in the teaching of undergraduate courses, with the goal of comparing the results of other studies with comparable features.

Proposed Methodology

The validity and dependability of the instrument employed were the first steps in the study procedure. Following that, the sample was chosen and, as a result, a permission application was submitted. The pedagogical proposals were then created. On the one hand, the conventional exposition technique (GC), in which the instructor delivered theoretical topics in the textbook's order and assigned assignments, was still in use. On the other side, there's the e-learning technique (GM), which will be discussed in further depth in the next point. Data was collected at the beginning of the first quarter using a Google Form, which may be a Google Drive application. In other words, the data was gathered.

In other words, the information was gathered. The pupils did this by using their own mobile devices. In the situations when they didn't have one, the centre provided one for them to complete the questionnaire. This data was downloaded in Excel format and then transcribed into the statistical program's format.

Proposed timeline for milestones

Challenges/Limitations of this project

- The poll was performed with only a cursory study of the literature. Because just a small portion of the literature was evaluated for the study, the conclusions reached may not be representative of the total population.
- The research's objectives and aim, as well as the questions, had to be clarified in this study, which was based on a literature survey with biased replies.

Analyses, Detailed Findings and Outputs developed:

- Instruments of Information and Communication Technology (ICT) ICT is transforming teaching and learning processes by infusing life into classroom education environments, including virtual ones. The new digital ICT is a mix of hardware, software, multimedia, and delivery methods, rather than a single technology.
- Today, ICT in Education encompasses a wide range of rapidly evolving technologies such as desktop, notebook, and handheld computers, digital cameras, the web, Cloud Computing, the World Wide Web, Spread Sheets, Tutorials, Simulations, email, Local Area Networking, Bluetooth, Streaming, and DVDs; and applications such as word processors, virtual environments, and simulations; as well as applications such as word processors, virtual environments, and simulations.
- Simulator, Digital library, Computer-Mediated Conferencing, videoconferencing, and Emulator are just a few examples. ICT enables the creation of digital resources such as digital libraries, which students, instructors, and professionals may use to obtain study and course materials.
- At any time, from anywhere.
- Application of ICT in a Variety of Fields ICT may be beneficial in a variety of fields.
- Problem-solving and using mathematics
- Position value • Order and rounding • Equations • Formulae and identities • Sequences, functions, and graphs • Geometrical argumentation: lines, angles, and forms • Transformations • Co-ordinates • Constructions
- Mathematical Applications of ICT Maxima is a programme that solves algebra

problems. The programme is written in Computer Lisp and is compatible with all POSIX operating systems, including Linux, UNIX, OS X, and BSD, as well as in all e-software. GNU plot is used for drawing. GeoGebra is a math programme that may be used by both teachers and pupils. It's a solid platform that helps children learn math and solve math problems on a variety of topics, including vectors, calculus, applied mathematics, algebra, complex numbers, statistics, and more. Shan lax International Journal of Education
S I N C E 1 9 9 0 25
http://www.shanlaxjournals.in SymPy is a symbolic mathematics Python archive.

- SymPy is a symbolic mathematics Python archive. Its goal is to develop into a full-featured computer algebra system (CAS) while keeping the code as basic as possible to make it understandable and extendable.

Discussions

- Discussions about a lack of opportunities for professional development
  Professional Development Opportunities are Limited. There aren't enough possibilities for teachers to get ICT-based training.
- Enough time for instructors to train on the subjects that are relevant to the practice. Curricular training regarding the curriculum is required for ICT and basic ICT training. Providing teachers with educational training is more essential than simply teaching them how to use ICT equipment (Johns, 2004).
- Teachers who participate in ICT-related professional development courses lack confidence in their ICT-related teaching. These courses focused mostly on essential ICT skills and did not instruct teachers on how to connect these tools to their own experiences.
- In order for instructors to train utilizing ICT resources in their particular topics, training material should be combined with educational content technology in training courses. Some criteria related to technical knowledge and abilities, tutorial skills assisted by technology, classroom management, and instructor knowledge and skills surrounding the use of technology.
- Inadequate technical assistance Instructors encounter technical difficulties while using ICT resources, therefore they attempt to avoid utilizing them. • As a result, timely promises of technical assistance can assist teachers in providing relevant lessons and providing lessons.
- Technical issues include lost Internet connections and malfunctioning ICT devices. Teachers have said that the risk of damaging the ICT equipment throughout the event has deterred them from utilizing ICT in their classrooms.
- Although ICT training is useful to teachers, instructors are concerned about a lack of technical assistance. As a result, instructors should make suitable measures to encourage the use of technology.

Benefits of using Software in online methods.

1. Assist elders in efficiently and successfully obtaining digital information
2. Encourage self-directed and undergraduate-centered learning.
3. Creates a stimulating learning atmosphere.
4. In a distant learning setting, encourage collaborative learning.
5. Provide additional possibilities for critical (higher order) thinking abilities to be developed.
6. Improved education, including data collection of high quality.
7. Assist teaching by making course information more accessible.

Most of the teachers have a positive attitude towards ICT

Science/Mathematics background teachers have a more favorable attitude than Arts/Social Science background teachers towards Information and Communication Technology (ICT).

Educational Implications

1. The use of ICT in education helps in developing critical and scientific thinking among the scholars and therefore the teachers. It motivates the learner to

participate in learning activities at any time and from anywhere.

2. It helps in exchange and shares ideas among teachers for professional growth.

3. ICT has also wont to improve access and therefore the quality of teacher training. ICT tools enhance teaching, and facilitate learning using multimodal courseware, Integrate ICT using pedagogical innovations to develop higher order thinking skills among learners.
4. ICT tools like radio, T.V., Internet, computer, laptop, tablets, and lots of other hardware and software applications are often appropriated within the teaching-learning process. These tools can give benefits within the areas of content, curriculum, instruction, and assessment.
5. In India, mainly education has three levels that are primary or elementary level, secondary and senior secondary level, and better level. The quality of these levels are often adjusted by the utilization of ICT tools and techniques.

According to Student's Point of View, Drawbacks are

1. Poor ICT infrastructure in classrooms and the library.
2. Poor internet service during the teaching-learning activities, projects & assignments.
3. Reduced internet speed because of old computers and old operating systems and low internet access packages.
4. Teachers lay more emphasis on PPT creativity rather than the topic content.

5. College website not updated for accessing college information.

According to the Teacher's Point of View, Drawbacks are

1. Technical Skills: Teachers don't have sufficient skill to develop digital contents.
2. Time aspects of digital content making PowerPoint presentation (PPT) making is not an easy task which requires excellent technical skills and patience.
3. Making lessons more difficult: Making electronic content on mathematics education may be a time and money consuming process.
4. ICT restricts the scope of explanation: Some subject contents may require more proof and discussions like problem-solving, drawing mathematical figures, geometrical shapes, drawing curves and graphs, etc.
5. Poor ICT accessibility: Poor ICT infrastructure in classrooms like computers, laptops, and overhead projectors. Poor coordination with ICT centres for day-to-day arrangements.
6. Time constraints to use ICT: Teachers are very busy due to credit-based syllabus system college activities, personal research, and ongoing examinations.
7. The applicability of all subject's content: ICT is not easy to apply to the Mathematics, application of Mathematics, etc.
8. ICT Education is an incomplete transformation of data because it possesses fewer face-to-face interaction, warmth, empathy, and rapport with learners.

Recommendations

1. Teacher training program (B.Ed.) should be based on the use of ICT for all subjects.
2. To reduce the cost of infrastructure can be adopting measures such as locally assembled hardware/software to avoid reliance on imported one.
3. Education policy and curriculum should be revised periodically to meet the demand of the present situations.
4. Teachers' attitude towards the use of ICT and lack of confidence can be overwhelmed by professional development courses conducted regularly.

Conclusions

Several issues with the use of ICT in various subjects were discovered in the literature. Incorporating ICT into education has a favorable influence on both teaching and learning. The purpose of the study was to identify the barriers to integrating ICT into teaching and learning in Teacher-Training Colleges and Undergraduate Courses. In many disciplines of courses, there are some hurdles to integrating ICT in teaching and learning. We want to continue my education at a higher level in the future for professional growth.
. This was a nascent initiative to encourage future UG subject instructors to use ICT into their teaching and learning. The findings show

that the use of ICT affected the perceptions of student instructors regarding problem solving in several subjects. Although they were concerned at first, they loved the training and, more importantly, they gained a new perspective on problem resolution.

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The function of information and communication technology (ICT) is viewed as aiding and increasing the ability of scholar teachers to decode diverse course topics. Most significantly, it altered how teachers perceive difficulties and create strategies to teach a course utilizing technology in order to provide a fresh and strong learning environment for future generations.

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A STUDY ON REMOTE ONBOARDING WITH REFERENCE TO EMPLOYEE SATISFACTION

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ABSTRACT

In the wake of COVID-19, so many business functions are disrupted and businesses are understandably considering the necessary potential solutions to evolve, adapt and make the best of the New Normal for the employees as well as the organization. The study on the impact of Remote Onboarding on Employee Satisfaction plays a critical role in new hire's success and happiness as a review of the available literature indicates that 90% of employees wish to stay in the organisation within the first 6months of work. The primary objective is to study the factors influencing Employee Satisfaction in Remote Onboarding during the Pandemic. The conclusion reveals the factors influencing the process of remote onboarding during this pandemic such as Team Involvement, Consistent Structure, Prepared desk & Equipment, Information Factor, Frequent checkups, etc. The study is obligatory as it results in higher retention rates and higher profits owing to the increased productivity of the employees and helps reduce costs that could be incurred in the recurring recruitment process.

Keywords: *Remote Onboarding, Employee Satisfaction, Pandemic*

1. Introduction

Employee Onboarding

The concept of Onboarding is to describe the process of bringing a new employee on board at a new place of work. A report by Roy Maurer in the SHRM article states that the new employee will be inducted not only about the company and its culture, but also the tools and information needed to transform him as a productive employee. This involves completing all the necessary documentation and steps involved in preparing the employees to commence work and to ensure that they assimilate well into the organization on the first day and beyond. According to The Society for Human Resources Development (SHRM), employee onboarding(also known as organizational socialization) is defined as "the process of helping new hires adjust to social and performance aspects of their new jobs quickly and smoothly, and learn the attitudes, knowledge, skills, and behaviors required to function effectively within anorganization."

Remote Onboarding

Remote employee onboarding is the same process, but when the new hire is going to be working remotely rather than from the office. From an employee's perspective, an onboarding program is an opportunity to get used to a new environment. For an employer, it's a valuable time to share all of the elements that will help new team members be successful as they learn more about their role in the company.

Virtual onboarding allows us to connect with and engage new employees no matter where they are, letting us easily scale the current onboarding process to keep up with hiring rates and allowing you to find talent in newmarkets.

While virtual onboarding often takes place in conjunction with in-person onboarding, many companies are turning to a 100% virtual onboarding process as companies continue to work around the COVID-19 pandemic.

2. A Review Of Literature:

Remote Onboarding

LianneVineberg, the founder and director of talent and recruitment at Toronto-based Talent in the 6ix, an HR and recruitment consulting firm that specializes in helping startups on**"Virtual Onboarding of Remote Workers More Important Than Ever"** says that their organization is insisting on building network among employees and thereby making this process much effective than before.

Jonah Goldstein, Head of Learning at 360 Learning got together with Raphael Moutard, Senior Engineer at Spendesk, highlights the various strategies to meet the challenge of onboarding new employees from afar, and some specific techniques that can be used on **"6 Steps to a Great Remote Onboarding Process - and What to Avoid"** for **360 Learning** which revealed to start strong with great pre-boarding, making onboarding process collaborative, tailoring the onboarding experience for each hire, Using checklists nudges to keep new hires engaged, seek regular feedback and refine the process as and when required, Measuring the success with clear onboarding metrics and To Avoid: Information overload, Constant Communication unnecessarily, Software fatigue unless there is a need.

A Report released by **Economic Times**(May 12, 2020) highlights that the new hires virtual onboarding which are quite innovative. In fact, PM Srinivas, P&G's human resources head for the Indian sub-continent stated that latest apps have been developed for the new hires to work remotely thereby ensuring constant learning and engagement of employees.

Employee Satisfaction

Profit and growth are stimulated directly (and primarily) by customer loyalty. Customer loyalty is a direct consequence of customer satisfaction. Customer satisfaction is heavily influenced by customer perceptions of the value of services they receive. Value is created by satisfied, loyal, and productive employees. Employees who feel a sense of teamwork and common purpose, a strong commitment to communication, and managerial empowerment are most able and willing, to deliver the results that customers expect ("**Employee Satisfaction**", 2005)

Another research findings of a study done by Aberdeen Group reveals that almost 62% of employees who have participated in an appropriate onboarding process, meet the first performance milestone within the first year of working in the company. On the contrary, only 17% of employees who have not been properly introduced to the company achieve the same results. According to the data presented by **SHRM** in **2017**, 54% of companies with onboarding processes reported significantly higher employee engagement. Additionally, providingyour employees with a quality onboarding experience can increase their productivity by 50%. Last but not least, following the data collected by UrbanBound, up to 77% of new hires who had formal onboarding training hit their first performance milestone easily.

Much research studies on employee satisfaction focused on the reduction in turnover and absenteeism rate and its influence on various factors like Motivation, job involvement, organizational commitment, life satisfaction, mental health and job performance (Maloney, &McFillen, (1986); Judge, et. al, (1993)

3. Research Methodology

The researcher has adopted descriptive research design based on clear-cut objectives and self-constructed questionnaire. In this study, Convenience Sampling under the Non-probability Sampling technique was used to gather samples. The population comprises the employees who have been remotely onboarded in the Chennai IT sector. The sample size selected for this study is 39 and the Reliability was found to be 0.940.

3.1 Objectives of The Study

Primary Objective:

To study the factors influencing Employee Satisfaction in Remote Onboarding during the Pandemic period.

Secondary Objectives

- To study the working nature of Remote Onboarding
- To explore the effectiveness of Remote Onboarding received by the candidates during this pandemic
- To discover the level of satisfaction of candidates onboarded remotely.
- To investigate the organization's efficiency in employing the candidate intime through virtual onboarding.
- To inspect the lenience in employing the candidates without constraints.

3.2 Hypotheses Of The Study

- There is an association between the Team Involvement factor and Employee Satisfaction.
- There is an association between Consistent Structure and Employee Satisfaction.
- There is an association between the Prepared desk & Equipment factor and Employee Satisfaction. There is an association between the Information factor and Employee Satisfaction.

4.1 Findings of The Study

Demographic Profile of the Respondents

Most of the respondents (64.1%) were female, of which 69.2% were aged 25 and below. Chennai constituted the highest percentage of respondents (64.1%), by making use of Video Conferencing (82.1%) as the highest aspect during Remote Onboarding.

Regression

Table No.1: Regression Analysis for the association between Team Involvement factor and Employee Satisfaction

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.940	1	13.940	75.802	.000^b
	Residual	6.804	37	.184		
	Total	20.744	38			

a. Dependent Variable: Employee Satisfaction

b. Predictors: (Constant), Team involvment

Inference: The regression test performed shows that the **p-value .000 < 0.05**, thus the null hypothesis **"H0"** is rejected. This explains that "**There is a significant association between Team Involvement factor and Employee Satisfaction**". The Overall Employee Satisfaction on Remote Onboarding varies concerning Team Involvement during the process of Remote Onboarding.

Table No. 2: Regression Analysis for the association between Consistent Structure and Employee Satisfaction

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.138	1	12.138	52.191	.000^b
	Residual	8.605	37	.233		
	Total	20.744	38			

a. Dependent Variable: Employee Satisfaction

b. Predictors: (Constant), Consistent Structure

Inference: The regression test performed shows that the **p-value .000 < 0.05**, thus the null hypothesis **"H0"** is rejected. This explains that "**There is a significant association between Consistent Structure and Employee Satisfaction**". The Overall Employee Satisfaction on Remote Onboarding varies concerning the Consistent Structure in the process of Remote Onboarding.

Table No. 3: Regression Analysis for the association between Prepared desk & Equipment factor and Employee Satisfaction

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.064	1	10.064	34.867	.000^b
	Residual	10.680	37	.289		
	Total	20.744	38			

a. Dependent Variable: Employee Satisfaction

b. Predictors: (Constant), Prepapred D&E

Inference: The regression test performed shows that the p-value .000 < 0.05, thus the null hypothesis "H0" is rejected. This explains that "There is a significant association between Prepared desk & Equipment factor and Employee Satisfaction". The Overall Employee Satisfaction on Remote Onboarding varies concerning the Prepared desk & Equipment required in the process of Remote Onboarding

Inference: The regression test performed shows that the **p-value .000 < 0.05**, thus the null hypothesis **"H0"** is rejected. This explains that "**There is a significant association between Prepared desk & Equipment factor and Employee Satisfaction**". The Overall Employee Satisfaction on Remote Onboarding varies concerning the Prepared desk & Equipment required in the process of Remote Onboarding

Table No. 4.2.4: Regression Analysis for the association between Information factor and Employee Satisfaction

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.945	1	13.945	75.894	.000[b]
	Residual	6.799	37	.184		
	Total	20.744	38			

a. Dependent Variable: Employee Satisfaction

b. Predictors: (Constant), Information

Inference: The regression test performed shows that the **p-value .000 < 0.05**, thus the null hypothesis **"H0"** is rejected. This explains that "**There is a significant association between Information factor and Employee Satisfaction**". The Overall Employee Satisfaction on Remote Onboarding varies concerning the Information provided in the process of Remote Onboarding.

Table No. 4.2.5: Regression Analysis for the association between Factors of Remote Onboarding and Employee Satisfaction

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.896	1	10.896	40.936	.000[b]
	Residual	9.848	37	.266		
	Total	20.744	38			

a. Dependent Variable: Employee Satisfaction

b. Predictors: (Constant), Factors

Inference

The regression test performed shows that the **p-value .000 < 0.05**, thus the null hypothesis **"H0"** is rejected. This explains that "**There is a significant association between Factors of Remote Onboarding and Employee Satisfaction**". The Overall Employee Satisfaction on Remote Onboarding varies concerning the Factors affecting the process of Remote Onboarding.

4.2 Discussions

Based on the findngs, its clear the organization should ensure that the new employee feel comfortable on the first day, by providing a clear and concise explanation of duties and job expectations, integrating the employee into the team, and assigning a mentor will help build relationships and show the newbie that the company values them. Whether a new secretary, associate, or top manager is being virtually onboarded, the process needs to be consistent for all employees, and reflect the company values. A set structure helps the employee, the team, and the administration.

- Apart from this, making sure that

everything including the desk, office supplies, security badges, computer passwords, phone numbers, and access keys sent to a new candidate without any discrepancy plays a major role in addition to the well-defined consistent structure. The most important part of the onboarding process is making sure the new employee has access to all the information they need to know the company and succeed in their position. It's a good idea to set up meetings with subject-matter experts so the new employee can grasp the organization's goals, policies, and practices

4.3 Recommendations

- Scheduling One-on-One meetings between remote team member and their direct manager, connecting with their teammates and relevant project leads, and introducing them to at least one senior leader. It should also be made sure to establish and stick to a cadence of 1:1s.
- Introducing Office buddy where the new remote employee is offered an experienced buddy who has been in-house priorly. This person will be their go-to for questions about workflow, reporting structure, company culture, etcetera.
- The aspect of Gamification can be used more during the Virtual Induction which increases employee engagement and also can be used as an Icebreaker.
- A personalized onboarding plan for each new hire to help them feel welcome and to ensure they're getting the most of their onboarding experience can be provided. While there might be some overlap, taking the time to individually plot out because persons' onboarding process can create a personal touch that's hard to get with remote teams.

4.4 Scope For Further Studies

Since the research confined only to IT Industry and more customized to the remote onboarding during pandemic alone, It would be significant if the same study could be extended to various sectors in which variables such as wellbeing, performance and motivation can be explored in further studies. Moreover, the studywas carried out in a short span of time, where the researcher could not widen the study.

5. Conclusion

The study reveals the factors influencing the process of remote onboarding during this pandemic such as Team Involvement, Consistent Structure, Prepared desk & Equipment, Information Factor, Frequent checkups, etc. Employee Satisfaction during this virtual onboarding is majorly positive and meets the objective of the onboarding process. The need for improvisation of the virtual onboarding process is required as this affects directly the effectiveness, motivation, productivity, and mainly the choice to whether stay in the organization or not.

The study is obligatory as it results in higher retention rates and higher profits owing to the increased productivity of the employees and helps reduce costs that could be incurred in the recurring recruitment process. It is also evident that the main steps on employee onboarding include 4Cs- Compliance, Clarification, Culture, and Connection.

Thus an efficient onboarding process concerns the employee turnover in the organization, rate of retention, employee performance level both during and after onboarding including employee efficiency, and more importantly Employee Satisfaction.

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CONSUMER CONCERNS AND BANK STRATEGIES IN INTERNET BANKING

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ABSTRACT

Internet banking, often known as online banking, e-banking, or virtual banking, is an electronic payment system that allows customers of a bank or other financial institution to execute a variety of financial transactions via the bank's website. Internet banking has resentful the interest of banks, securities trading firms, brokerage houses, insurance companies, regulators, and lawmakers in developing countries. Internet banking and payments are unavoidably on the rise, given the rapid and enormous increase of electronic commerce. Banks profit on overall deposits and loans issued. Consumers have a variety of banks and credit unions to select from, all of which compete for their checking, savings, and lending business. Bank customer acquisition and retention strategies are critical in highly competitive marketplaces for acquiring and retaining assets from new and existing customers. According to studies, Internet banking has a huge impact on cost savings, revenue development, and greater customer satisfaction in the banking industry, and it can be a useful instrument for developing a smart strategy. However, it has brought a number of public policy concerns to the attention of banking regulators and other authorities. Amazingly, trustworthy and systematic information on the reach of Internet banking in the Indian setting, particularly what it means to consumers and bankers, is still lacking. The report fills up considerable knowledge gaps about consumers' perceptions of Internet banking, traces its current expansion, and forecasts the likely scenario. The paper presents the data, drawn from a survey of Internet banking consumers and the services providers (banks) that offer Internet banking and develops a functional model for maximizing value to the consumers, which the banks may choose to adopt Internet banking strategically. The article examines the flaws in traditional banking and investigates consumer knowledge, use patterns, satisfaction, and preferences for Internet banking versus traditional banking, as well as the elements that may influence the bank's decision to implement Internet banking.

Overview

The goal of this research is to look at consumer behaviour when it comes to Internet Banking. The document also offers advice to banks on how to increase the value of their services to customers. Questionnaires filled out by customers and personal interaction, as well as meetings with front-line executives of key firms' online banking divisions, particularly their marketing and customer service departments, and banking specialists.

Review of Literature

R.C.Dangwal, KailashSakalani and SwateAnand, 2010.Technology has become the engine for triggering rapid change. It is no longer considered merely for transaction processing or confined to management information systems. It implies the integration of information system with the communication technology and of innovative application to product manufacturing, design and control.

Radhakrishnan, 2008.As per the statistics, India has experienced a high growth rate in the last four years, the consumers' spending has claimed up to 75 % as a result the Banking Industry is expected to grow further in the future days.

Brodie et al, 2007.Electronic commerce (e-commerce) has become a very important technological advancement for businesses by changing business practices. In the wake of the internet revolution, electronic commerce emerged and allowed businesses to interact more effectively with their customers and other corporations.

Servon and Kaestner, 2008.E-banking technologies have proliferated in recent years, and the availability of a wide range of products has led to increasing adoption among consumers. Internet banking is changing the banking industry and is having the major effects on banking relationships.

FilominaP.George, Dr.S.MerciaSelva Malar, Mr.Sudheendran M. 2009.Today banks have centralized operations and are increasingly moving towards core banking solutions network-based computing, new delivery channels, such as networked ATMs, internet banking, smartcards based products etc.

Miranda-Petronella, 2009.E-banking is the first of those banking services that really economize time, because it allows to the user to accomplish from behind the computer many operations in the bank account, represents the computational solution that allows to the holder to have access at distance at the capitals from his account, purposing to obtain information about his account situation and the situation of the effected operations, of the payment and of the capitals transfers over a beneficiary, by a computational application, of a authentication method and of a communicational average, the e-banking is absolutely necessary in the integration conditions.

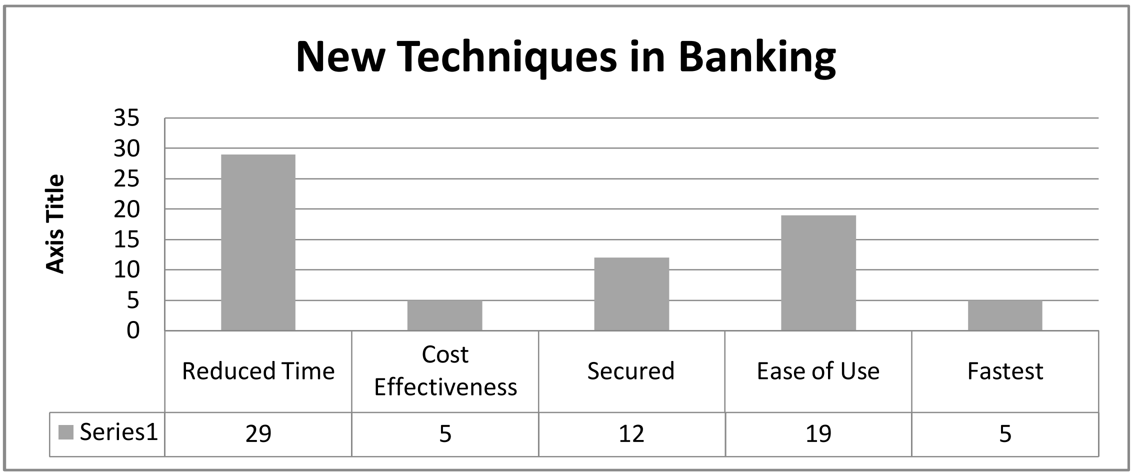
Awareness level

The banking system used to be manually handled, which had a number of drawbacks such as time consumption, data security, and the need for a lot of labour to get good results, among others. As a result, the Internet Banking application was created. The main concept is to give a variety of services to customers via the internet, allowing them to feel more comfortable and flexible in requesting simple chores rather than having to visit the bank every time. Partly due to consumer demand, and partly due to the global banking industry's expanding competitive climate, the trend toward electronic delivery of banking products and services is gaining traction. Customers' demands for more personalised products/services at a reduced price have changed as a result of the Internet. Furthermore, increasing competition from pure internet banks has put pressure on even existing brick and mortar banks' profitability. Only a few banks, on the other hand, have been successful in building effective strategies for fully utilising the Internet's prospects.

Patterns of Internet Banking Use

Which factor promotes you to use the new techniques in banking?

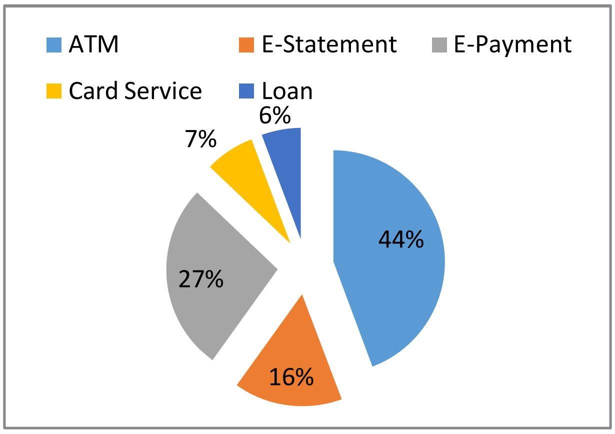
Reduced Time	Cost Effectiveness	Secured	Ease of Use	Fastest
29	5	12	19	5



With the reference to the use the new techniques in banking was reduced time 29% of respondents and 19% of respondents Ease of use for Internet banking.

Customer level of usage of technology:

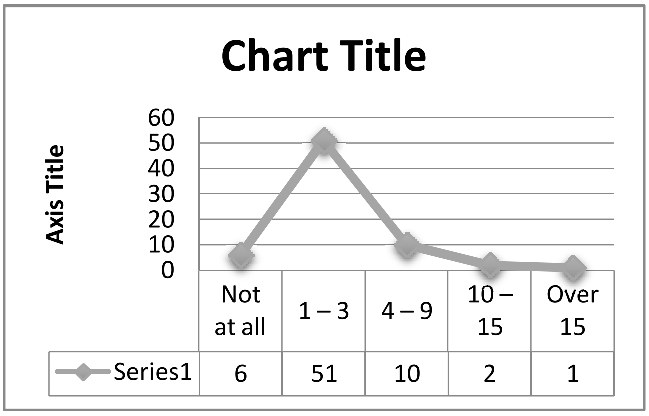
ATM	E-Statement	E-Payment	Card Service	Loan
31	11	19	5	4



According to the data received 31 customers of using ATM, 19 Customers using E-Payment, 11 customers are using E-Statement, others like Card service & Loan process for their using of technology of Internet Banking

Classification of respondents according to visit the bank in a month.

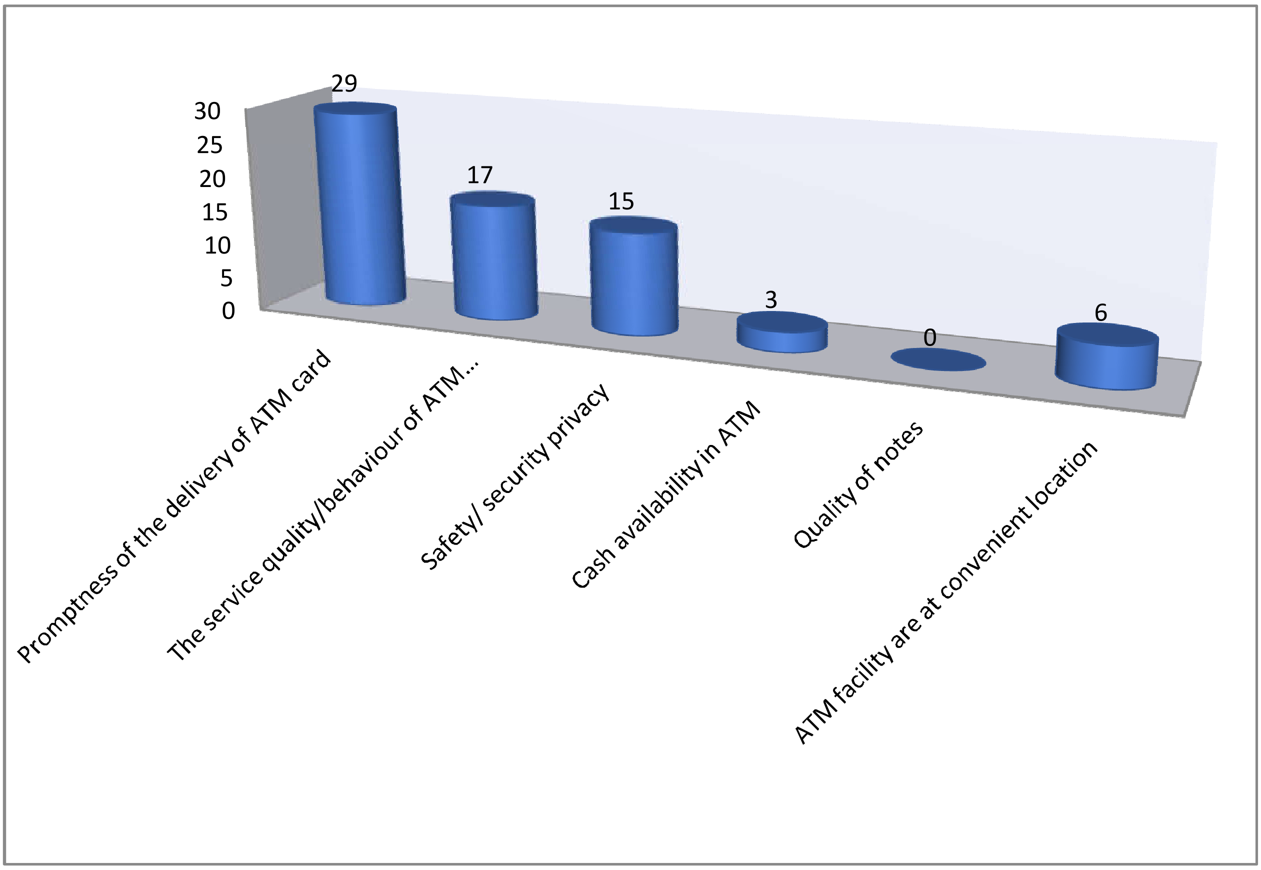
Not at all	1 – 3	4 – 9	10 – 15	Over 15
6	51	10	2	1



From the above represents the data according to respondents visit the bank in a month.6 are not visiting the bank in a month, 51 are visit the bank in a month 1 to 3 times, 10 are 4 - 9 times visit the bank in a month, 2 are 10 – 15 times visit the bank in a month. So, the majority respondents have visit the bank in a month 1 to 3 times

Classification of Respondents According to their Perspective Customer Satisfaction for ATM Facility.

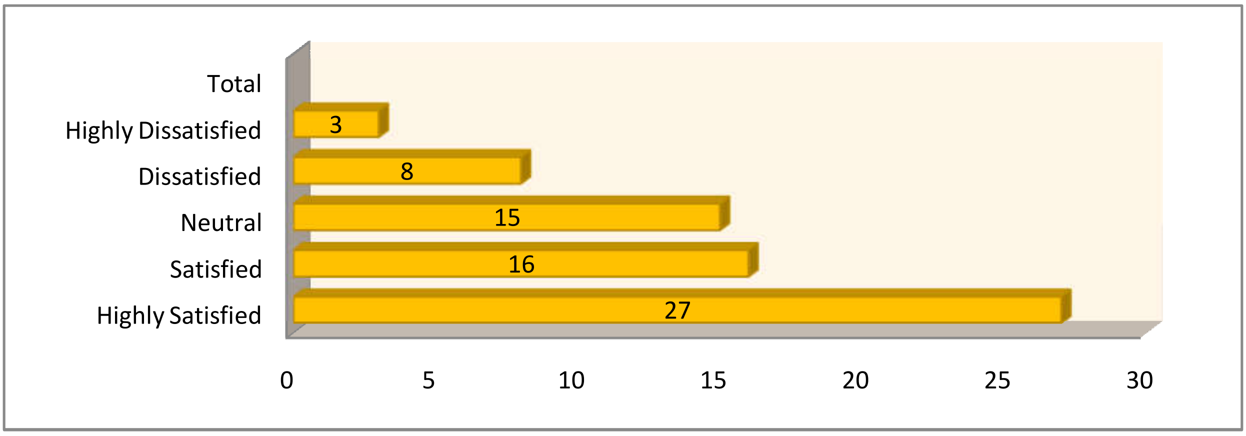
Promptness of the delivery of ATM card	The service quality/behaviour of ATM personnel/guard	privacy Safety/ security	Cash availability in ATM	Quality of notes	ATM facility are at convenient location
29	17	15	3	0	6



The first facility is about promptness of the deliver is 29, second perspective service quality is 17 respondent, 15 respondents are most privacy and security from ATM facility. The average of all respondents are list Promptness and Quality of service only.

Please state the degree of satisfaction if you are using Net Banking.

Highly Satisfied	Satisfied	Neutral	Dissatisfied	Highly Dissatisfied
27	16	15	8	3



27% respondents have highly satisfied with using the Internet Banking services, 16% & 15% are using with satisfied the Internet Banking services and 8% respondents have not agreed with using the Internet Banking service. So, the majority of respondents have satisfied using the Internet Banking series.

Table : Chi – Square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.169E2[a]	16	.000
Likelihood Ratio	77.401	16	.000
Linear-by-Linear Association	40.547	1	.000
N of Valid	70		

Cases			

cells (84.0%) have expected count less than 5. The minimum expected count is .0

Directional Measures

		Value
Nominal by Interval	Eta Visit in Bank Dependent	.875
	Satisfaction using Netbanking Dependent	.809

Hence the p value is comparatively lesser than the level of implicationby ($p<0.05$), so that null hypothesis (h0) is rejected & unconventional hypothesis h1 accepted at 5% level of significance occurs.

Table: Bivariate Statistics Correlation

Correlations

		Patterns of internet banking	customer use Technology
Patterns of internet banking	Pearson Correlation	1	.946**
	Sig. (2-tailed)		.000
	N	70	70
customer use Technology	Pearson Correlation	.946**	1
	Sig. (2-tailed)	.000	
	N	70	70

**. Correlation is significant at the 0.01 level (2-tailed).

Significant level > table value so rejects H_0

Interpretation

H_1 can be accepted since the calculated value is significant so that reject H_0 and accept H_1 alternative hypothesis.

Conclusions

It may be stated that Internet banking in India is still in its infancy, with Indian banks dominating the market. Internet banking is being used by a small percentage of the population. There are numerous dangers involved with Internet banking, which banks must simulate using complex systems and considerable technological use. The functional model can be used to prioritise perceptual variables related to consumer behaviour in order to optimise customer value. To optimise revenue from Internet banking, banks might concentrate on strategic consumer segments. Banks cannot ignore the Internet banking phenomenon, according to global economic experiences, but they must organise their business models to suit Indian conditions in order to obtain a competitive advantage.

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MOBILE PHONE APP FOR IDENTIFICATION OF NUTRIENTS AND MICROBIAL CONTAMINATION IN FRUITS AND VEGETABLES

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ABSTRACT

In agricultural science, the quality identification of fruits and vegetables were categorized with differentiating colour, shape, dimension and texture. The proposed technique will enable to develop a smart phone App which uses intelligent image processing algorithms to scan the attributes of the fruits exhibited in a supermarket and assess its nutritional values like total carbohydrates including sugars like glucose, fructose, sucrose, potassium, magnesium and vitamins like vitamin A and vitamin C, antioxidants along with microbial contamination. This instant information received by the customers, once they capture the images of the fruits using the smart phone will kindle their interest to purchase the fruits based on their requirement. Another added feature of this smart phone App is that, it will enable the customers to identify the microbial contamination in fruits and vegetables. Nowadays, mobile phones have become a part and parcel of our life style, that even a common man possesses one such device. So, this smart phone App once developed will be freely downloaded and installed using the Google play store. The customers, who are the end users, when purchasing the fruits, need to have some related information about the fruits and vegetables which will motivate them to purchase it. This simple technology which is user friendly will facilitate the measurements related to the nutritional value which includes parameters like sugar content, carbohydrates, potassium and vitamins by embedding an intelligent image processing algorithm which will process the photos of the various fruits captured by the camera in the smart phone. This advanced technology of using smart phone App, extracts the color, shape, average intensity and Sum of Absolute Difference (SAD) for various fruits like Mango, banana, orange, papaya and tomato to classify them into three categories like High or Good Quality (HQ or GQ), Medium or Average Quality (MQ or AQ) and Low or Poor Quality (LQ or PQ) with specific and accurate measurements of the total carbohydrates including sugars like glucose, fructose, sucrose, potassium, magnesium, antioxidants and vitamins like vitamin A and vitamin C, displayed on mobile phone screen, instantly. On the other dimension, this novel technology will place an end to the challenge involved, in sorting the fruits and vegetables that can be cultivated using artificial fertilizers which are harmful for consumption. Excessive usage of fertilizers not only decreases the nutritional content but also reduces the taste and flavor of the fruits.

Keywords: *Mobile phone App, Artificial Neural Networks, Back Propagation Algorithm, Genetic Algorithm*

1. Introduction

Currently, no mobile App exists and also equipped with the vision machine technology to measure the nutritional content of the fruits using online detection system. In this work, fruits like varieties of mangoes, bananas and papayas are used as the input samples to train the artificially intelligent algorithms. The origin of this research work lies in developing algorithms for Image Processing and Hybrid Artificial Neural Networks. Further, the quality assessment in terms of the nutritional value will enable the customers to procure good quality fruits. The advantage of this technology does not need any additional device to obtain the related parameters from the color of the fruits [1, 2].

In the Pilot stage of this research work, Images were analyzed for training and testing, from the analysis, testing results confirmed that the required precision and recall values in the ranging from 80-89% and 100% respectively. Features are extracted and used as inputs to train the ANN using Back Propagation Algorithm (BPA). The weight vectors of the ANN are tuned to optimal values using Genetic Algorithm (GA) and Particle Swarm Optimization (PSO). Review of status of Research and Development in the subject [3, 4].

People needing to identify and classify their food according to the nutrients composition so that they may be clear understanding of their diet and make necessary decisions to improve their health. To make predictions on food nutrients composition a model is proposed which uses neural network as the algorithm to conduct the training and implementation of the deep learning mode to make predictions on food nutrients composition [5].

2. Review of Status Of Research

Image processing was in initial level of practical application and it has been used widely in analyzing the quality from the images of fruit (Quevedo et al. 2008). The reason behind the usage of image process, which reveals that the change in intensity value, includes some message about the colour, shape and structure of the items. Prior to harvesting, citrus fruits are used for the first time to identify the count for ripe and unripe fruits on a tree through image analysis (Molto et al. 1992). Subsequently, this technology was subjected to various fruits such as strawberry and Papaya (Bato et al. 2000 &Riyadi et al. 2007) for sorting completely ripen fruit, whose accuracy is in the range of 80-100%. It proves the potential the usage of processing technique in fruits to analysis after harvesting and trader market [6, 7].

In case of climacteric fruits little of ethylene is enough to ripening with appropriate temperature and humidity, however in the case of non-climacteric fruits, ripened fruits were harvested and do not react to ethylene treatment such fruits are grapes, watermelon and critic fruits (Muchui et al. 2010). As the process of continuation, segmentation of colour images are more preferred than the gray images, due to the production of color images with more information at high speed to extract useful message (Ojeda-Magana et al. 2010) [8, 9]. The development of technology also leads to improvise according to the need of researchers and categorized based on the feature set in the muti-dimensional space. The resulting segmentation of image domain based gives the homogeneous region, and physics based will help to find out the actual material boundaries and further feature dependent algorithms are used for analyzing huge number of pixels in the muti-dimensional space (Romani et al. 2003&Allan Hanbury, 2003) [10]. In the detection process of ripening such as clustering algorithm, histogram matching and parameter-based algorithm (Chiunheium Lin et al. 2011 &Ojeda-Magana et al. 2010) [11].

Nowadays, various options are available to identify the ripened fruits and vegetables. However, the computers lack robustness to function on large scale based on the true color of the images, thus the output are mostly gray scale images. In recently improvement of computer system has gone through an enough development in order to get large and true colour images (Chiunheium Lin et al. 2011) [12].

To analysis the quality and grading of agricultural products, automatic detection system is used with help of camera and computer-based technology in recent years (Quevedo et al. 2008). Another detection technique is used to identify the maturity of mango by using the gas sensors (Rodriguez-Pulido FJ, et. al. 2012). Figaro gas sensors were used to detect the gases (Julio, C, et al. 2016). Artificial Intelligence is an inter-disciplinary domain which needs facts in the field of computer science and other application-oriented research. The artificial intelligent is used to estimate ethylene gas during the ripening therefore along with image processing, AI is also used to detect the colour fruits that are ripe or unripe [6, 7].

In this way, the major problem of that the different perceptions of each person will be sorted out by using the AI process after taking the images of the different stages of ripe images during the ripening process (EmnyHarnaYossy et al. 2017)[5]. Nowadays, the food style of the people is such that it has more fats and sugars which require longer time for digestion. This is the major reason for various heart related diseases. To avoid this problem, people must consume healthy and balanced fiber rich diet which includes fresh fruits and vegetables. People are confused regarding the nutritional content of the fruits and vegetables available in the market. So in order to improve the marketing strategy, it will be better to inform the customers in prior about the nutrition value (Bech S, et. Al 2019)

(ElMaraghy et. Al 201) (Huffman, C and Kahn, B.E. 1998) [6].

Research and Development activities rely on development of sensors to access the fruit quality. These sensors are intelligent and built using cognitive techniques (Moskowits, H.R et. Al. 2009) (Busse, M. and Siebert, R. 2018) [7]. Providing the information about the nutritional values of the fruits and vegetables to the consumers are very useful because the intelligent sensors will be used for quality assessment (Cardello, A.V. 2003) (Meiselman, H.L. 2003) [10].

A problem that humans face on a daily basis is how to make a conscious decision regarding our daily food consumption that is nutritious and healthy. By having a tool that helps facilitate the decision-making process of what type of food to eat by showing useful nutritional information to us immediately would greatly improve our lives. By critically analyzing prominent research papers that relate to deep learning techniques to classify food and their nutrients composition, we decided upon the suitable Deep Learning algorithm to classify food nutrients composition as well as the appropriate image dataset to be used. Therefore, in this paper we propose the classification of food nutrients composition utilizing deep learning techniques. The proposed framework uses convolutional neural networks (CNN) as a basis of recognizing images of food and classifying the food into their corresponding nutrients composition such as fats, carbohydrates, proteins and more (Abdul Salam Bin Abdul Aziz and Riyaz Ahamed Ariyaluran Habeeb 2020) [9].

This work is proposed by Parisa Pouladzadeh et al., where a system that classifies and recognizes food items to obtain the calorific values of that item (Pouladzadeh et al., 2016) (Abdul Salam Bin Abdul Aziz and Riyaz Ahamed Ariyaluran Habeeb 2020). These systems lack in features whereby it does not take into consideration the type of nutrition the food is made of [10]. This is a limitation for the user since knowing the nutrients composition in their food is much more important compared to just knowing the number of calories of the dish. Therefore, there is a need for a system that addresses these concerns regarding people's nutritional requirements and to further improve their health.

3. Research Gaps

However, in the case of fruits quality is justified or classified by their texture, shape and color. These features are generally observed through human vision, predominantly in determining the quality of fruits. Thus, the researcher needs to focus on alternative method for detecting the quality of fruits effectually. On the first stage itself, accuracy of estimating the various nutrients present in the fruit is most important where it depends on the pre-processing segmentation algorithm. The machine learning requires intensive training for identification of the fruits. Eventually, automated fruit grading technique uses Image processing Algorithms. A robust, automated fruit quality detection system is proposed using image processing and intelligent algorithms. The existing methods have their own merits and demerits. However, there are many techniques available in recent days for more accurate estimation. But then also the nutrition value differs for different fruits, to make it edible. Thus, there arises a need for an appropriate method to identify the nutrients and induced toxicity of a fruit.

- The prime goal of investigation is to develop a technology that will indicate an appropriate level of the nutrients with AI based smart phone App technology. In order to monitor the quality of the fruits such as Mango, banana, orange, papaya and tomato, and other fruits or vegetables by involving the image processing method and followed by pre-processing. This errorless and noise free images were scrutinized further using artificial intelligence technique to detect the nutritional value and the microbial contamination of the fruits and vegetables. To investigate the nutritional value present in the fruits and vegetables various literatures are analyzed and the research gap in the area is identified.
- The prime work in the objective is to develop a smart phone App which is capable of estimating the nutrients like total carbohydrates including sugars like glucose, fructose, sucrose, potassium,

magnesium and vitamins like vitamin A and vitamin C, antioxidants along with microbial contamination present in the fruit or vegetable using a quality monitoring system using fruit images, which extracts the colour, shape, average intensity and SAD from the captured fruit and vegetable images using the camera in the mobile phones and informing the exact status through mobile phone App.

- The brightness value of the each fruit sample were taken, further the instantaneous monitoring were done in order to identify the microbial contamination.
- Pre-processing was performed, by which the segmentation process carried out and noise and background errors were removed. Further, these images were taken for artificial intelligence techniques, which used to estimate the nutrients in the fruits and vegetables.
- Mobile application is proved to be an efficient expert system for evaluating the quality and nutritional value of the fruits and vegetables.
- Samples of fruits and vegetables are also collected with microbial contamination, to develop an application and also accurate classification using image processing and data mining techniques.

Objectives of This Research

- The following are the objectives of the proposed project.
- To detect the nutrients like total carbohydrates including sugars like glucose, fructose, sucrose, potassium, magnesium and vitamins like vitamin A and vitamin C present in the fruit and vegetable using image processing algorithms
- To cross verify and validate the nutritional value (total carbohydrates including sugars like glucose, fructose, sucrose, potassium, Magnesium, antioxidants and vitamins like vitamin A and vitamin C) of the fruits and vegetables using the proposed vision machine technology.
- To introduce a smart phone App for instantaneous monitoring and detection of the microbial contamination of the fruits and vegetables, so that it increases the marketability.

5. Methodology

During the detailed literature analysis, it is observed that there are following gaps which are identified and listed. The existing system is not equipped with the following technology.

- Vision machine technology to detect the type of the fruits and vegetables the nutrients like glucose, fructose, sucrose, potassium, magnesium, antioxidants, vitamin A and vitamin C present in it using image processing algorithms.
- Cross validate the nutritional value of the fruits and vegetables using the proposed intelligent image processing algorithms in comparison with the conventional estimation methods.
- To yield an instantaneous information about the microbial contamination.
- Replace the laboratory assessment to identify and monitor the quality of fruits with an intelligent smart phone App

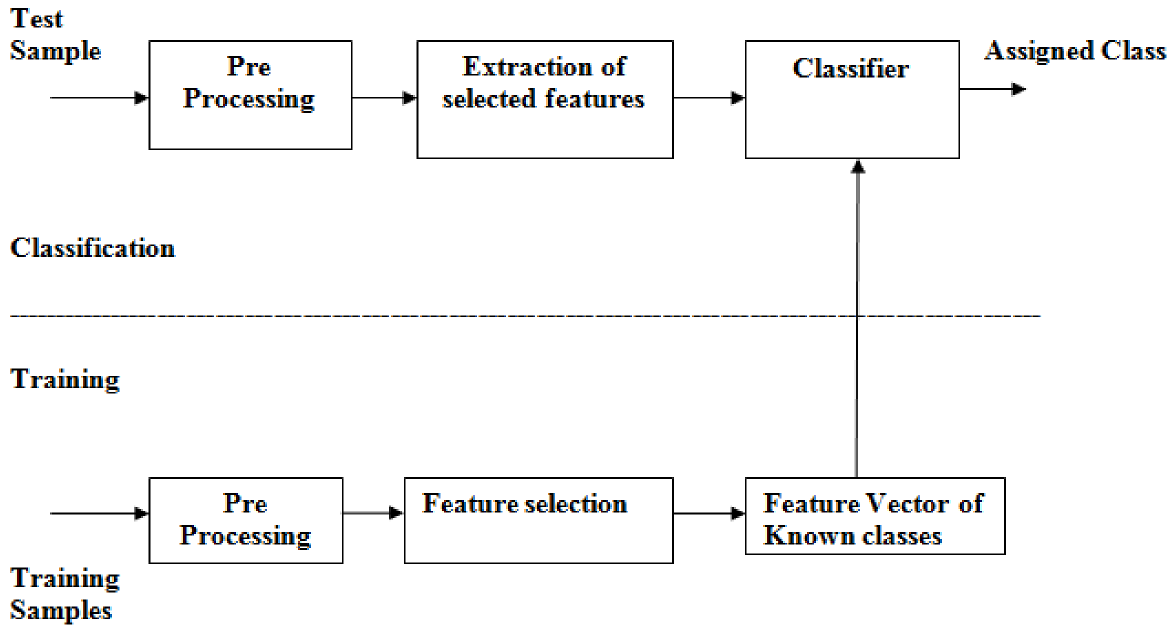

Figure 1. Methodology for estimation of nutrients and microbial contamination of fruits using image processing.

The fruit and vegetable images are captured using a mobile phone camera, as shown in Fig.1. Further, the acquired images are taken for pre-processing, scrutinized ahead of feature extraction and classification as shown in Fig. 2. As next step, the pre-processing is carried out dithering and edge detection. The filtering removes noise. Boundary from the images of the fruits and vegetables are detected using edge detection algorithm followed by the feature extraction. The number of colors is reduced by using an approximation algorithm. Dithering is performed to change the colors of the pixels also increase the number of pixels in a neighborhood. This technique will produce an original RGB color. RGB to gray conversion is a low-level pre-processing and mainly two methods are used for RGB to GRAY conversion. Unwanted noise is removed by using the average filter. The split and merge algorithm are used in the noise reduction process. Feature extraction is a measured data and derived the features of the images. Mainly used features are Shape, Size, Texture and colour. However, the different features extracted from the fruits. This morphological operation erosion and dilations are used for elimination of small objects. For the classification of fruits different types of classifiers are used.

The Feed Forward Neural Network (FFNN) for ethylene gas estimation is made possible by using the Back Propagation Algorithm. FFNN consists of one input layer, 'H' hidden layers and one output layer. The nodes in the hidden and output layer have sigmoid activation function. Fig. 2 is the schematic representation of the FFNN architecture.

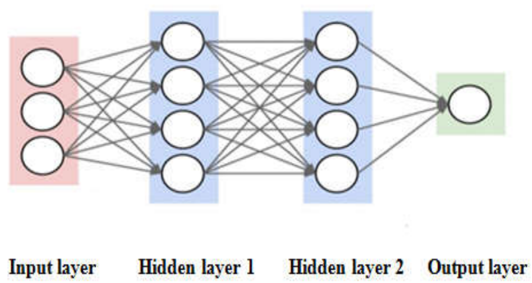

Figure 2. Schematic representations of Feed-Forward Neural Networks

Feed Forward (FF) architecture of trained with Back Propagation Algorithm (BPA). To perform simple arithmetical operations, Feed Forward Neural Network (FFNN) is built by exceedingly interconnected processing units (nodes or neurons). The intrinsic characteristics of neural networks such as topologies (number of unknown layers and connection between nodes in the unknown layers), power vectors and activation function such as sigmoid, hyperbolic tangent and sine which are used in the unknown layers and output layer are used. A perception or Adaptive Linear Element

(ADALINE), computing unit forms the fundamental building block for neural networks. The outline of input array vectors by weight vectors. Information flows in a feed forward manner from input layer to the output layer through unknown layers. The number of nodes in the input layer and output layer is fixed. In the proposed work, the network parameters such as the number of nodes in the unknown layers and the number of hidden layers are used in trial-and-error method. The major target is the value of the ethylene gas concentration and the normalized values of the features are used for obtaining results from the various intellectual classifiers. Overall, 102 images collected (80 images for training and 51 for testing) are considered for training and testing purpose with FFNN using BPA algorithm. The confirmation of FFNN, four features as input and one output is used.

Genetic Algorithms (GA) are based on biological progress and can be used to explain a wide variety of problems. As for the given problem, GA generates a set of possible solutions and evaluates each in order to choose which one of the solutions are fit for reproduction. Therefore, a particular solution which gives a fit output, so then it will have more chances to generate new solutions. The GA uses three main types of rules at each to produce the next generation from the current population. Genetic algorithm is a kind of Artificial Intelligence which is used to train the neural network. The extracted features are used for the estimation by Genetic algorithm and trained along with ANN. The training and testing patterns were used in order to identify the ripening with respect to intensity.

In the proposed work, pre-processing includes dithering, filtering, histogram analysis and morphological closing operation. The extracted features can be used for training of FFNN using BPA. Testing and validation results to be collected will have maximum classification performance. It was understood that classification performance which could improve the pre-processing stage of the acquired images. This has proved from our output, as the efficiency percentage has been increased significantly.

In this segment another AI method with Genetic Algorithm (GA) and Particle Swarm Optimization (PSO) are also implemented to overcome the challenge of costly and laborious process. Additionally, other AI based techniques like GA and PSO with BPA are also to be tested as shown in Fig.3. Physiological and biochemical change of the natural product are of real worry for understanding metabolic procedures such as natural product aging, relaxing and general senescence. In addition, they are of significance in deciding business rehearses what's more, post collect necessities. Even though it is incongruous to expect to improve the nature of produce after collect, however it is conceivable to hinder the rate of unwanted changes. The post reaps taking care of framework must intend to guarantee that the organic product comes to the showcase in the condition required by the purchaser or shipper.

The support of physical and chemical properties that give quality to reaped organic products depends predominantly on collect development and mostly upon the capacity to force conditions that limit changes of these characteristics. Gather time is essential to acquire a top-notch organic product with great stockpiling potential. For the most part, the gather of develop, unripe natural product has been accounted for to improve the storability and transportability, while organic product collected at ready stage will have a shorter life and flavour misfortune may happen before consummation of the advertising procedure. The ripening process need to monitor and analysis quality of the fruits by conventional method and other modified or improved methods were used to analysis the better prediction. This type of analysis would be efficient and accessible technique to detect the nutrients and induced toxicity of the fruits.

Mobile Application Development Architecture

The following block diagram explains a high-level architecture of the mobile application (to be developed). This architecture will have –

- **Mobile Client** – This will act as a user-interface and can be installed on their mobile phones.
- **Server** – which will be deployed on AWS as an API, and this will be responsible for the data processing and notifications.

The following are the various components present on the mobile application -

- **Mobile Application** - is the container which enables the user to authenticate and capture his/her nails. This application will consume the various APIs developed, to process the captured images and detail out the deficiencies based on the algorithm.
- **Server APIs** are the connectors which bridge the mobile application and the data processing engine hosted on the application server. These API utilize its own authentication mechanisms for a secured data transport.
- **Data processing engine** is developed with a pre-approved algorithm to process the captured images, match it with the pre-built models, and provide a response back with the details. This module also has its **data ingestion** module for the administrator to upload more samples, or tweak sample results.
- **Error Handling** module provides the base framework to capture erroneous data, or any server related downtime. This module will be responsible for providing the user readable messages.
- **Application Servers are the containers to host the server APIs.**

6. Results and Discussion

The standard values of total carbohydrates including sugars like glucose, fructose, sucrose, potassium, magnesium and vitamins like vitamin A and vitamin C along with microbial contamination. These are the reference values that are obtained from the standard nutrition table. By analyzing the various samples in laboratory, the parameters like total carbohydrates including sugars like glucose, fructose, sucrose, potassium, magnesium and vitamins like vitamin A and vitamin C along with microbial contamination which will be estimated and recorded.

Then the values for total carbohydrates including sugars like glucose, fructose, sucrose, potassium, magnesium and vitamins like vitamin A and vitamin C will be estimated by the hybrid ANN architecture with the features extracted from the fruit images (coded in MATLAB) using simulation platform will be recorded in the second column. Thereafter, the results (total carbohydrates including sugars like glucose, fructose, sucrose, potassium, magnesium and vitamins like vitamin A and vitamin C) and microbial contamination from the smart phone App will be obtained; when the fruit and vegetable images are captured using the mobile phone camera will be recorded. The deviation for the above cases will be calculated to ensure whether the estimated values are within optimal range. The same table needs to be generated for testing and validation phase to ensure the optimal performance of the smart phone App.

The conclusive weights are taken once the training of FFNN with BPA is over. Testing the estimated values of all the nutrients and microbial contamination is finished with conclusive weights acquired in the wake of preparing to accomplish feed forward control. The yields of the FFNN prepared with BPA are appeared in Figure 4.

The Genetic algorithm (GA) has been used along with the separated highlights is utilized for preparing the ANN. The estimation by GA, is the hereditary calculation at each progression to create the cutting edge from the present population. This AI is an interdisciplinary field that requires veracities in software engineering, semantics, brain science, science, reasoning criteria for genuine research. Further, the estimation is revealed in the figure 5

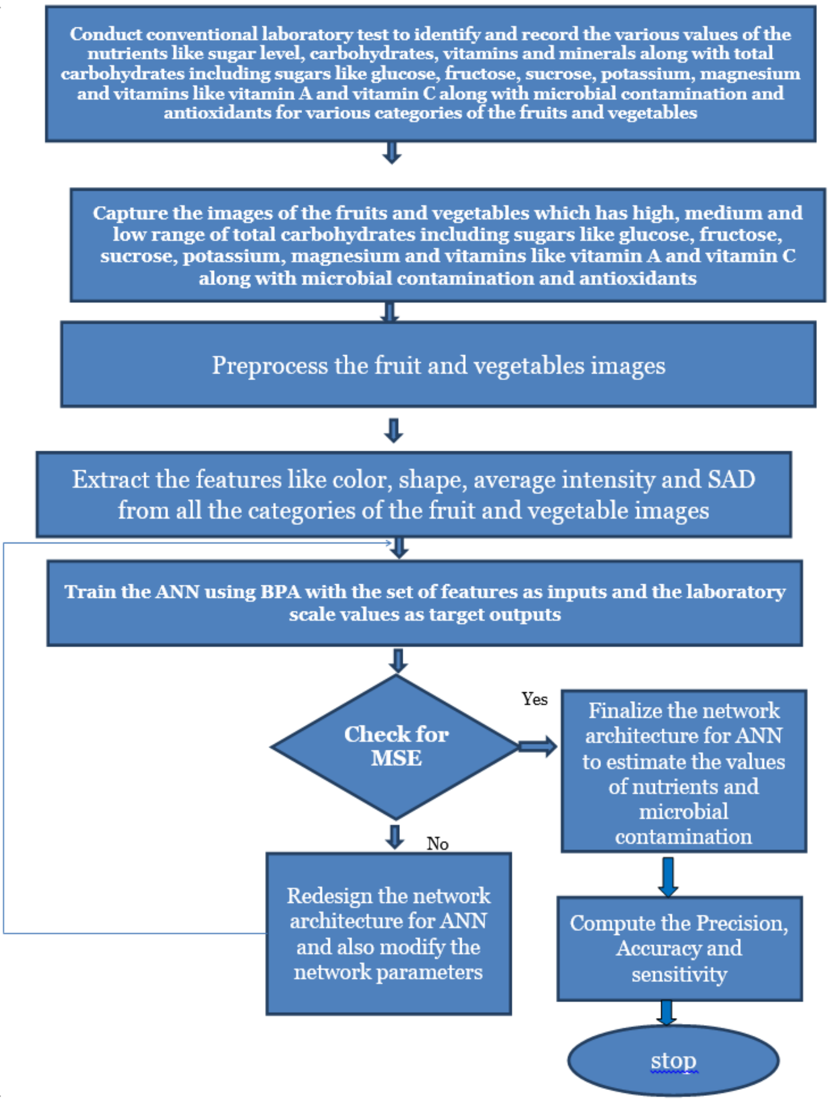

Figure 3. Flow Chart for Training the AI Algorithms

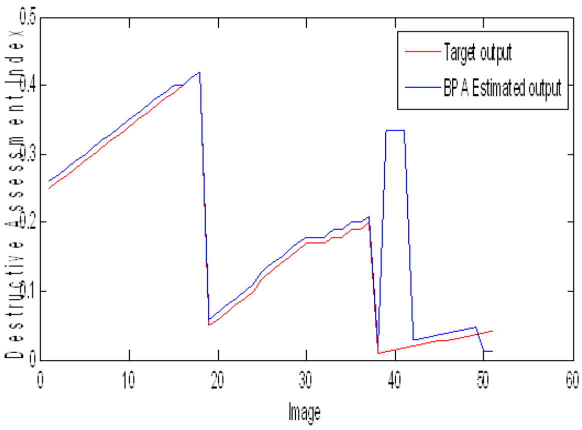

Figure 4. Estimation of nutrients and microbial contamination by BPA

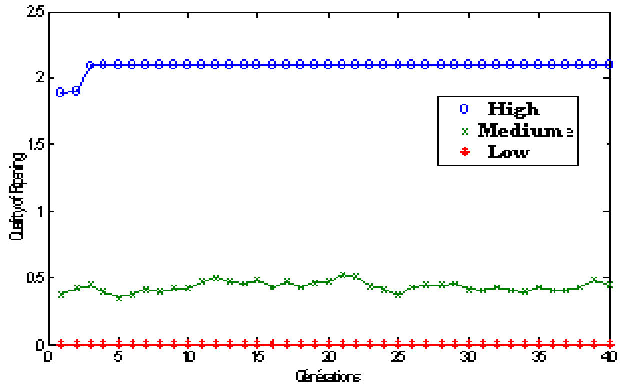

Figure 5. Estimation of nutrients and microbial contamination by BPA with GA

Table 1 Comparison performance measures

Comparison /Confirmation	Class 1		Class2		Class 3	
	Recall	Precision	Recall	Precision	Recall	Precision
BPA+GA	1	1	0.894	1	0.85	1
BPA	1	1	0.8358	1	0.8	1

With the fifty one images of fruits and vegetables, the training and test set were evaluated and final results of test and confirmation proved the required precision and recall level ranged from 80% to 89% and 100% respectively as in Table 1. Thus employing the soft sensor will help to detect the ethylene gas concentration in the fruit ripening process.

7. Conclusion

Totally, 102 images collected (51 for training and 51 for testing) from the ripening room. Pre-processing and feature extraction is carried out initially. The preprocessing includes dithering, filtering, histogram analysis and morphological closing operation. The extracted features can be used for training of FFNN using BPA and BPA with GA. Depending on the nutrients and microbial contamination the fruits and vegetables are classified as high, medium and low quality with their respective nutrients values and the status of the microbial contamination if present. The incidental parameters displayed on the screen of the mobile phone will facilitate the buyers to purchase the required fruits and vegetables.

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GREEN ENTREPRENEURSHIP: A PARADIGM SHIFT FOR SUSTAINABLE DEVELOPMENT

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Abstract

This paper tries to study and understand the scope and challenges faced by the Green Entrepreneurs in India. It attempts to find the wide scope for Green Entrepreneurship and potential business opportunities in the field of marketing of green / eco-friendly products and services for the entrepreneurs and the shifting pattern consumers in buying of products and services which provides them a healthy life and d safeguard from the harmful products and services. Green Entrepreneurship paves the way for growing green businesses and provides opportunities for entrepreneurs in the years to come.

Keywords: *green entrepreneurship, sustainable environment, green businesses, green entrepreneur*

Introduction

Nowadays, the publications such as News Papers, Magazines, Researches and Government data reveals that the products and services provided by the large manufacturing companies are harming the human health as it contains the harmful chemicals and ingredients. At recent past, this makes the consumers to think over in shifting of using organic and eco-friendly products and the which produce such items are growing up to the mark and it has better future in green businesses.

Green Entrepreneurship

"Green Entrepreneurship" has its three components which makes sustainable development in the field of business and economy such as traditional ingredients, social ethics and sustainable entrepreneurship. Hence, "Green Entrepreneurship" is a cost-effective activity whose products, services and methods of production have wide scope for growing business opportunities that helps the newly started businessmen in the years to come and they can grow more and more than the business conglomerates. Green Entrepreneurship safeguards the environment in all possible ways and gets support from consumers, society and the government.

The following could be the results of Green Entrepreneurship:

- Shifts consumption pattern of consumers from products made up from harmful ingredients into organic products.
- Reduces the negative effects on the environment.
- Provides solutions to the problems of production and consumption of large manufacturing companies' products.
- Emerging Green Entrepreneurship lead to sustainable economic development through new business ideas and business models.
- Finds and discovers the potential market and consumers which makes high demand for products and services.

Green Entrepreneurship: The Labour intensive field of business

Most of the products and services produced through models, methods and ideas of production are follows the concept of "green" which reduce the technology, sophisticated methods, large volume of production, as it harms the health of the consumers. Moreover, it will be nice to see and use, but the utilities out of which leads to harmful. When it comes to green production by using more labours in production, leads to more opportunities for employment directly and indirectly.

Green Entrepreneurship and Potential Opportunities:

Green Entrepreneurship not only provides opportunities for starting up of businesses, but also have high demand for its products and services in the market as now a day's consumers are changed their behavior in the purchasing and consumption pattern and purchases eco-friendly products and consume the same, because of the awareness comes into their mind on their health and the environment. Now a days," green" is the word which attracts more the consumers and they like more organic vegetables, fruits, food grains, etc. even homes, villas and apartments.

Food Industries

Food industries are the major source of potentiality for the entrepreneurs to produce and supply of green food products as the consumers aware more about organic and eco-friendly products. The consumers who loved more the fast-foods, pizzas, burgers and all other ready to eat items, are moving towards using of natural food grains and the food items made out of organic methods. The junk foods bring the consumers more health issues such as obesity, cancer, sugar, heart-diseases, etc. Green Entrepreneurs can make use of these negative problems into opportunities by providing eco-friendly healthy products to the consumer society.

Green Energy

The electricity which is produced through atomic nuclear process makes the people that fear of lives as the wastage produced by the process harm the health of the people. Instead, they want green energy by using solar panels, wind mills, etc. in the energy sector, the entrepreneurs can invest more and make use of the potential opportunities by making them in the energy production. Government too provides subsidies to support this type of energy making projects.

Consulting Businesses

Consultancy services for green businesses are growing more at recent times. Green Entrepreneurs can start and provide services on organic farming, bio-gas production, marketing research on opportunities for green business, green homes, green transportation, eco-friendly fast moving consumer goods and its marketing, handicraft articles, etc.

Transportation

The growing prices of fuels used in the commercial and personal use vehicles makes the users to find alternatives like rechargeable battery vehicles and bio-fuel vehicles to be cost-effective and environment friendly. In the years to come, the electric and bio-fuel vehicles become popular and it provides opportunities to entrepreneurs to produce and market or through dealership, Franchisee, etc.

14 Indian Startups & Projects That Are Helping the Country Go Green

1. Digital Green – Multimedia solutions for rural education

Indian entrepreneurs are looking to disrupt everything right from the way we shop, to how we order food, to how we get a leaking tap fixed. However, along with excessive consumption, come problems of waste, pollution and environmental damage.

But fortunately, there are startups that are looking to mitigate these environmental hazards. Combined with a love for social good and a technology-led product, they are helping the country become greener. In India, where corruption and public apathy usually put environmental causes in the background, it's heartening to see private players coming out and focusing on this sector. We bring you 14 such entrepreneurs and activists who have started ventures towards sustainable development focusing on waste management, alternative sources of energy and awareness platforms.

2. Waste Ventures – Waste management

Waste Ventures India averts up to 90% of waste from dumpsites and produces nutrient-rich organic compost. They sign multi-year contracts with local municipalities and employ waste pickers at their processing units to segregate waste. The Delhi-based startup, launched in 2011, has 44 projects lined up this year. Two of these have been kickstarted in Andhra Pradesh villages.

3. EnCashea – Collecting waste in exchange of cash

Bengaluru-based Encashea collects scrap waste for cash in select areas of the city. They pay you for segregating your recyclable scrap properly, lowering its environmental impact.

Encashea has an Android app that makes it easy for users to request for a pickup. EnCashea has the prices for trash listed on the website. While books can go for up to Rs. 6 per kg, e-waste can be sold for upto Rs. 10/kg.

4. Fourth Partner Energy – Making solar energy accessible

Founded in 2010 by Vivek Subramanian, Saif Dhorajiwala and Vikas Saluguti, Fourth Partner Energy (4PEL) focuses on financing and building rooftop solar projects for commercial, industrial and residential clients. It recently raised $2mn in funding.

5. Banyan Nation – Recycling plastic

Banyan Nation collects plastic wastes from industries and recycles it for further use in the industry. "We have come a long way on the engineering front and are now adding performance enhancers to the recycled plastic in order to ensure that the recycled plastic has a greater lifecycle," says Mani Vajipey, co-founder of Banyan Nation which inaugurated its recycling unit at Patancheru in Hyderabad. The company recycles more than 300tons of plastic every month.

6. SayTrees – Tree plantation drives

SayTrees is a professionally-run group of people that are determined to protect the environment not just by themselves, but also by sensitizing others towards the importance of environment conservation and goading them on to participate in tree-plantation campaigns. The group consists of passionate nature lovers, who juggle corporate jobs during the week with their love for trees over the weekends. Though it started off as a weekend pursuit in 2007 now it does more than 50 tree plantation drives in 4 months of monsoon.

7. Priti International – Ecommerce for products made out of waste

Hritesh Lohiya literally found his fortune in a trashcan. His startup Priti International recycles industrial and consumer waste into useful products. This $10million firm designs and manufactures handmade products out of waste materials, like handbags from old gunny bags, cast off military tents and denim pants. They also produce furniture from waste tins, drums, old military jeeps, tractor parts, waste machine parts and lamps from old scooter and bike lights.

8. HelpUsGreen – Recycling waste flowers

Kanpur-based HelpUsGreen makes "flowercycled" natural and certified organic products from flowers. They collect flower waste from places of worship and even the Ganges river and repurpose it into vermicompost, luxury incense and bathing bars through proprietary methods.

9. Jhatkaa – Campaigning platform

Jhatkaa is a new campaigning organisation committed to campaigning for environmental issues. They collaborate with civil society to engage citizens to hold corporate, cultural and government leaders accountable through digital communication platforms. They came into the limelight after their video highlighting poisonous mercury levels in Kodaikanal left behind by a Hindustan Unilever factory went viral. Hindustan Unilever recently agreed to compensate the affected workers after Jhatkaa's efforts.

10. D&D Ecotech – Rainwater harvesting

Most cities in India face a water crisis today due to irregular rainfall, a growing population and rapid urban development. Excessive groundwater usage has led to a sharp decline in the groundwater levels across India prompting the government to pass strict regulations against the usage of the same. Enter D&D ecotech, a startup that helps households and organizations adopt rainwater harvesting. D&D Ecotech also designs its own rainwater harvesting recharge structures based on clients needs and specifications.

11. The Ugly Indian – Citizen activism platform

Ugly Indian is a collective started anonymously by a group of Bangaloreans who came together to do 'spot fixes' they carried out in the city and started a Facebook page to highlight the same. Today, they have spawned a whole generation of activists across the country who self organize these spot fixes, which include cleaning up specific areas in the city, and beautifying them with paint and installing plants.

12. Feeding India – Taking leftover food to the poor

Feeding India is a social enterprise that tackles two rampant and interconnected problems in

India, that of food wastage and hunger. This is done by helping the needy get access to excess cooked food from restaurants and caterers.

13. The Living Greens – Rooftop farming

Founded by Prateek Tiwari, an agriculture engineer and an MBA from Indian Institute of Foreign Trade, Living Greens Organics is a Jaipur-based startup that helps to set up rooftop farms and kitchen gardens. Their aim is to grow organic vegetables on every roof and to convert every building into a living green building, thus generating the largest number of urban carbon credits in the world.

14. Green Ventures – Sustainable energy solutions

Green Ventures creates green technologies and innovative business models to create sustainable energy solutions. Their solutions include large-scale renewable energy generation projects, improved energy efficiency schemes, and rural social energy initiatives.

Conclusion

The economic growth thirst of countries over the world harms the ecology due to various pollutions emitted by the companies. It is the duty of everyone to protect the ecological balance by going through the green products. It provides companies with benefits in the long-run, although the initial costs are more. Overall, the green marketing ensures sustained long-term growth and profitability.

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APPLICATION OF ALTMAN'S Z SCORE MODEL IN DETERMINING THE FINANCIAL RELIABILITY OF SELECTED PLASTIC COMPANIES IN INDIA

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ABSTRACT

Financial Health of the firm is one of the most crucial aspects for the stakeholders, they all wish to know whether the organization will do better in future in order to keep their interest intact with the organization. There are two main parties which are interested in the company's performance and growth. They are the internal users of information and external users of information. Internal users comprise of shareholders, officers, managers, employees and internal auditors. The Altman"s Z Score Model which is a combination of five weighted business ratios that is used to estimate the likelihood of financial distress is the most used model to predict bankruptcy. It was developed in 1968 by Edward I. Altman, an Assistant Professor of Finance at New York University, as a quantitative balance-sheet method of determining a company's financial health. It has been proven to be a reliable tool across the globe. As per the model, bankruptcy could be predicted two years prior to the happening on the event in India. In conclusion, the Altman Z score can be applied to other Indian companies to predict bankruptcy and measure its financial health.

Keywords: *Altman Z Score, Financial Health, GNPAs and Net Profits*

Introduction

In the present scenario of business, the enhancing uncertainty scenario takes away the safekeeping of existence from firms. Perhaps to be confident of the longevity of the firm becomes the prime issue of concern by all the business houses. Z score is an analytical way of screening the financial soundness of a company. It is the easiest accessible tool for any investor or stakeholder. It provides a clear lead to evaluate and understand the company's financial position Most of the organizations exist with an objective of profit maximization. To achieve profit maximization objective, firm needs strong internal and external support. The failure of internal support system such as effective utilization of funds, labour, material etc. And external support system such as economic, political and socio-cultural conditions results in Bankruptcy of the organization. In order to predict the bankruptcy or financial distress or financial health or financial performance of a company Altman z-score is used. Z-score value is calculated by using ratio analysis.

The Z-score formula for predicting bankruptcy was published in 1968 by Edward I. Altman, an Assistant Professor of Finance at New York University. The formula may be used to predict the probability that a firm will go into bankruptcy within two years. Z-scores are used to predict corporate defaults and an easy-to-calculate control measure for the financial distress status of companies in academic studies. The Z-score uses multiple corporate income and balance sheet values to measure the financial health of the company. In this model, if the Z value is greater than 2.6, then the firm is said to be in the "safe zone" and has a negligible probability of filing a bankruptcy. If the Z value is between 2.6 and 1.1, then the firm is said to be in the "grey zone" and has a moderate chance of bankruptcy.If the Z value is below 1.1, then it is said to be in the "distress zone" and has a very high probability of reaching the stage of bankruptcy.

Altman z-score predicts the performance analysis of company in past as well as next 2years performance or financial health. It uses five elements such as total assets or total liabilities, earnings before interest and tax, retained earnings, market value or book value of equity to find the distress status of a company. Among many z-scores models Altman z-score is the most accurate model.

Altman Z-Score Model: Credit risk. The Altman Z-score has become a reliable measure of calculating credit risk. - NYU Stern Finance Professor Edward Altman developed the Altman Z-score formula in 1967, and it was published in 1968. Over the years, Altman has continued to reevaluate his Z-score over the years. From 1969 until 1975, Altman looked at 86 companies in distress, then 110 from 1976 to 1995, and finally 120 from 1996 to 1999, finding that the Z-score had an accuracy of between 82% and 94%. In 2012, he released an updated version called the Altman Z-score Plus that one can use to evaluate public and private companies, manufacturing and non-manufacturing companies, and U.S. and non-U.S. companies.

Review of literature

Financial health of any business enterprise may be effortlessly evaluated via its profitability, liquidity, solvency and activity ratios. Z-score is one of the simplest and competent tools to assess the soundness of an enterprise. On this paper the financial health and the possibilities of financial disaster of RCFL inside the near future are evaluated with the assist of Z score. VIKASH SAINI (2018) The Z score value suggests that the firm is in distress area and may reach bankrupt in near future. Therefore, it requires various efforts of all the concerned people including management, personnel and different stake holders. HAYELOM ABRHA MERESSA (2018) The motive of this study is to evaluate financial distress conditions of Ethiopian micro finance institutions (MFIs) making use of Edward Altman's revised Z-score model, with the usage of secondary statistics. The study revealed that 94% of MFIs are within the secure sector and 6% within the grey sector. The finding of the study additionally shows the fluctuation in rating of the institutions. In view of this, the paper is expected to be used as input to policy makers and practitioners as it provides empirical evidence on economic distress situation of MFIs. MAURICIO TAKAHASHI ETL (2018) This study examined the accuracy of the Altman bankruptcy prediction model for a large number of private organizations' that went bankrupt. Financial ratios used within the model calculations, Z score (Altman's Z for non-public groups) provide indication of solvency and probability for privately held agencies. The findings do not support the declaration that the Z-score can be generalized to nations and sectors specific. The general quantity of bankruptcies may be variable to financial and/or economic crises; however, the effects suggest an accurate identification of financial disaster risk simplest to two thirds of the sample of companies. GEORGE OCHIRI (2017) This paper helps to look at the economic strength of banks listed and unlisted at Nairobi stock exchange, Kenya using the Altman Z score. The CBK have the regulatory mandate to keep a check on the health of the banks keeping in mind the Kenyan financial system largely depends on banks. Following the various financial institution mess ups in Kenya, the CBK and the Kenya Bankers association were pushing for development which includes transparency on commercial banks. A. GEETHALAKSHMI ETL (2017) The study concludes that companies ought to make an intensive effort in maximizing wealth and minimizing liabilities so that usual Pharmaceutical businesses economic health can be precise and it is able to grow in the future in all factors. Traders put money into a business enterprise after evaluating its financial performances. If the performance is volatile then it is able to have an effect on adversely at the decision concerning the investment of the traders. So, this evaluation must be achieved very carefully and rationally. YU LU ETL (2016) This study empirically examines the connection between good and financial distress listed companies. This paper examines whether or not excessive audit assessment can reduce the chance of financial distress, particularly in high boom companies and government owned firms. Effects indicate that the top-notch of the external audit has a poor courting with economic distress. In addition, for high boom firms, consequences show that the relationship among audit quality and financial distress is extra enormous. BASMAN OMAR AL-DALAYEEN (2016) Diverse tools are used for assessing the financial health of the groups for shareholders, authorities, bankers, lenders, financial institutions and many others. They rely at the profitability and solvency ratios of the corporation. However, the absolute figures in the financial statements do not serve the purpose as it only indicates absolute year end position and cannot be guide for the future. Edward I Altman, Professor of Finance at big apple university evolved a model popularly called "Z-Score model" to predict the financial health of the corporate. EPHREM GEBRESLASSIE ETL (2015) The contemporary fashion in Ethiopian banking enterprise is that it is displaying development in overall performance and almost all banks are reporting fine accounting earnings. But worthwhile businesses must not be a guarantee that the corporations can live on to meets its liabilities. Primarily based on this fact, attempts are made to discover the financial distress situations and its determinants in selected non-public industrial banks in Ethiopia. The outcome indicates that the financial health of the chosen private commercial banks is good and improving from time to time, however a few fluctuating data is discovered. NICOLETA BARBUTA-MISU (2014) In this study, the financial loss threat of the corporations covered by Romanian building sectors evaluated. The principal objective of this paper is to provide the scoring approach and categorizing of corporations into a successful and bankrupt corporation in line with their financial performance To reap this goal, the author used two famous models: Conan & Holder, and Altman. The consequences might also represent a landmark for Romanian corporations in substantiating decisions and in order to analyze the economic failure. ERVINA ALFAN (2013) Using financial ratios and Altman z-rating, this project evaluates the overall performance of construction businesses in Malaysia, in the course of and after the crisis. In addition to that, it assesses and predicts the future performance of these companies based totally on data over six years. The results have proven that the overall financial performance of the contractors in Hong Kong, as sampled were deteriorating very fast within the period of last few years. The outcomes of all economic ratios, together with the triumphing state of affairs of over competition, inelasticity of production fees and reduced aggregate demand in Malaysia has discovered the acute difficulty of reversing the economic overall performance in the coming years. KOSMAS KOSMIDIS ETL (2011) The objective is to consider the issue of financial distress. Author has developed an accounting model for the financial distress projections. The main objective of this paper is to provide prediction of financial stress in order to guide the management for action for change in policies for remedial measures. The study includes multiple analysis and logit analysis for the model construction. The outcome indicates that the logit outperforms the MDA model in terms of accuracy.

TABLE -1 Altman Z-Score Old and Revised Versions:

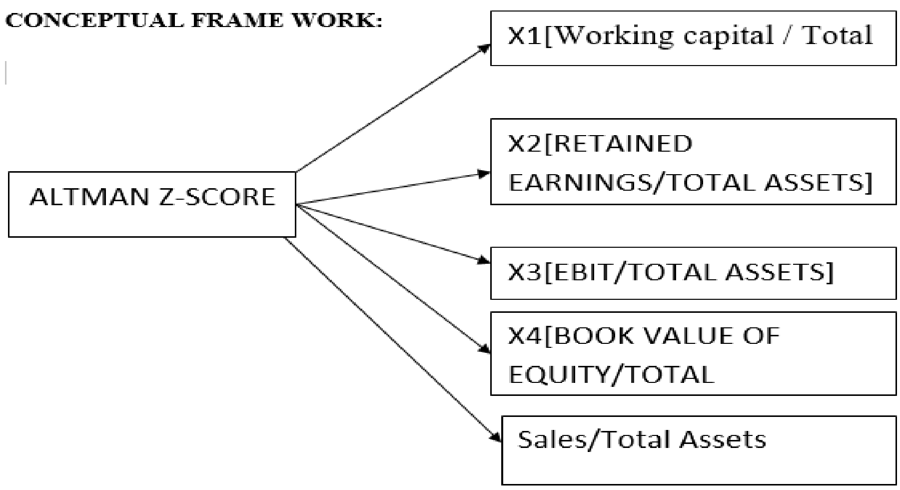
Nature of the firm	Manufacturing Companies (OLD VERSION)	Private Companies (NEW VERSION)	Non-manufacturing Companies (NEW VERSION)	Non-manufacturing and emerging markets (NEW VERSION)
X1	Working capital / Total Assets	Working capital / Total Assets	Working capital / Total Assets	Working capital / Total Assets
X2	Retained earnings / Total Assets	Retained earnings / Total Assets	Retained earnings / Total Assets	Retained earnings / Total Assets
X3	EBIT / Total Assets	EBIT / Total Assets	EBIT / Total Assets	EBIT / Total Assets
X4	Market value of equity / book value of total liabilities	Market value of equity / book value of total liabilities	Market value of equity / book value of total liabilities	Market value of equity / book value of total liabilities
X5	sales/Total Assets	sales/Total Assets	_	_
Z-score	1.21X1+1.4X2+3.3X3+0.6X4 + 1.0 X5	0.717X1+0.847X2+3.107X3+0.420X4+0.998X5	6.56X1+3.26X2+6.72X3+1.05X4	3.25+6.56X1+3.26X2+6.72X3+1.05X4
Discriminations	Z > 2.99 “Safe” zone 1.81 <Z<2.99 “Gray” Zone Z<1.81 “Distress” Zone	Z>2.9“Safe” Zone 1.23<Z“<2.9“Gray” Zone Z“<1.23“Distress” Zone	Z>2.60“Safe” Zone 1.10<Z<2.60“Gray” Zone<1.10“Distress” Zone	Z>2.60“Safe” Zone 1.10<Z<2.60“Gray” Zone Z < 1.10 “Distress” Zone

Statement of Problem: Change is inevitable. It is very important to understand that the only thing that is constant in the world of business environment is change. An organization that is going on well might ignore to introspect themselves on a timely manner. It is very important for the investors, creditors, underwriters, credit rating agencies, banks, auditors and the organization itself to analyze the financial position for their interest. Though, a basic analysis with regard to the financial position is made it is very important to apply the proven models under forensic accounting in order to understand the ranking of the organization.

Objectives of the study

1) To evaluate the financial soundness of select PVC Pipes company based on the Altman's Z-Score model.
2) To determine the relationship between Altman's Z-Score, GNPAs and Net Profits
3) To analyze the impact of the components of Altman's Z-Score on the Altman's Z-Score.

Conceptual Model:



Research Methodology:

The secondary data were obtained from the annual reports of the ten public sector banks. Additional data for analysis and verification, were sourced from www.moneycontrol.com. The data were subjected to certain fundamental mathematical operations such as computing the ratios, before being used for the analysis. Period of the Study The period of study was 5 years from 2015-2016 to 2019-2020.Stastical Tools used in the Study Altman's Z-Score model was primarily used, to determine the financial health of the select PVC Pipes company.

Data Analysis:

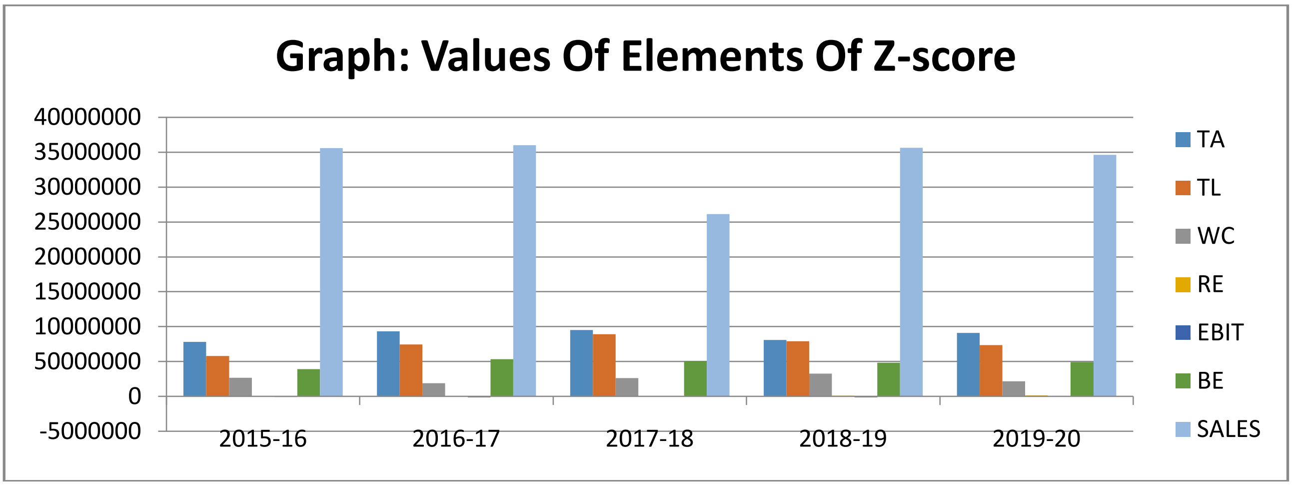
Altman z-score is an important tool that predicts the financial health of companies and categorizes into three zones as, Z > 2.99 "Safe" zone, 1.81 <Z<2.99 "Gray" Zone, Z<1.81 "Distress" Zone. In this model "safe" zone indicate negligible probability of filing bankruptcy. If company is in grey zone that indicates moderate probability of bankruptcy. And finally, if the z- score value is below 1.81 then it is said to be in the distress zone that indicates very high probability of reaching the stage of bankruptcy.

Altman z-score = 1.21X1+1.4X2+3.3X3+0.6X4 + 1.0 X5

TABLE: 1 The Value of Elements Of Z-Score (WC, TA, Tl, RE, EBIT, MVE, Sales) From 2015-16 To 2019-20(₹ In Crores)

YEARS PARTICULARS	2015-16 (₹)	2016-17 (₹)	2017-18 (₹)	2018-19 (₹)	2019-20 (₹)
Total Assets	7,80,69,347	9,32,61,506	9,5067406	80661645	90827308
Total Liabilities	57897634	74589763	89354821	79084105	73586218
Working Capital	26683921	18823346	26273412	32843817	21579752
Retained Earnings	49,594	4,29,872	4,64,447	10,11,646	14,25908
EBIT	-832333	-1214574	-433061	-1382416	-543698
Book Value of Equity	39120062	53471728	50652954	48208099	49345276
Sales	356019032	360160508	261410580	356574550	346259760

Above table represents values of total assets, total liabilities, working capital, retained earnings, book value of equity and sales of Anantha Pvc from 2015-16 to 2019-20. Assets and liabilities are increasing from 2015-18 and total assets are decreasing from 2018-19, increasing in 2019-20 and liabilities also decreasing from 2018-19 to 2019-20 but Total assets are more than Total liabilities, whereas current assets are more than current liabilities.



The Indian PVC pipes and fittings industry, which comprises of segments such as RPVC, PVC and CPVC pipes and fittings has grown significantly over the last few years due to the increase in the demand from irrigation sector on account of the burgeoning population and uncertain weather conditions in the country. The PVC pipes and fittings industry in India is highly fragmented. “PVC pipes will gradually replace conventional piping systems in the market due to their lower cost and higher durability. CPVC pipes. CPVC pipes are expected to register fastest growth in terms of the production capacity in the next 5 years from FY’2015- FY’2020. Rising acceptance of CPVC pipes over galvanized or PVC pipes will lead to the growth in the future.

Conclusion:

Assets and liabilities of the company has increasing from 2015-18 and total assets are decreasing from 2018-19, increasing in 2019-20 and liabilities also decreasing from 2018-19 to 2019-20 but Total assets are more than Total liabilities. As z- score in 2015-16 to 2019-2020 z-score value is above 2.60 i.e., “SAFE ZONE” and it has a negligible probability of filing a bankruptcy. Working capital from 2015-16 to 2016-17 decreasing and from 2017-18 to 2018-19 decreasing, again decrease in 2019-20. In working capital current assets are more than current liabilities. EBIT value is negative throughout the study period. Overall financial health, performance of PVC Pipes company is good as, it is in “Safe Zone” from 2015-16 to 2019-20 which indicates that there is less chance of bankruptcy.

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AN OVERVIEW OF CLOUD SCHEDULING ALGORITHMS

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ABSTRACT

Cloud Computing (CC) is one of the advent areas in the domain of computing complex tasks, where the end results are required in a better, quicker and accurate manner in order to solve many critical problems. In order to complete the task in the desired execution time, scheduling plays a major role in performing this act. Scheduling is like the brain, because it directs the tasks in the workflows to do their work properly and more importantly on time. It helps to switch between Virtual Machines (VM) or between processor to have an efficient execution time. There is a still a million dollar question, am I getting fair amount of resources during my execution in the cloud domain, though I was able execute the task before the desired deadline. According to my point in view of CC, I define it has commercial or non-commercial web services scheduled over an Internet. In this paper, we deal with various scheduling algorithms that involve in computational tasks with user defined deadlines and also satisfying the user budget in solving the given problem. While scheduling the tasks in a workflow considering the Quality of Services (QoS) is a major metric for meeting the makespan and deadline of tasks and workflow within the stipulated time.

Introduction

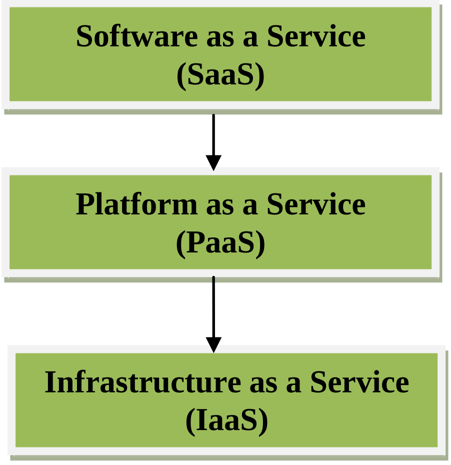
The CC is a platform where you can use the Internet facility to provide the required resources to the user in an on-demand manner. It is like you feel like using the entire configuration at your fingertips but at the end of the day, that is once the subscription of cloud service provider is over, you will not have anything in your hand. This is same as, I will relate this to anreal time example where the bank cashier will have lots of cash in his hands, once the bank time gets over and leaves to home he cannot carry any cash, like wise once the desired task is completed by subscribing the cloud service provider, you will not have any resource at your side that is reality.

While discussing with many peer reviewers and my research scholars I want to make one point clear that is difference between makespan and deadline. The main difference is while dealing with scheduling in a workflow this leads to confusing, workflow is termed as group of tasks that one task is dependent on other tasks and some tasks are not dependent at all completing the whole process in a user defined stipulated time, so in this mere deadline will not help you in any way. So we have to consider a metric that is makespan it will measure the deadline cumulatively. Whereas deadline is better suitable in place where one task meets the desired deadline. In simple words I will narrate a scenario using arithmetic operation for better understanding in reality this is not a complex computing task, so understand and leave it. Say Addition, Subtraction, Multiplication and Division are four major tasks to be completed to attain the single name called as Arithmetic operation. Where each tasks will have different deadline based on the computational value, if is consider for Addition task alone, deadline is the better option, but when we consider Arithmetic Operation deadline will not give you exact meaning so here we have to use makespan.So in other words you can somehow relate to delay and latency in computer networks.

The CC uses the Internet as backbone of all the activities performed in order to complete the tasks scheduled by the user, if the user wants to increase the base resource to complete the task in advance can be scaled at any moment in time by contacting the CC servers available globally [1]. It can manage different services required by different resources can be met without compromising the QoS requirements [2,10], some of reliable and common CC service providers are EC2, GoGrid, Google App Engine, Microsoft Azure and Aneka.

Cloud is classified into four type's public, private, community and hybrid cloud [3]. Public cloud deals with providing resources and other infrastructure facility in commercial or non commercial way, when we adopt any one of the public cloud service provider we seems to have control of the facility, but at the end of the day once the subscription is over everything will be taken back by service provider. The scalability and efficiency will be better even when compared to in-house infra structure [4]. There are giants where they don't want anything to let them down or they might have an attitude that they should own everything, in such situation public cloud will not help you in any way, and the alternate service provider is private cloud [5].

Some organization or institution will keep all their confidential stuff with them and give some non-confidential stuff that might require more computational task will be scheduled in public cloud, the switch between private to public cloud at specific instance is called hybrid cloud [5]. There are chains of organization or institution where they want to create their platform for performing all the necessary tasks, but in community cloud it can be done either by them independently or they can rely on any of the cloud providers [3].

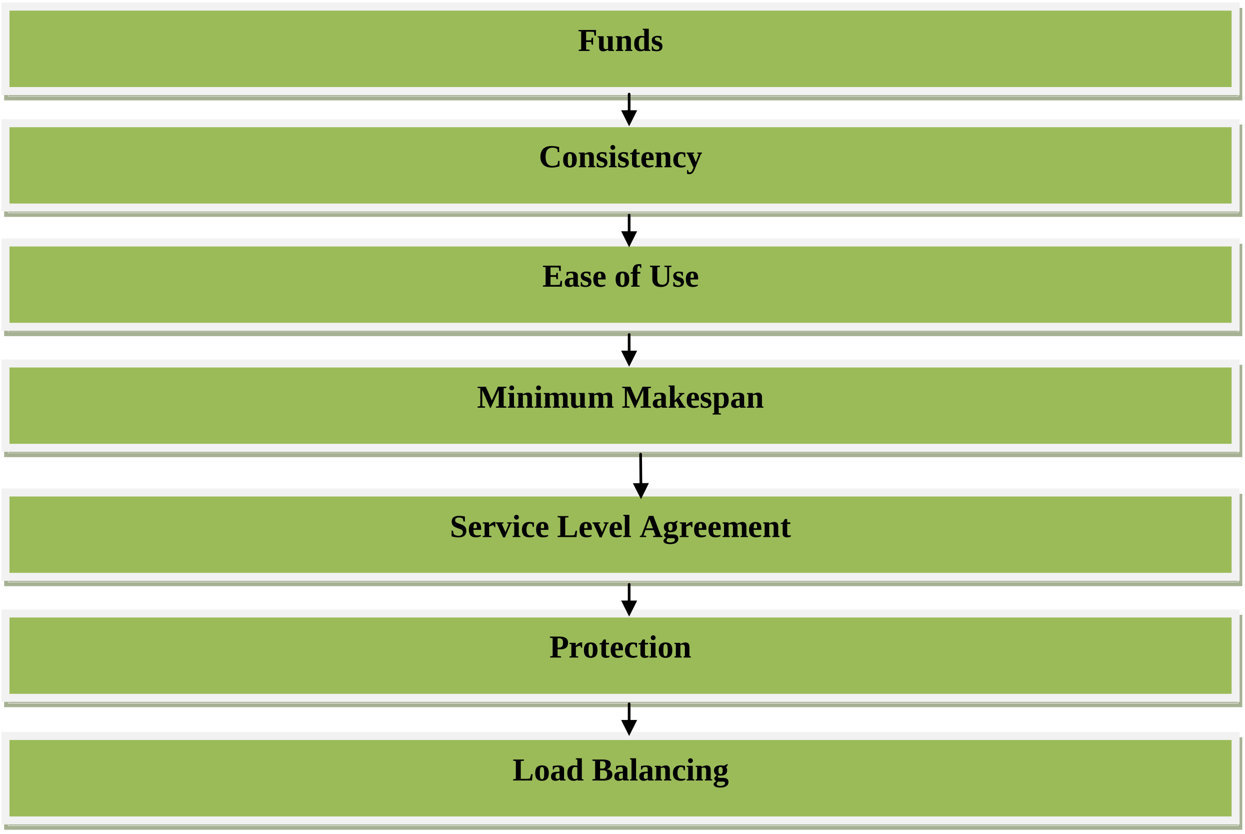


Services provided by the cloud

The main concept relies cloud in virtualization; it is the brain behind cloud success in computing various tasks in the desired stipulated time [6,8]. It helps to create many instances in a single machine, without creating any additional resources, there are many tools to track the working and completion of created virtual machines (VM) like hypervisor or VM monitor tools [7].

Scheduling in the workflow is one of the most important jobs, because there will be lots of VM's created that run independently or dependently in proposed workflow, this will be busy always in mapping all the necessary resources [8]. Scheduling is tough job especially when it comes to workflow, there is no doubt that it will create extra overhead definitely. There are many things to be considered when we schedule the tasks in a workflow, for example a particular task might require data or functions that might be running on other tasks in a different VM. So dependency has to be taken care at high cost before scheduling is done in workflows [9,18]. Scheduling the dependent tasks has to be done by meeting the desired makespan by allocating proper VMs [10] [11].

Scheduling will consider Service Level Agreement (SLA) between the user and cloud service provider, the agreement says that that the task need to executed will be met within the user defined threshold time, this by meeting the stipulated costs [12]. SLA is a very good point because before choosing a cloud service provider user can know their terms in handling or allocating a resource to complete the task within the user define time, this avoids any disputes between the parties [10]. Moreover SLA also deals with many features like resource utilization, load balancing and availability of the cloud resources and services.



Objectives of Cloud Scheduling

Meta heuristic scheduling

- **PSO based scheduling:** Particle Swarm Optimization (PSO) maps particles to tasks, each particle will have its own property and are mapped to VMs to complete the tasks, the in general PSO adopts random swarms initially and improves the algorithms, but there are many algorithm where it is optimized initially itself [13]. Huang et al. in [14] uses follows the base principles of PSO but it iterates itself till it finds the best position of the particles based on the fitness value for mapping the resources in the VMs, this methodology will have less overhead and reduced makespan in executing the tasks. Set-based PSO (S-PSO) [15] here resources are grouped together in pool, so that the instances created using VM able to choose the desired resources from the set of available resources and also meeting the desired QoS constraints.
- **GA-based scheduling:** DWSGA uses bi-direction of tasks [16], it uses bi-directional priority method and other goal-oriented operations to speed up the scheduling process in the workflows. BCHGA [17] uses priority level to create initial population, when the end criterion is not met; it executes cross-over operator and cross-over probability to find the parent and child to create a new population.
- **SA-based scheduling:** Simulate Annealing SA is method which provides optimized solution considering the time and cost. It also provides optimized load balancing and reduced execution time [8]. The basic principle in SA is it considers the temperature as a parameter, in each step whether the optimal solution is met or not, if so it is considered as the optimal solution otherwise it is allowed to choose the next process [18].
- **CSO based scheduling:** Cat Swarm Optimization (CSO) is one of the optimal solution providing algorithms, where it adheres to principles seeking mode and tracing mode, in the first mode the cat waits for the prey at a particular so called best position, whereas the later mode will move for the prey and find the prey instead waiting in the stationed mode [18]. The fitness value of the cat is used to map VMs with minimum cost; the value will also help to find the new cat in the tracing mode.

- **ACO based scheduling:**Ant Colony Optimization (ACO) is used in case of scheduling is not met at private clouds, where it cannot meet the user desired deadline. So switching between private clouds to public cloud is managed efficiently in the workflow with reduced cost and desired deadline. [19]

Heuristic scheduling

- **DCSA based scheduling:**Deadline constrained Scheduling Algorithm (DCSA) [20], it schedules the workflow to available VMs meeting the user defined deadline and also with reduced cost. DCSA identifies the VM that can fulfill the user requirement, then the workflow is mapped to the VM, otherwise the next VM is selected.
- **HEFT based scheduling:**It consider the nearest execution time by ignoring all other factors [21,25], the main concentration of this algorithm is to reduce the repeated look for the available resources that needs to be mapped with VM.
- **PISA based scheduling:**Priority Impact Scheduling Algorithm (PISA) follows the principle of FIFO along with user importance and desired deadline [22]. In simple words the prioritization is given to more important workflow rather than least important workflow, the important one is scheduled first based on priority and task weight.
- **HCOC based scheduling:**Hybrid Cloud Optimized Cost Scheduling Algorithm (HCOC) [23], reschedules the tasks from private to public clouds, say there are lots of tasks in workflow mapped to VM. It reduces the executing time and cost by considering the dependency among the task, thereby reducing the communication overhead among the tasks that are mapped to a same processor.
- **TCHC based scheduling:**Time and Cost Optimization for Hybrid clouds (TCHC) [24], TCHC is an algorithm to speed up the execution of multiple workflows obeying a desired execution time, but also reducing costs when compared to the HCSA approach.

Conclusion

Scheduling in workflow is one of the major concerns in the CC environment, because the task in the workflow has to be managed more efficiently than the independent tasks that were not in the workflow. The task in the workflow may be dependent on each other so switching between tasks and also mapping the workflows to the VM is challenging issue. There are still many researchers are focusing on how to schedule workflows in the cloud, this can be extended by scheduling multiple workflows by managing the user defined deadline and also the scheduling can met with average costs [25].

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AN EVALUATIVE STUDY OF THE EFFECT OF COVID 19 PANDEMIC ON E-LEARNING ACHIEVEMENTS AND EDUCATIONAL ENVIRONMENT OF PROSPECTIVE HIGHER SECONDARY SCHOOL TEACHERS

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ABSTRACT

The purpose of this study was to investigate the Effect of the COVID 19 Pandemic on e-learning Achievements and the Educational Environment of Prospective Higher Secondary School Teachers of Dehradun district, Uttarakhand. The target population included prospective higher secondary school teachers enrolled in the 2019-2021 batch in various teacher training colleges of Dehradun. A questionnaire was administered to the sample of 149 students. The students reported that 47% of students were affected due to the COVID-19 pandemic, whereas fifty percent of students were relatively less affected. That is, the pandemic has affected the students in one way or the other.47% of students were badly faced with mental tension, whereas thirty percent of students confronted with financial problems Nineteen percent of students suffered from health issues. It is clear from the above findings that during the pandemic many inhibiting factors negatively affected the students learning process.72% of students consider classroom teaching better than online teaching. Only thirteen percent of students recognize online teaching better than classroom teaching. Most of the students acknowledged classroom teaching better than online teaching. 84% of students faced an economic crisis during the pandemic. The economic condition affected and it affects the learning environment

Keywords- *Pandemic, Education, Online learning, Environment, Prospective Teacher,*

Introduction

The COVID-19 pandemic has not been repressed at national boundaries. It has affected people whomsoever of nationality, status of education, income, or gender. But the same has not been true for its developments, which have hit the most sensitive societies in the world.

The Corona virus disease 19 has forced people from the glove to keep up social distancing and taking precautionary measures. This crisis has exposed the many inadequacies and inequities in our education systems – from access to the broadband and computers needed for online education, and the supportive environments needed to focus on learning (OECD, 2020).

While schools across the world reopened and plan to reopen, many remain unclear due to COVID-19 pandemic. Third wave of the pandemic are slated and some countries are already experiencing with increased number of cases as they loosen up the confinement policies. This is no time to abandon hopes of a better future, as this crisis abates, and stakeholders turn to transition and return, it is education systems that will serve as the foundation for recovery, repairing and renovating the torn fabric of society (United Nations, 2020).

Effective safe reopening based on wholesome health safety and resurrection protocols requires good cumulation of past experiences that can be basis of the beliefs for the future.

While a lot of lessons have been learned from the past epidemics, much remains unknown about COVID-19 and there will be multiple possible scenarios for a safe reopening. Defining the needed health safety and resurgence protocols will be the major challenge, especially for education systems with limited resources, compounded with a health system that is overstretched. Teachers, staff, and parents, who are the key to implementing the health and safety counter steps, need to be on board throughout the process (UNESCO, 2020).

It was first identified in China on December 31, 2019 and on February 11, 2020, the World Health Organization proposed an official name of the virus as COVID acronym for Corona virus disease 2019.

Education sector which has always been a back bone and critical determinant of a country's economic growth was badly affected due to COVID- 19 Pandemic. Economic pressures and negative impacts of school closures will affect those children most that are already often left behind, including girls, refugees, children living with disabilities, indigenous children, those in lower income families, those living in rural or remote areas or in crisis-affected countries, and those without access to family support networks or online or other distance learning platforms, limiting their access to their fundamental right to a safe and inclusive education (United Nations, 2020).

The first death due to COVID-19 was reported in India on March 12, 2020**.** It has affected more than 4.5 million peoples worldwide (WHO). According to the UNESCO report, it had affected more than 90% of total world's student population during mid April 2020 which is now reduced to nearly 67%.

New circumstances and realities require new initiatives. The recent rise in epidemics and pandemics necessitates that we are ready with alternative modes of quality education whenever and wherever traditional and in-person modes of education are not possible. In this regard, the National Education Policy 2020 recognizes the importance of leveraging the advantages of technology while acknowledging its potential risks and dangers. It calls for carefully designed and appropriately scaled pilot studies to determine how the benefits of online/digital education can be reaped while addressing or mitigating the downsides. In the meantime, the existing digital platforms and ongoing ICT-based educational initiatives must be optimized and expanded to meet the current and future challenges in providing quality education for all (NEP,2020).

The socio economic impact of the pandemic on families and the wider community, and its effect on education must be considered. For example, school dropout or transfers increase during crises as families lose income, are forced to leave the affected areas or resorted negative coping mechanisms such as child labour; inequalities are exacerbated due to lack of social services, health, nutrition and protection(UNESCO).

In India, more than 32 cores of students have been affected by the various restrictions and the nationwide lockdown for COVI-19. As per the UNESCO report, about 14 crores of primary and 13 crores of secondary students are affected which are two mostly affected levels in India. On the basis of available data from individual countries and recent studies, children under the 18 years of age account for some 8.5% of reported cases. Also, fewer deaths have been reported in this age group compared to other age groups (WHO 2020).

Table 1- **Number of COVID-19 Pandemic affected students in India**

Type of Institutions	**Number of affected students**
Number of Primary Level Students	14 crore
Number of Secondary Level Students	13 crore

Source-UNESCO Report, 2020

The same is the situation that happens with India where not every student is well equipped with the high-speed internet and digital gadgets and are along these lines of suffer. Numerous advanced educational institutions in India are not also equipped with digital facilities right now to cope up with sudden change from traditional education set up to the online education system.

There is a growing demand of e-learning that it be included in school education. Teacher education needs to orient and sensitize the teacher to distinguish between critically useful, developmentally appropriate and the detrimental use of ICT (NCF, 2009). The COVID-19 pandemic has badly affected almost all the countries of the world. Mainly the sector of education is one of the most affected sectors. Children have been imprisoned in their homes. There is a need of the hour to find new ways to teach the learning process. Online learning was the only option at this challenging time. How is online learning different from classroom learning? What are the problems with online learning? What are the advantages and disadvantages of online learning and classroom learning? Through the present study researcher has made effort to know the answers of these questions.

Problem Entitled

'An Evaluative Study of the Effect of COVID 19 Pandemic on e- learning Achievements and Educational Environment of Prospective Higher Secondary School Teachers'

Rational of The Study

This is no time to abandon hopes of a better future, as this crisis abates, and stakeholders turn to transition and return, it is education systems that will serve as the foundation for recovery, repairing and renovating the torn fabric of society.

It was already obvious that the teaching and learning situation changed due to the corona virus pandemic everywhere in the world. The changes in the educational system did not happen at once, but there were continuous changes, which affected different stakeholders.

Review of Literature

Kumar Parvat (2020) studied 'Impact of COVID-19 Pandemic on Education in India.' Researcher found that the lockdown has accelerated adoption of digital technology. It has provided a chance to develop new and improved professional skills through online learning in more efficient and productive way. Researcher found that online learning has been the best solution during this pandemic Covid-19 situation.

Kluwer, W. (2020) observed COVID-19 impact on health of people & wealth of nations. The main objective of the study was to investigate the impact of Pandemic on the humanity and growth and development of the nation. Researcher found that humanity is still unable to predict and prevent the unsuspected onset of epidemics and pandemics of infectious diseases. It is also obvious that besides their disastrous effect on human morbidity and mortality, there are equally distressing socio-economic consequences for the affected countries and the whole world. Researcher suggests that keep strengthen biomedical research, improve healthcare delivery system, establish a permanent 'watch-dog' body and create an improved communication and coordination mechanism for the diverse agencies responsible for mitigating the broader adverse consequences of pandemics.

Unted Nations (2020) recommended to prevent and respond to violence against children in all learning environments. The study reveals that existing gender inequalities will be deepened with girls more likely to do unpaid work in the home such as child care, caring for the sick, household chores, and being at heightened risk of child marriage and adolescent pregnancies, in turn increasing the likelihood of children, girls especially, never re-entering the classroom once the crisis abates.

OECD (2020) organization of economic co-operation and development investigated the Impact of Covid- 19 on Education. The findings of the study reveal that there is a need to increase online and virtual platforms for learning. There should be a consistency in informing, communicating, and engaging with the learners. Financial assistance should be provided to the learners.

Objectives of the Study

1. To study about COVID 19 Pandemic.
2. To study effect of COVID 19 Pandemic on e- learning achievements.
3. To know effect of COVID 19 pandemic on educational environment.

Methodology

The methodology used to generate the data to investigate the research question was a combination of qualitative and quantitative research supported and supplemented by a questionnaire. A mixed methodology approach was applied as the research question could be most comprehensively informed by drawing together the widest possible range of data from across the samples.

The present study is an attempt to discuss the effect of the COVID 19 Pandemic on the learning achievements of the students. According to the present study, a survey descriptive method was adopted. Primary data has been considered. For this purpose based on availability, the sample of 156 prospective secondary school teachers of the 2019-2021 batch from different institutions was taken using the purposive sampling method.

Interpretation of Data

The process of extracting, compiling, and interprating raw data for purposes of obtaining constructive information that can be applied to formulating conclusions, predicting outcomes in social science settings.

Statistical techniques employed for the data analysis were tabulation, frequency and percentage technique.

Table 1: How did you find information about COVID-19 pandemic?

1	**How did you find information about COVID-19**	**Opinion of the**

	pandemic?	Students	
		Yes	**Percentage**
a	Educational Institutions	19	21%
b	T.V. Channels	81	91.53%
c	News Papers	6	7%
d	Facebook	7	8%

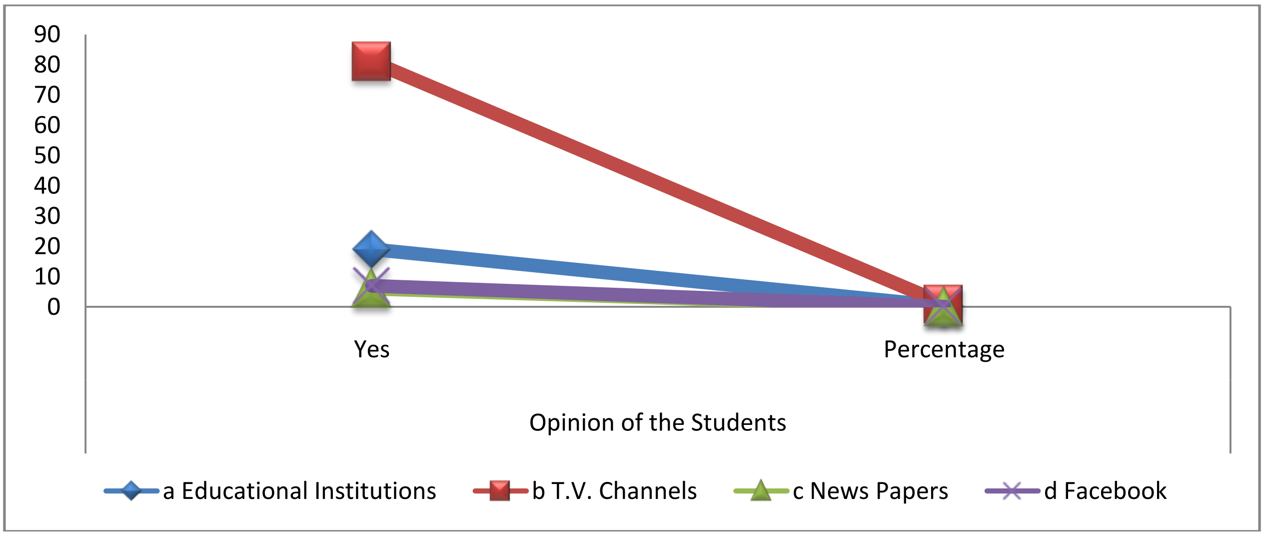

Fig1

Table 1 and fig 1 indicate that 91.53% students received information about COVID-19 pandemic from T.V. channels. Twenty one percent students obtained information from educational institutions. Above findings shows that Media particularly T.V. has been a fast and major source of information

Table 2: How did COVID-19 pandemic affect your study?

1	**How did COVID-19 pandemic affect your study?**	**Opinion of the Students**	
		Yes	**Percentage**
a	Badly Affected	52	47%
b	Slightly Affected	55	50.00%
c	Not Affected	3	3%

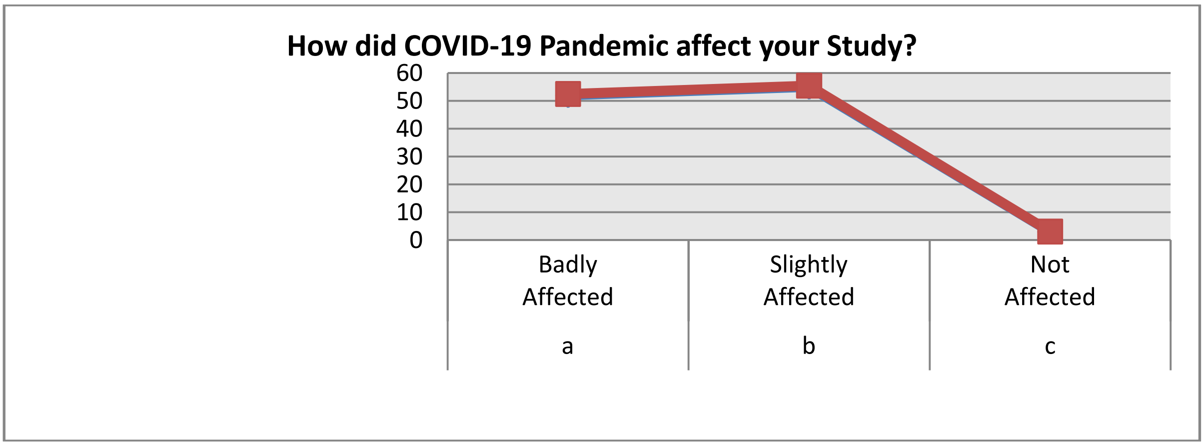

Fig2

Table 2 and fig 2 depict that 47% students were badly affected due to COVID-19 pandemic, whereas fifty percent students were relatively less affected. That is, the pandemic has affected the students in one way or the other.

Table 3: How did COVID-19 pandemic affect your study?

1	**Difficulties, you faced during lockdown.**	**Opinion of the Students** **Yes**	**Percentage**
a	Food	6	4%
b	Finance	46	30.00%
c	Mental Tension	73	47%
d	Health	29	19

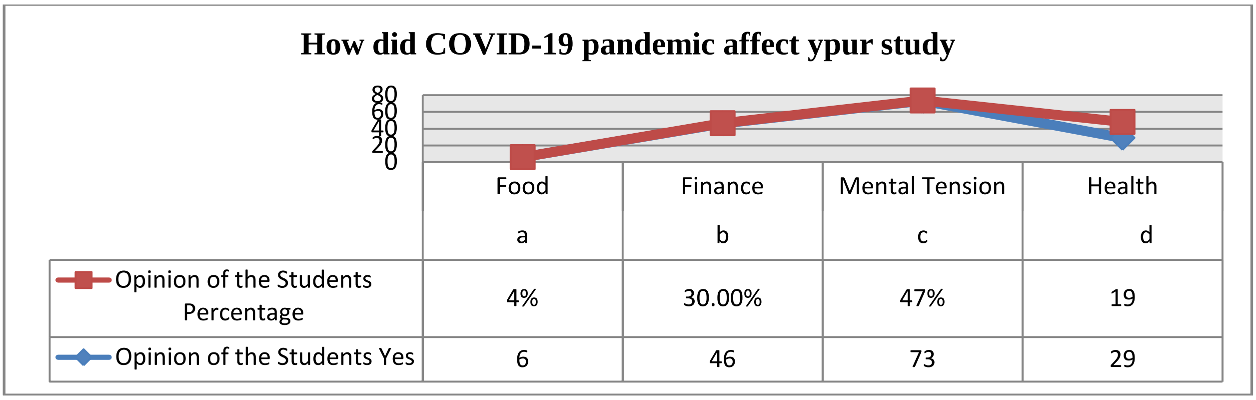

Fig3

Table 3 and fig 3 demonstrate that 47% of students were badly faced with mental tension, while thirty percent of students were confronted with financial problems Nineteen percent of students suffered from health issues. It is clear from above findings that during pandemic many inhibiting factors negatively affected the students learning process.

Table 4: Did you find online teaching better than classroom teaching?

Did you find online teaching better than classroom teaching?	**Opinion of the students**	**Percentage**
Yes	13	13%
No	79	72%
Can't say	18	16%

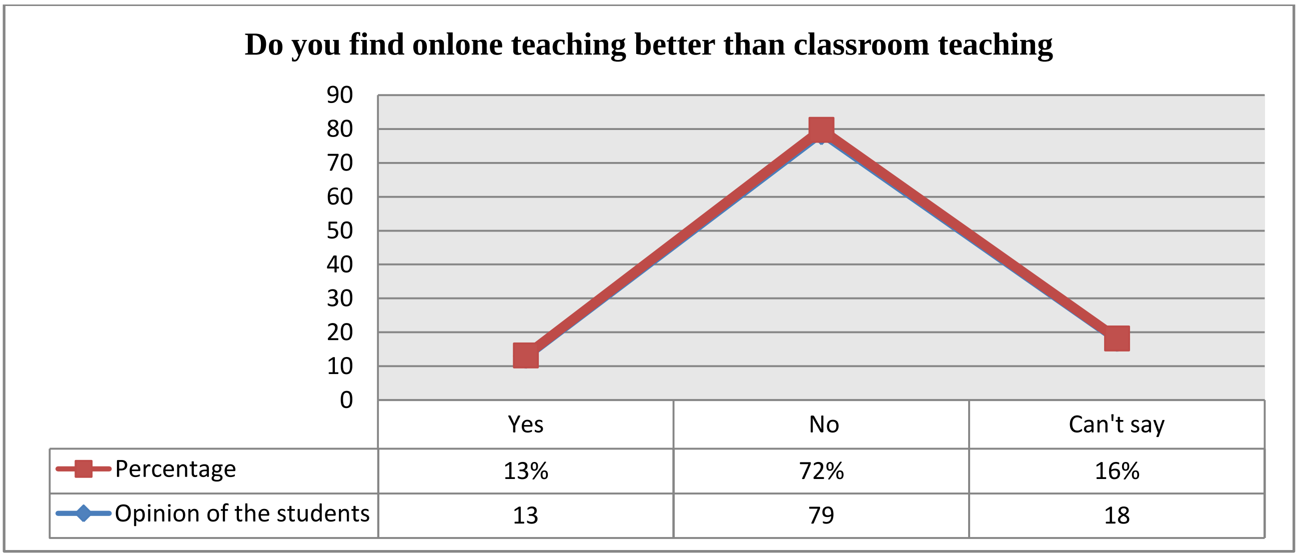

Fig4

Table 4 and fig 4 clearly reveal that 72% students consider classroom teaching better than online teaching. Only thirteen percent students recognize online teaching better than classroom teaching. Most of the students acknowledged classroom teaching better than online teaching.

Table 5: .Did you face problems related to internet connectivity?

.Did you face problems related to internet connectivity?	Opinion of the students	Percentage
Yes	52	47%
No	2	2%
Sometimes	56	51%
Can't say	0	0%

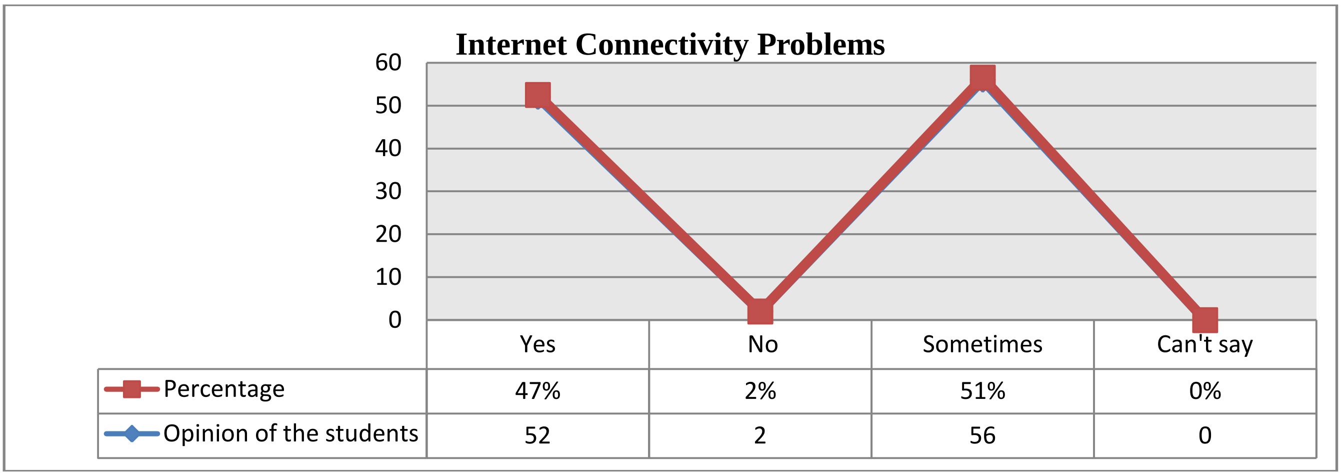

Fig5

Table and fig 5 clearly show that 47% students regularly faced internet connectivity problem. Fifty-one percent of students faced connectivity problems sometimes during the class. It is obedient that internet connectivity has been a major issue in online learning.

Table 6: Do you think education process was affected by economic conditions?

Do you think education process was affected by economic conditions?	Opinion of the Students	Percentage
Yes	91	84%
No	6	6%
Can't say	12	11%

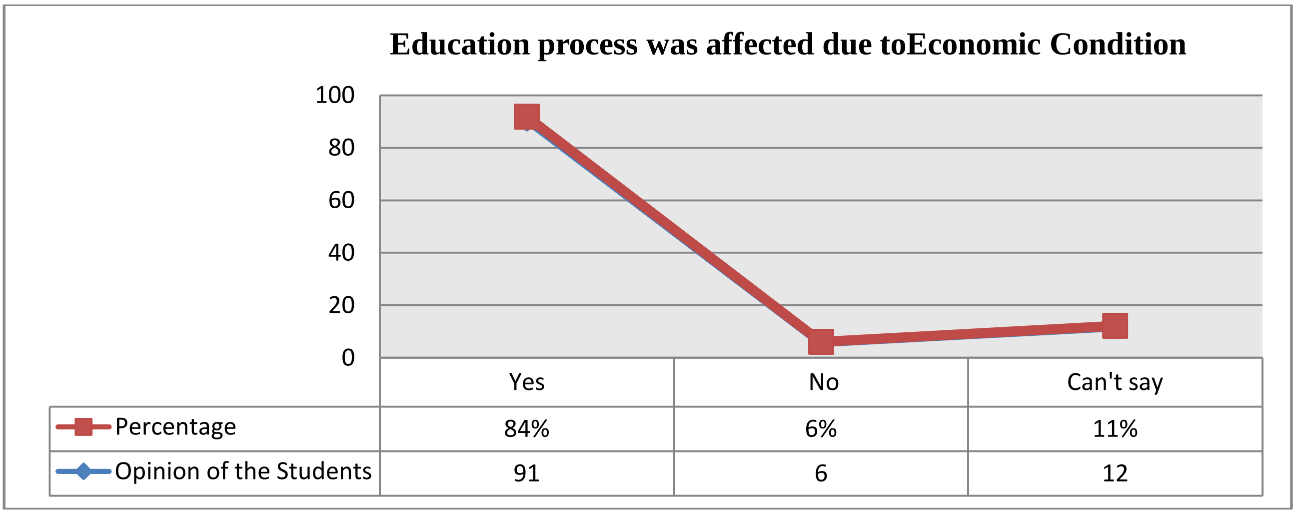

Fig6

Table and fig 6 disclose that 84% of students faced an economic crisis during the pandemic. The economic condition affected and it affects the learning environment.

Table 7: Do you think that economic condition was affected by COVID-19 pandemic?

Do you think that economic condition was affected by COVID-19 pandemic?	Opinion of the Students	Percentage
Yes	104	94%
No	1	1%
Can't say	1	1%

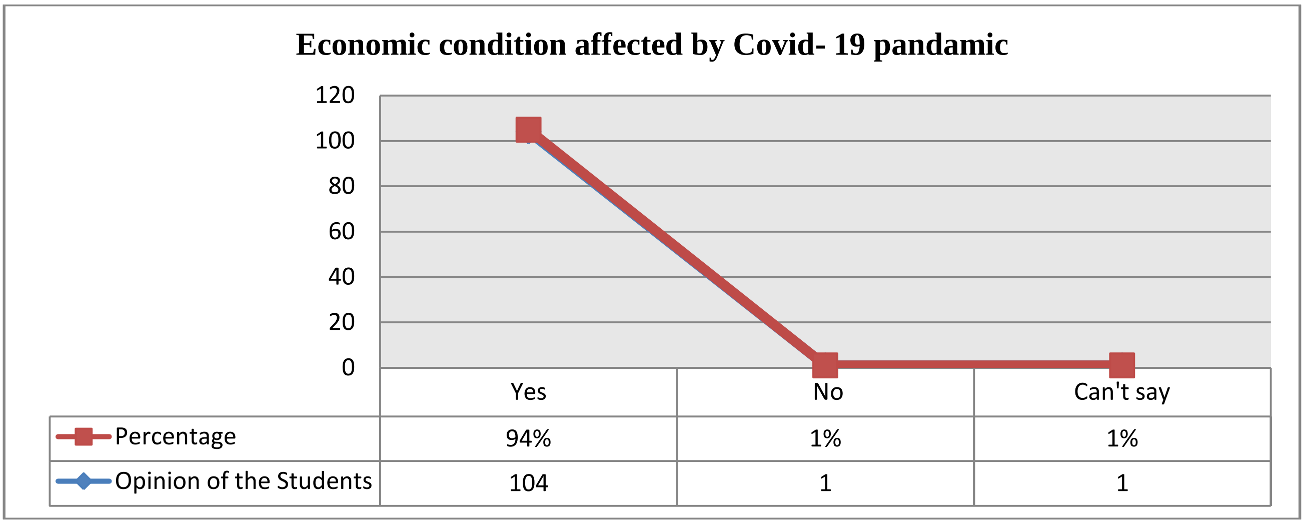

Fig7

Table and fig 7 show that 94% students faced economic crisis during pandemic. Economic condition affected and it affects learning environment.

Table 8: Did you find good environment to study at home during pandemic?

Did you find good environment to study at home during pandemic?	Opinion of the Students	Percentage
Yes	53	48%
No	33	30%
Can't say	24	22%

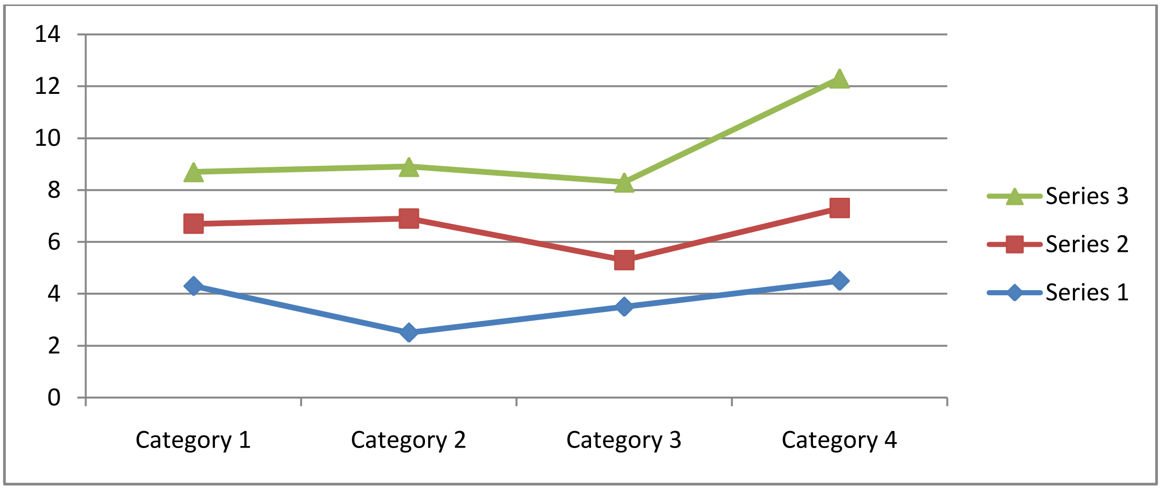

Fig8

Table and fig 8 clearly reveal that 48% of students were agreed that home environment was good for online learning.

Table 9: Most used platform for online teaching?

Most used platform for online teaching?	**Opinion of the Students**	**Percentage**
Zoom	73	51%
Google Meet	63	44%
Jio Meet	3	2%
Cisco Webex	4	2.79%

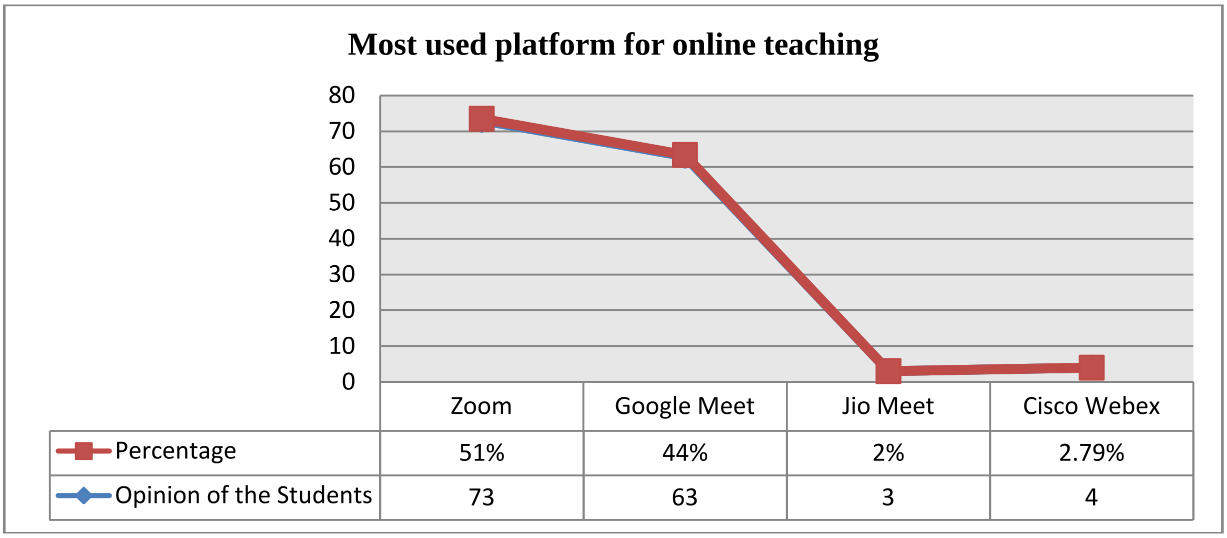

Fig9

It is evident from the table and fig 9 that 51% of students' first online platform choice was zoom and 44% found Google meet suitable for the online class. It was found that zoom and google meet have been popular platforms among students.

Table 10: Platforms used commonly to provide study material during lockdown.

Platforms used commonly to provide study material during lockdown.	**Opinion of the Students**	**Percentage**
You Tube	53	37%
Whats App	79	55%
E-Mail	19	13%
Swayam	3	2.08%

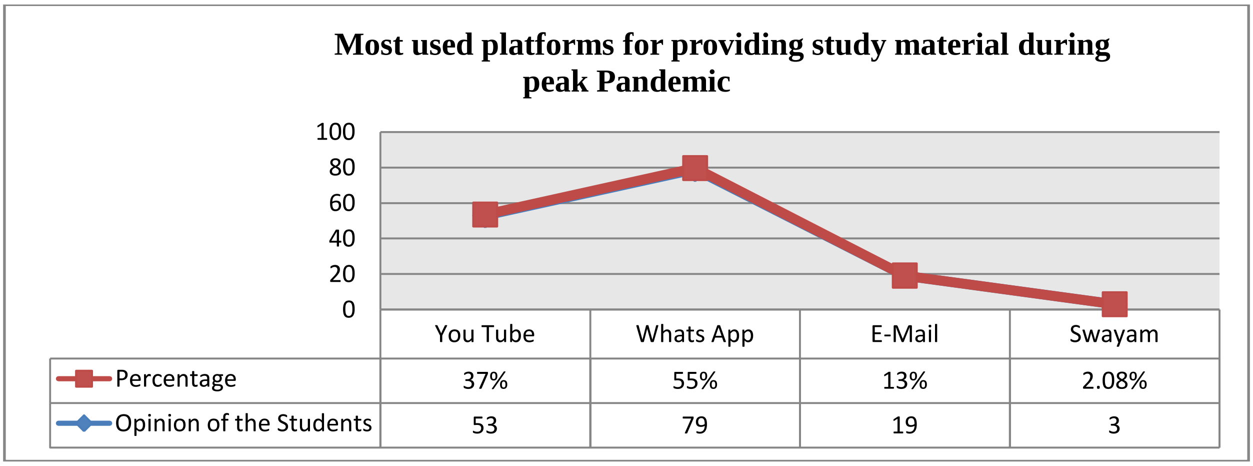

Fig10

It is clear from the table and fig 10 that 37% student used you tube, fifty five percent used Whatsapp and only thirteen percent used email for study material.

Table 11: Did you feel stress, mental fatigue, tension and anxiety during peak of COVID-19

Did you feel stress, mental fatigue, tension and anxiety during peak of COVID-19	**Opinion of the Students**	**Percentage**
Yes	79	72%
No	31	28%

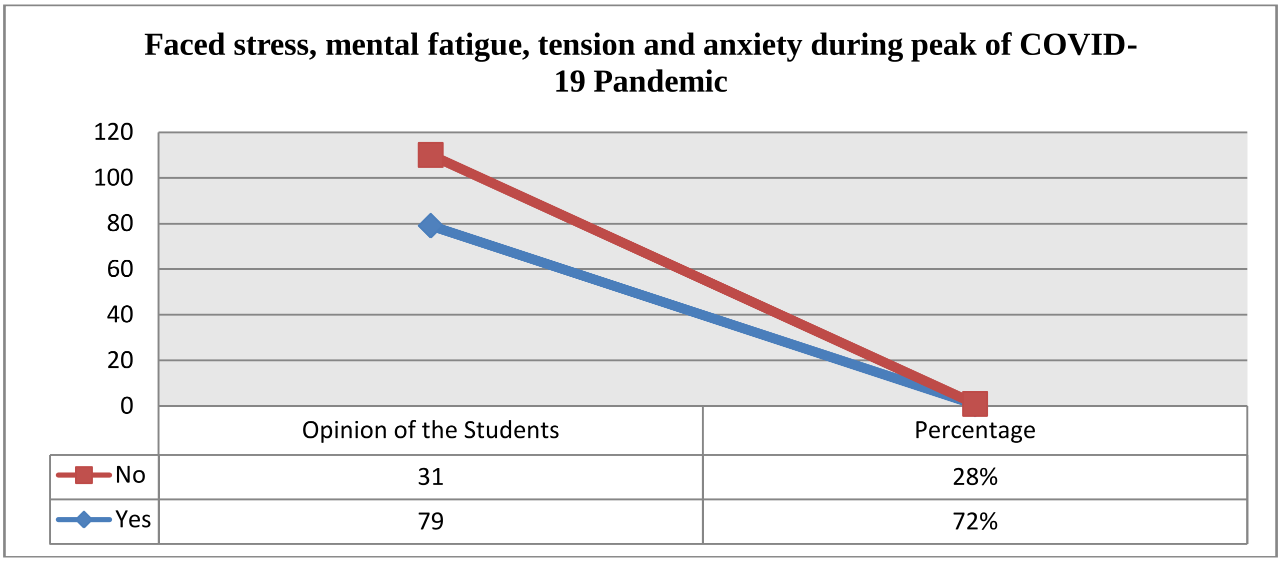

Fig11

It is evident from the table and fig 11 that 72% of students suffered from stress, mental fatigue, tension, and anxiety during the peak of COVID-19. Symptoms of mental fatigue, stress, and anxiety were found among students.

Table 12: Did you find online teaching more enjoyable than traditional classroom teaching?

Did you find online teaching more enjoyable than traditional classroom teaching?	**Opinion of the Students**	**Percentage**
Yes	8	7%
No	40	37%
Sometimes	60	55.60%

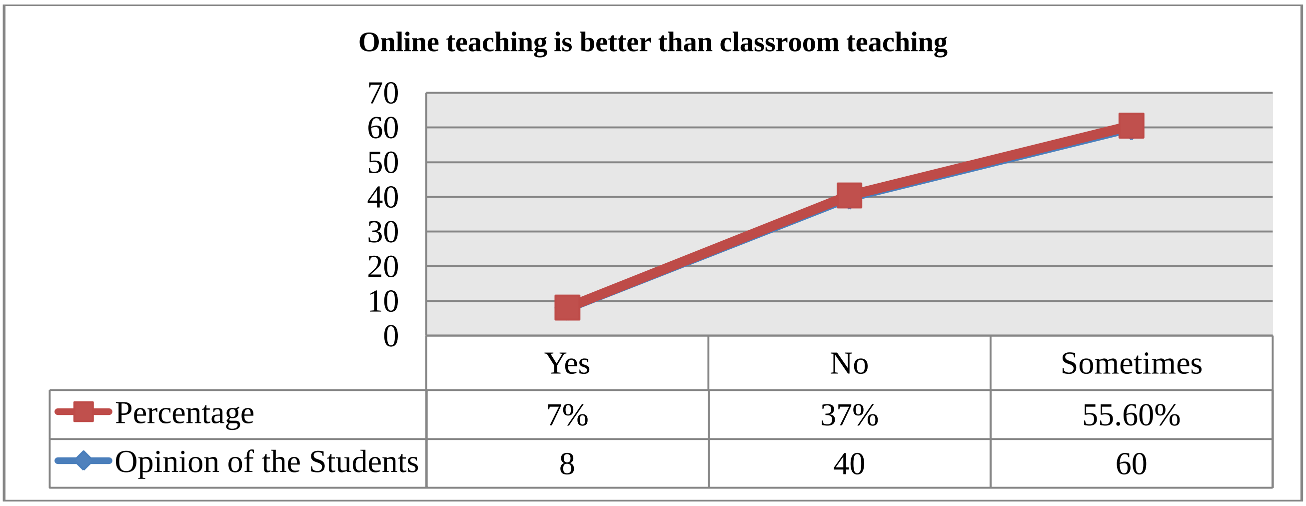

Fig12

It is evident from the table and fig 12 that 55.60% of students think that online teaching is but sometimes better than classroom teaching. It was found that traditional classroom teaching has been the first choice among students but sometimes they prefer online teaching. Blended learning has also been the concept of National Education Policy, 2020.

Findings of the study

- Media, particularly television, has been a fast and major source of spreading information.
- 47% of students were badly affected due to the COVID-19 pandemic, whereas fifty percent of students were relatively less affected. That is, the pandemic has affected students in one way or the other.
- 47% of students were badly faced with mental tension, while thirty percent of students were confronted with financial problems Nineteen percent of students suffered from health issues. It is clear from above findings that during pandemic many inhibiting factors negatively affected the students learning process.
- 72% of students consider classroom teaching better than online teaching. Only thirteen percent of students recognize online teaching better than classroom teaching. Most of the students acknowledged classroom teaching better than online teaching.
- 84% of students faced economic crisis during pandemic. Economic condition affected and it affects learning environment.
- 51% of students' first online platform choice was Zoom and 44% found Google to be suitable for online classes. It was found that Zoom and Google Meet have been popular platforms among students.
- 72% of students suffered from stress, mental fatigue, tension, and anxiety during the peak of COVID-19.Symptoms of mental fatigue, stress and anxiety were found among students.
- 55.60% of students think that online teaching is sometimes better than classroom teaching. It was found that traditional classroom teaching has been first choice among the students, but sometimes they prefer online teaching. Blended learning has also been the concept of National Education Policy, 2020.

Conclusion

It can be concluded that the pandemic has affected the students in one way or the other. It is clear from findings that during pandemic many inhibiting factors negatively affected the students learning process. Most of the students acknowledged classroom teaching better than online teaching. The economic condition affected and it affects the learning environment. It was found that zoom and Google meet have been popular platforms among the students. Traditional classroom teaching has been the first choice among the students but sometimes they prefer online teaching. Blended learning has also been the concept of National Education Policy, 2020.

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RELEVANCE OF GANDHI AN PHILOSOPHY IN PRESENT ERA

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ABSTRACT

The tenets and morals of Gandhi are applicable in gift instances too. These include: Satya (Truth); Ahimsa(Non-violence); Vegetarianism; Mauna (Silence); Nai Talim (Basic Education). His complete political strategy, satyagraha, ahimsa and abstaining was based totally on the superiority of 'soul force' to physical force. Today, on the only side whereas we're advancing with era, its' accountable use can assist in addressing many troubles of the humanity like corruption, lack of transparency, and so forth. The paper explores how Gandhian principles can be initiate out by adopting technology-pushed interventions. The paper focuses especially on issue of fraud and transparency and hyperlinks how era, can contribute to cope with the hassle and realize 'fact' thru photograph. The paper is based on overview of secondary records

Keywords: *Gandhiji's tenets, Gen and communications technology, corruption.*

Introduction

Gandhism incorporates the philosophies and the body of labor of the daddy of the kingdom, Mohandas karamchand Gandhi. Gandhism classically contains of Gandhiji's contributions to the thought of non-violent war, also called civil fight. Truth and Non-violence are the essential live of Gandhism.

Gandhiji has stayed known as a bodhisattva by Prof. Ramjee Singh. In fact, bodhisattva is a Sanskrit term which basically approach a person who, obsessedthrough empathy, has engendered bodhicitta, which is an unprompted, on the spur wish to purchase Buddhahood. This is deemed to be for the benefit of all responsive and sensitive beings. In certainty, Bodhisattvas are a nicely-preferred subject in Buddhist artwork of the 20th century.

Gandhiji did now not quite approve of the impression of 'Gandhism'. He explained the cause for his disapproval via announcing that there has been no such notion as "Gandhism". He did not believe in leaving at the back of any sect after him. Moreover, he did nowadays not declare to have created or conceptualized any principle or doctrine that had hitherto not were within the past. He claimed to have made a easy try to relate the eternal truths to peoples' every day lives and problems that exist.

The reviews that he shaped and the deductions derived have been now not final. He claimed that each one These had been dynamic in wildlife and might trade with time. He turned into modest when he stated that he had not anything new to offer to the world by using way of coaching. For, he believed that Truth and nonviolence were as old since the hills.

In the absence of a "Gandhism" that developed permitted by means of Gandhi, there exists a faculty of idea that believes that we need to stem what Gandhism stands for, from Gandhiji's life, his paintings and residing. An important deduction is that his philosophy basically was based on "fact" and "non-violence". We need to acknowledge the detail that humans are distinct in any respect ranges and be given it Second, that we ought to in no way recourse to violence to settle inherent variations between human beings at all stages.

Martin Luther King Jr opined that if mortality is to development, than Gandhi can by no means be overlooked. He discovered that overlooking Gandhi would be at our own risk.

Objective of the have a look at

1. To look at and understand Gandhian notions and their relevance within the gift technology.
2. To apprehend how technology may be rummage-sale to enhance their effectiveness.

Source of statistics

Secondary statistics.

Principles that Gandhiji stood for:

The tenets of Gandhiji which can be relevant in present times are as follows:

- Satya (Truth).
- Ahimsa(Non-violence).
- Vegetarianism.
- Mauna (Silence).
- Nai Talim (Basic Education).

Satya as propagated by way of Gandhiji

"Satyagraha" is basically a total of words, specifically the phrases satya which approach “fact") as well as agraha because of this "good-mannered insistence" The phrase Agraha additionally method“holding firmly to". In other phrases, not anything but the truth exists or prevails. In the context of satyagraha, Truth would contain the following:

a) Truth with admire to speech.
B) Reality as it exists.
C) Good or Worthy rather than, immoral, evil or awful.

Gandhiji had implicit faith secret the idea of nonviolence:

According to him the wide-ranging world rested upon the inspiration or bedrock of fact that is additionally called satya. In a nutshell, that is the inherent dogma of Satyagraha.

Information and communications generation can be used as an powerful device to fight corruption

Information and communications Expertise play a tremendous position within the fight in opposition to corruption. It enables motion of histories or records among government institutions, amongst residents in addition to between the occupants and the authorities establishments. These technologies help promote translucence, accountability and public participation. There are numerous approaches in which ICTs can play a pivotal position in activating high-quality change via bringing about computerized methods, except intermediaries, and barring the role of bureaucracy and slicing out red-tape. In numerous growing international positions the Program for ICT has succeeded in growing an exhaustive listing of the feasible domains in which ICTs can tenacity the troubles regarding corruption. In fact corruption may be confined with the aid of automation specially withrecognize to repetitive operations. Thus, there are several approaches wherein ICTs can make a contribution to discover and reduce corruption and bribery. Skillimprovements can be utilized by governments to enhance the efficiency and transparency of civic management and to improve conversation with and offer statistics to residents.

Gandhiji and Non-violence

His whole political strategy became built on the superiority of 'soul pressure' to physical pressure.He opined that Nonviolence intended aggressive or pitting of one's entire soul in opposition to the resolve orthe will of the oppressor or the tyrant In extra words, to abstain from violence to settle inherentvariations among people in any respect grades. This would consist of violence emanating from conflicts between people, international sites, races, religions.

Use of generation to propagate Non-violence

People communicate about the cognizance of the crowd in the age of the Internet. And digital conversation does connect the know-how of the crowd. Satyagraha and non-violence depended at the word of mouth to unfold. In extant day times, digital era could have facilitated faster dissemination of the ideas among the public. Skill facilitates human beings to get quicker insights about what to do, and they percentage those insights in the setelectronically. This expertise may be a long way extra and quicker than the axiom of mouth, which turned into adopted in the time of yore.

Gandhiji and democracy

Gandhi’s opinion of democracy converted certainly first-rate. According to him, democracy become some thing that furnished the susceptible the equal threat because the strong. However, he changed into also similarly manner of this human body as he felt that it had its flop facet too According to him the extra the institution the more crooked into the hazard of abuse. Democracy, he believed become a remarkable institution through itself and so it became at risk of be substantially abused.

Innovations in Technology facilitate powerful democracy

Innovations in era and social media have had a prodigious impact on democracy globally. Technology has empowered residents to expand their voices and keep governments accountable. But at the same time as residents have all started to harness tech novelty, many democratic establishments – governments, parliaments and political events – were gentler to react, often using superseded methods to reply to extended citizen demands. Technology allows formations to be extra engaged with residents. Information and communique skill are making our international more democratic.

Gandhi's perspectives on education

According to Gandhiji, schooling ought to rework and revolutionized in such a way that in residence of answering the want of the imperial exploiter, the needs of the poorest of the bad Ought to be satisfied. He realized the crucial position played by using simple or primary training and opined that irrespective of villages or cities, simple education hyperlinks youngsters across towns and villages to all that altered into exceptional and wished within the country. He spoke approximately the significance of taking Vidyapith to the villages to impart education to match the poverty of the villagers.

Digital India initiatives to spread training in India

In retaining with the relevance and significance of teaching, the digital India initiatives placed collectively some of digital services for cultivating the dissemination of schooling in society.

Various stages including the prime degree, secondary level as well as better education and studies centers, the diverse simulated schemes within the academic region have revolutionized the machine within the U.S.A. 'SWAYAM' released via the Rule allows get admission to courses imparted in school rooms from 9th popular to put up promotion. These guides may be accessed via any scholar anywhere at any time. This virtual scheme brings edification at the door step of numerous students and objectives to bridge the virtual divide. This scheme is indeed a leading boon for underprivileged youngsters who won't be capable of access formal education since of diverse elements such as loss of crucial sources like money and time. 'Pathshalla' is one such scheme that allows dissemination of instructional content material via the channels like internet spotand cellular app.

Some apps and applications like 'Mid-Day Meal Monitoring App', 'Shaala Sidhi' and 'Shaala Darpan' cognizance at the agreeable of faculty administration and compare the faculties andkendriya vidyalas to decorate the best of schooling. In the zone of higher trainingGovernment has the 'National Scholarship Portal', 'eGranthalya', 'National GenNetwork' to name a few.

These digital tasks are aimed toward cultivating the educational area. They make an earnest attempt at attaining out to the underprivileged unit of kids to facilitate them to avail of the end result of digital revolution. In a nutshell, an attempt is complete through digital revolution to bridge the distance between the privileged sections of society and the under privileged ones.

Relevance of Gandhism to India and the world outside

It would genuinely no longer be an hyperbole to country that the entire world realizes the essence of Gandhism and that it would be unfitting to premise that Gandhism has lost its relevance within the worldwide. Indeed the irony is that like Buddhism, a faith that took birth in India is in the gift, Broadly speaking generic outdoor India, further, the import of Gandhism nowadays is identified outdoor India. In reality in several international places of the arena sports along Gandhian lines are carried out in several countries across the Globe. There are same few countries in the world which can be definitely oblivious to Gandhian exercise. In a nutshell, all athwart the globe there seems to be an awareness of the importance of non-violence. Mahatma Gandhi is a call that beats the bounds of race, faith and nation-states. In reality it has to receive due credit for having occurred as the prophetic voice of the twenty-first century. In nowadays's world, Gandhiji is fondly evoked for his avid observance of the practice of non-violence and his last humanism.

In truth one may also wonder approximately the bearing of Gandhi on this all-permeating, avaricious, doubtful and consumerist way of life? One may also wonder about the importance and relevance of Gandhiji in addition to Gandhism to the new world and what is the name of the game of his fulfillment?

Gandhiji has impacted numerous noteworthy Transnational leaders, both religious and

political In fact the Tibetan leader Dalai Lama has put Gandhiji's fulfillment within the proper perspective.
According to him, there were many Indian masters who have practiced and preached non-violence as a philosophy; but, Gandhiji bowed into instrumental in producing a totally sophisticated method as he efficaciously implemented the noble idea of ahimsa in current day politics. That, according to Dalai Lama was a very great factor.
Despite substantial practice of passion the world over, in the end the strength of weapons will have to be changed by using the need of the fixed people. Dalai Lama believes that with a view to combat these large wars, the not unusual folks of the world want Gandhism.
Disaku Ikeda, the Japanese Buddhist lead additionally takes splendid concept from Gandhi He likens Gandhism to non secular practice this is entreated over the internal urging of the sense of right and wrong.
The incredible achievement Gandhiji was gifted of garner in South Africa which changed into embroiled in its fight for human privileges and civil liberties is vindicated by way of the reality that his teachings have been tailed now not best with the aid of the South African Freedom fighter, Nelson Mandela, however also the past South African President De Klerk. Several Leaders, the World over had been deeply driven by Mahatma Gandhi. These encompass the greats like Dalai Lama, Desmond Tutu, Martin Luther King and Nelson Mandela.
In truth Martin Luther King different into stimulated with the aid of the tenets promoted with the aid of Gandhiji. He felt that Gandhiji established freedom for his country- men against the British based totally on the principles of Gandhism. Whether it changed into the willingness to visit jail, resisting the British by means of peaceful way, mission the Dandi March or positively boycotting British products, the entirety turned into executed with out resorting to ferocity. There is first-rate resonance of the historic Salt March at Dandi with the courageous Sir Bernard Law Bus Boycott in antagonism to racial segregation in United States.
In fact Barack Obama, former US President observes Mahatma Gandhi as an proposal and used to preserve Gandhiji's portrait in his agency as a champion of peace. According to him, he has always appeared to Mahatma as an notion and that is so because he remark In my existence, I even have constantly appeared to Mahatma Gandhi as an offer, due to the fact he exemplifies the form of Transformation that may be introduced about whereas ordinary people set out and come together to do something extremely good.
Aung San Suu Kyi, the Burmese chief who was under home arrest for numerous years, changed into significantly inspired with the aid of Gandhiji. She learnt the position of fearlessness a good way to be able to translate the doctrine of amity and reconciliation into practice.

Findings and end

Gandhism may be very a good deal valid in the cutting-edge international. Gandhi has stimulated and could recollect to inspire leaders – political, social and non secular, everywhere in the international. Whether is Joan Baez, the American folks singer and human rights activist, or Cesar Chavez, the American common activist, or Joanna Macy, the environmental activist, or Mubarak Awad, the non-violent Palestine chief, a common of these men observed Gandhi and his nonviolent conflict highly inspirational. Thich Nat Kanh, the Vietnamese Buddhist also derives suggestion from Gandhiji who targeted and confused upon the process rather than the stop. Nat as quickly as remarked that one can also fail of their strive, but one might also reach the ideal drive specifically whilst the action is authentically nonviolent and is primarily based on love and expertise. This is real Gandhism, he said. Thus the world over splendid guys had been deeply prompted and stay stirred via Gandhism.

Conclusion

Gandhian ideas of non-violence, self-sufficiency, shared concord, simple residing and reality locate resonance in our each day life. These are concepts that canister in no way exit of sync with human existence. Moreover these principles can be successfully functional to discover solutions to problems including poverty, illiteracy, joblessness and many others.

Thus as discussed above, given the fact that Gandhian principles are unusually applicable no longer simplest nationally however additionally across the world, this paper debates how every of Gandhian standards can be propagated, thanks to the revolution that has taken residence inside the area of Information Technology.

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PERFORMANCE ANALYSIS OF DIGITAL WATERMARKING ALGORITHMS WITH THEIR PRACTICAL USES ON WEB APPLICATIONS

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ABSTRACT

Several security algorithms for software code have been discovered and implemented by the software or application developer for the protection of their original code or code modules. The reason behind the security is to prove the ownership of their code. Application code could be in any form i.e. code could be related to web application or that could be implemented in mobile applications. Surveys have been done by the various organizations like BSA, for the identification of software piracy. In this regard, we have proposed a model for the security of software code by using Digital Watermarking. Digital Watermarking is a technique in which a security key will be implemented in such a way that the originality of the code should remain unchanged or unaffected. With the help of extraction algorithm we can identify whether the receiving data is original or not. This proposed model has been implemented on web based application using Dot Net framework. In this research paper, we have done the implementation analysis of digital watermarking algorithms, Embedding Algorithms and Extraction Algorithms, along with their practical usage. For the analysis of implementation of digital watermarking code we have utilizes various software testing tools.

Keywords: *Digital Watermarking, Embedding, Extraction, Software, Web Application, Software Testing.*

1. Introduction

Every organization, such as education, health, automobile etc. want to move their work from manual to computerized due to the utilization of IT. It is now required or a need for all businessmen to transform their work by saving money, time and keep the security of their data. All software companies or software developers are working for the protection of data of every organization as individual, but they are not focusing on their software code to be protected. Once the software or a module has been developed, it should be protected from the stolen. It could be possible that a part of the software code can be used by the other developer or the company. In this case actual owner or creator of the code module won't be able to prove his ownership for this work. A model was proposed for the protection of IPR by using digital watermarking method for software code in web application.

Digital Watermarking is a technique in which a security key is embedded in the original code in such a way that the performance of the code should not be affected. The purpose of the embedding of the security key in the actual code is to prove the ownership later at the time of proof of ownership. The embedded code is then passed through the decoder system to extract the actual code. If the original code or actual code is same or identical then ownership can be proved. In the previous papers we have implemented the proposed model on web application and also on Android application. In this paper we have analyzed the performance of the embedded code created by using digital watermarking on the web application.

2. Digital Watermarking

In today's scenario, there is a fear to the actual owner of his original content that unlimited copies of their media are unlawfully are distributed, due to the rapid growth of the Information Technology. The duplicate copy of the original media looks like the same as the original. The creators of the actual content or media are very much cautious about to share their media on the Internet due to the above reason. Companies are facing problems for the protection of the intellectual property right (IPR) and copyright, during the sharing of their digital media on the Internet. Most of the companies are using concept of cryptography for the protection or security of the digital media. Cryptography is a technique which provides data confidentiality, availability, and integrity. In few cases it also involved the authentication. Creators of the digital media are mostly interested to share their work samples on the Internet that could be of any type viz. text, image, audio, or video. These samples could be utilized by the other people as a part of any other media. For the identification of the tampered media or copies and proof of ownership of the authentication, copyright protection is the solution.

Copyright protection involves ownership authentication and can be used to identify illegal copies. One approach to copyrighting is to mark works by adding information about their relationship to the owner by a digital watermark. Digital watermarking provides a means of placing information within digital works. This information may be perceptible or imperceptible to the human senses. Early watermarking work investigated how documents can be marked so they can be traced in the photocopy process.

Interest in digital watermarks is growing and seems to be motivated by the need to provide copyright protection to digital works. Watermarking can be used to identify owners, license information, or other information related to the cover carrying the watermark. Watermarks may also provide some control mechanisms such as determining if the work has been tampered with or copied illegally. In the realm of video on satellite broadcasts, watermarks are used to interfere with recording devices so that copies of broadcasted videos can be identified, if corrupted or tempered. A number of hardware and software technologies are being developed to deter illicit copying. [7]

The advancement of the Internet has resulted in many new opportunities for the creation and delivery of content in digital form. Applications include electronic advertising, real time video and audio delivery, digital repositories and libraries, and Web publishing. Digital watermarking is the process of embedding information into digital multimedia content such that the information (which we call the watermark) can later be extracted or detected for a variety of purposes including copy prevention and control, as shown in Fig-1. Digital watermarking has become an active and important area of research, and development and commercialization of watermarking techniques is being deemed essential to help address some of the challenges faced by the rapid proliferation of digital content.

The content being watermarked is a still image, though most digital watermarking techniques are, in principle, equally applicable to audio and video data. A digital watermark can be visible or invisible. A visible watermark typically consists of a conspicuously visible message or a company logo indicating the ownership of the image. On the other hand, an invisibly watermarked image appears very similar to the original. The existence of an invisible watermark can only be determined using an appropriate watermark extraction or detection algorithm.

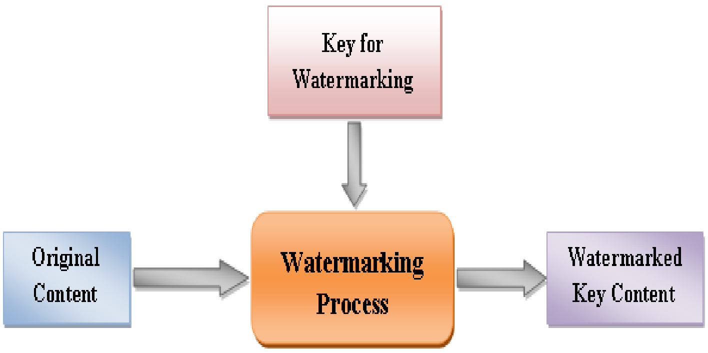


Fig- 1: Block Diagram of Digital Watermarking

It is an idea which is almost identified with steganography, in that the two of them implant a message inside Digital information. Be that as it may, what isolates them is their goal. Watermarking attempts to implant information identified with the first substance of the digital information, while in steganography the Digital information has no worth the data, and it is utilized as a spread to hide its essence. Watermarking has been utilized in a few centuries, as plain paper and accordingly in paper bills and so forth. The method of digital watermarking was created during the most recent 15 years and it is presently being utilized for a wide range of utilizations. Digital watermarking, with various applications, is a significant innovation, for the assurance of copyright and licensed innovation right.

Different watermarking plans have been examined for Text, image, audio, and video streams. A watermark is a familiar image or pattern that is impressed onto paper, which provides proof of its authenticity.

3.Digital Watermarking Algorithms

Notations used in the following algorithms are as follows:

M_O^m = Actual Value or original content before embedding

M_O^x = Actual Value or original content after extraction

M_W = Watermarked Value or content

X = Extra characters with length (=31 – length (M_O))

K = Security Key

$E_{M,K}$ = Encryption of Message using Security Key

$D_{M,K}$ = Decryption of Message using Security Key

P_{EM} = Process of Embedding

P_{EX} = Process of Extraction

A. Embedding Process

In this algorithm, Actual Value or original content (M_O^m) is converted into the encrypted form so that it cannot be identified. This encrypted content will then append with the security key (K) by using Embedding Process (P_{EM}), as shown in Fig. – 1. In this process, extra characters (X) are also appended. This combination of encrypted content and security key will become watermarked value or code (M_W) with extra characters. The security key is generated or created by using the Embedding Algorithm which we have suggested in our earlier research paper.

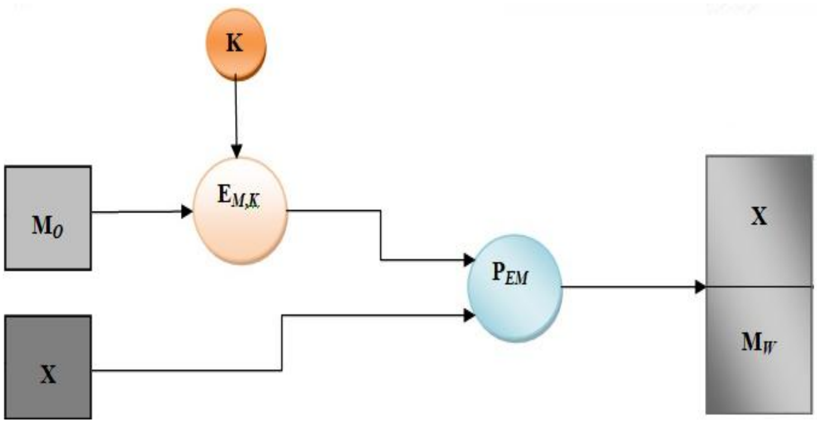


Fig- 2: Digital Watermarking Embedding Process

Algorithm for Embedding:

a. Declare an array, which consists of ‘a’ to ‘j’ characters from 0 to 9 index values.

0	1	2	3	4	5	6	7	8	9
a	b	c	d	e	f	g	h	i	j

b. Read input M_O^m

c. Find the length of M_O^m.

d. Encrypt M_O^m in to M_W by replacing each character by 5 characters ahead.

e. Insert 30 – length (M_W) characters in random order.

f. Insert last two characters from the array defined in step (a), on the basis of the length of the M_W.

g. Now this Encrypted String consists of First ‘n’ characters of encrypted M_O^m, plus random character sets, and last two characters for the length of original M_W, in encrypted form.

B. Extraction Process

Using this algorithm, Watermarked content (M_W) will pass into Extraction process for the extraction of Original content by using the Security key (K). This watermarked value is used as input for Extraction Process (P_{EX}). This process will extract the extra characters (X) and Watermarked content (M_W). This watermarked content, here, is decrypted ($D_{M,K}$) using the same security code, which was used during the process of embedding. Resultant will be the actual Value (M_O^x), which should be the same as the original value (M_O^m) inserted during Embedding Process. If this actual Value (M_O) is different then it will be assumed that the original content has been modified. Extraction process is shown in Fig. 3.

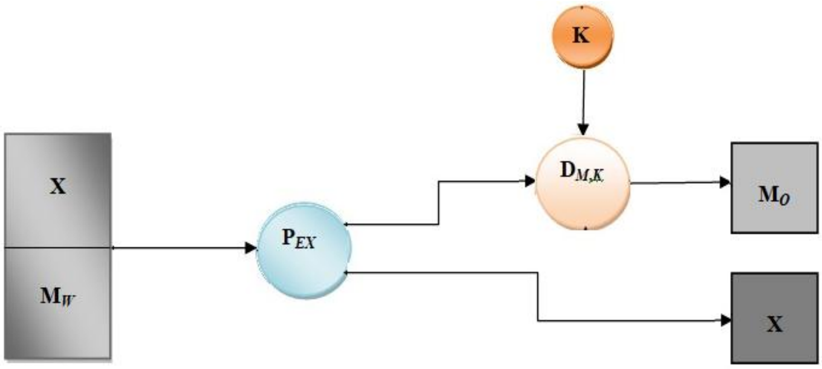


Fig- 3: Digital Watermarking Extraction Process

Algorithm for Extraction

a. Read M_W (Encrypted String).
b. Read last character and get the index value corresponding to the value.
c. Read second last character and get the index value corresponding to the value.
d. Calculate 'n', by putting first index at one's place and second index a tenth place.
e. Read first 'n' characters from M_W.
f. Convert these in to original string (M_O^x), by replacing them 5 characters less.
g. Check for watermark:
h. if (M_O^m = = M_O^x)
{ // Ownership proved }
else
{ // Fake User }

4. Implementation Analysis

For the assessment of the software code it is necessary to find out its performance to evaluate the feasibility of the software code, whether the code is efficient during execution. Performance Evaluation (PE) is a process to identify the performance of the software code with respect to the computer's memory and CPU. If the performance of a software code is average or poor then it is not advisable to implement. It may give the negative impact on the development team.

Performance of the code was evaluated by using the following formula:

$$PE = \frac{\text{Actual Value} - \text{Expected Value}}{\text{Actual Value}}$$

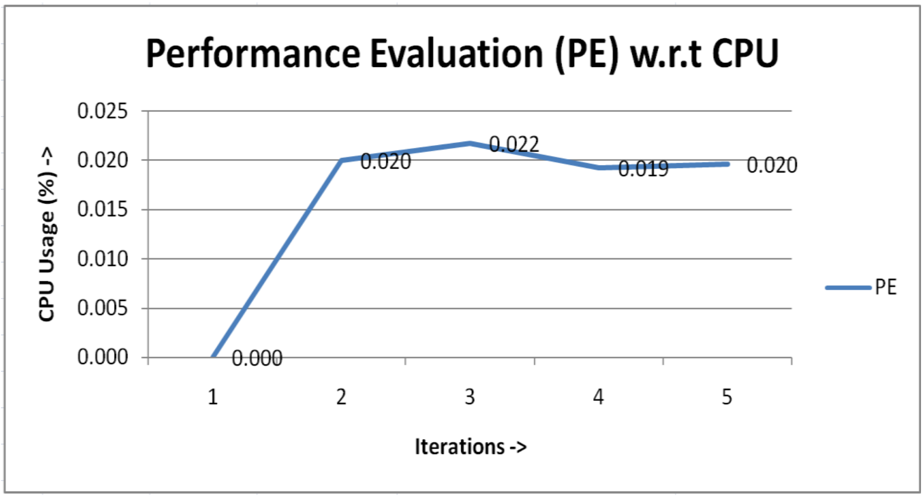
And

$$PE = \frac{\text{Value with watermarking} - \text{Value without watermarking}}{\text{Value with watermarking}}$$

The watermarked algorithm was implemented and evaluated on web based application on Opera Web browser. The performance was evaluated on three criteria, execution time, processing time, and running cost (memory used during execution). Following are the details before and after implementation of the watermarked algorithms:

CPU Usage			
Iteration	**Before Implementation (in%)**	**After Implementation (in %)**	**PE**
I	0.50	0.50	0.000
II	0.49	0.50	0.020
III	0.45	0.46	0.022
IV	0.51	0.52	0.019
V	0.50	0.51	0.020

Table (1): CPU Usage before and after implementation of algo.



If we calculate the average of Performance evaluation, then it is

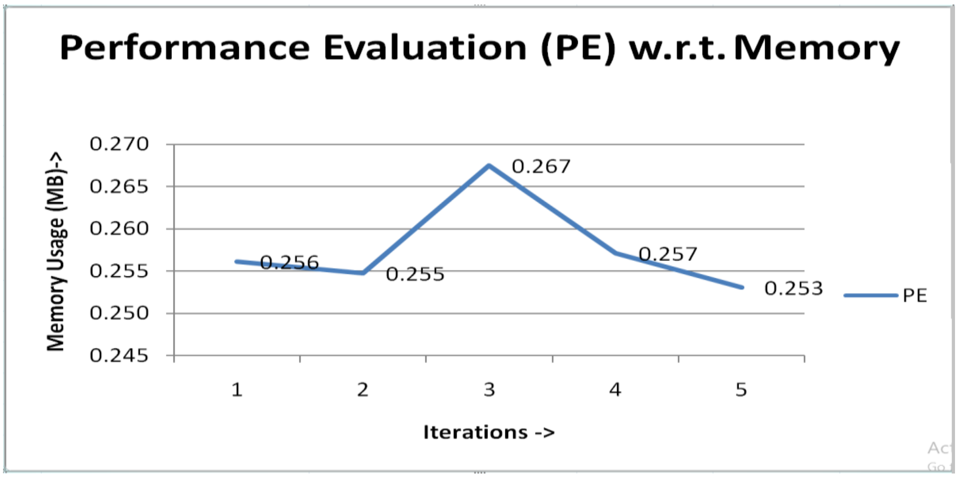
Average(PE_{CPU})

$= \frac{(0.000+.0.020+0.022+0.019+0.020)}{5} = \frac{0.081}{5} = 0.016$

which is approximately equal to zero. It means that there is no such effect on CPU if we use watermarked code for the security of the original content.

Memory Usage			
Iteration	**Before Implementation (in MB)**	**After Implementation (in MB)**	**PE**
I	36.30	48.80	0.256
II	35.40	47.50	0.255
III	35.60	48.60	0.267
IV	36.40	49.00	0.257
V	36.30	48.60	0.253

Table (2): Memory Usage before and after implementation of algo.



After calculating the average of Performance evaluation for Memory, we get

Average(PE_{MEM})

$= \frac{(0.256+.0.255+0.267+0.257+0.253)}{5} = \frac{1.289}{5} = 0.258$

which is approximately equal to zero. It means that there is no such effect on Memory also in the same case.

For the calculation of performance evaluation for execution of the application before and after implementation of the watermarked code, we observed that the starting time and end time are equal, i.e.

Start Time = 601 ms

End Time = 601 ms

While calculating the Performance Evaluation for the execution time, it is clear that:

$$(PE)_{ExeTime} = \frac{601 - 601}{601}$$

$$(PE)_{ExeTime} = 0$$

In this case it is clear that there is no change in execution time, before and after implementation of the watermarked code.

Therefore, it is observed and understood that the watermarked code can be implemented in a web application code, since it is not affecting the execution of the code. This shows that the proposed watermarking algorithm can be implemented.

5. Conclusion

For the protection of the ownership of the web application code, we have proposed a model using digital watermarking technique. These techniques were implemented on the web application using DOT NET. The proposed model was analysed its performance on three major criteria viz Execution Time, Processing Time, and Memory used by the application. It is found during the analysis that there is no effect on the execution time and processing time on the web application after the implementation of the watermarked algorithm. There is a slightly increase in the memory, if algorithm is implemented, but the value of the performance evaluation result is near to zero, which is significantly very small and can be ignore in view of the security of the code.

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CORPORATE GOVERNANCE AND FINANCIAL PERFORMANCE: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

Corporate governance mechanisms of the firms have become a crucial deciding factor for investors for making investment decisions in the wake of recent corporate scandals and violations of rules and regulations. This paper aims to systematically review the literature on the interrelationship of firm-level corporate governance with financial performance. To achieve that purpose, we analyzed 68 relevant studies selected from seven eminent databases. Findings indicate the regions and industry where a great amount of work has been done and also identifies the gaps where significant research needs to be undertaken. Further research can be undertaken based on the proposed future research scope in this article. This study conducts a comprehensive review of literature from 1991 to 2020 that will have implications for both policymakers as well as for industry professionals.

Keywords: *Corporate Governance, Firm Performance, Systematic Literature Review, Performance Measure, Rules & Regulations*

1. Introduction

Corporate governance is a prevalent and frequently used phrase in today's global business scenario. Corporate governance term comprises legal rules, policies, and regulations to control, manage, and regulate a corporation. OECD (2004) explains corporate governance as "A system by which organizations are directed and controlled".Corporate governance was an unknown subject until recent; it came into prominence as an important global policy agenda due to some major events happened during the last two decades (Krambia-Kapardis & Psaros, 2006; Marnet, 2007). The term "corporate governance" was first coined in America in the 1960s but remarkable progress in this area is the result of recent work than is usually purported (Mees, 2015).The seeds of present-day thoughts of corporate governance were likely planted by the Watergate scandal in the US. Along these lines in 1977, the Securities and Exchange Commission (SEC) propounded requisite reporting on internal financial controls. Besides in early 2000 because of the collapse of exceptionally viewed US corporations, for example, Enron, WorldCom, Sunbeam, and Tyco, stock exchanges started to decline in the US. The disclosures led to grievances of misrepresentation, corruption, and insider trading at a significant level. So in 2002 US enacted Public Accounting Reform and Investor Protection Act, known as Sarbanes-Oxley Act.

Around the same time, a progression of corporate fraud occurred in the UK. Acclaimed organizations, for example, Polly Pack, Bank of Credit and Commerce International, and Mirror Group broke down like a bunch of cards. Following an apparent lack of trust in the reporting of numerous UK corporations London Stock Exchange, set up a committee on the financial aspects of corporate governance in 1991 known as the Cadbury Committee.

India, too, had its share of scams and scandals, and a few examples are Harshad Mehta stock market scam 1992, Satyam Scandal 2009, and more recent violations of rules and regulations at Sahara India and Kingfisher Airlines.There were concernsabout security of investors' interest which prompted the foundation of securities exchange controller, Securities and Exchange Board of India in 1992(V. Srivastava et al., 2019).SEBI set up the committee on Corporate Governance in 1999 under the chairmanship of Kumar Manglam Birla and incorporated the suggestions of the committee in Clause 49 of the listing agreement introduced in 2000. In 2003, Narayan Murthy Committee gave its report based on which clause 49 was further revised by SEBI. In the same year, Naresh Chandra Committee presented its report recommending reforms in privately owned business and partnership firms. To additionally reinforce commitment towards fair business practices, the Ministry of Corporate Affairs introduced voluntary corporate governance guidelines in 2009. Keeping in view the latest trends a comprehensive set of corporate governance norms introduced through the Companies Act, 2013. More recently to further enhance corporate governance practices Clause 49 was revised by SEBI in 2014. Additionally, many more committees recommended numerous amendments keeping in mind the incessant events of corporate frauds.

Corporate governance is a multidisciplinary subject that crosses path with other disciplines like business law, ethics, finance, and accounting concurrently. (Ahmad et al., 2016). Corporate governance at an organization level plays a vital role in attracting investments, companies with good and comprehensive corporate governance mechanisms attract more investors. A firm can raise capital at a reduced cost if it follows good governance practices (Agarwal et al., 1996).

There has been a surge in research to examine the association of corporate governance with firm performances since the previous two decades.In India, the main corporate governance issue is to protect the minority shareholders from the expropriation by the controlling shareholders(Varma, 1997). A large number of studies have checked the link of corporate governance practices with firm performance against different blends of corporate governance indicators (Jackling & Johl, 2009; Chen, Kao, Tsao, & Wu, 2007; Khanchel, 2007; Gompers, Ishii, & Metrick, 2003; Judge, Naoumova, & Koutzevol, 2003; Pass, 2004; Andres, 2008; Dwivedi & Jain, 2005; Ghosh, 2006:Pintea et al., 2020). The objective of this paper is to present an overview of the extant literature on the association of corporate governance with the financial performance of firms. To achieve that objective, we did a systematic review and followed the guidelines proposed by (K. S. Khan et al., 2003).

The rest of the paper is divided into the following parts: Part 2 presents the literature review. Part 3explains the methodology used to conduct this systematic review. Part 4discusses the result of the review study Part 5 deals with thefuture research agendaIn part 6th, we discuss the conclusion and implications of the study and Part 7pinpoints the limitationsof the study.

2. Literature Review

Financial irregularities, corporate scams occurred during the last three decades led to a discussion around the world whether better governed firms outshine the firms with weak governance practices. Relationship of corporate governance with financial performance has been extensively studied from different aspects (see for example, Rashid & Islam, 2014;Brick & Chidambaran, 2010;Lefort & Urzúa, 2008; Arora & Sharma, 2016; Mejda, 2020; Shao, 2018; G. Srivastava & Kathuria, 2020; Wei, 2007; Das & Dey, 2016; Singh et al., 2016).Performance of fortune global 500 companies in the world is positively related with corporate governance practices followed by them ; firm performance is significantly positively impacted by board structure whereas a large number of meetings has the inverse relationship with performance(Malik & Makhdoom, 2016). Arora & Sharma (2016) conducted a study on Indian manufacturing firms and found that affiliation of corporate governance with firm performance is not so robust in India because, in the beginning years, firms did not adhere to the governance norms and regulations very precisely; further findings propose that companies can enhance their overall performances by governing the firms in conjunction with governance norms. In China firms value decreased by 4% in terms of Tobin' Q when anticorruption rules were announced in 2013 and accordingly companies had to alter their corporate governance structure and additionally their funding and operation techniques (Xu, 2018). The study by Al-ahdal et al. (2020) shows that Indian firms are performing better than Gulf Corporation Council firms that might be ascribed to good governance norms enforced in the country. Brick & Chidambaran (2010) demonstrated that administrative factors like passage of Sarbanes- Oxley Act, 2002 led to an increment in board activity such as higher number of meetings by the board; furthermore corporate occasions like merger or acquisition matter a lot in board monitoring activity, Tobin' Q found higher when board monitoring is higher.

Good governance score for a firm plays a major role in determining investor' confidence in developed market which helps in maintaining the liquidity in the firm,

However, corporate norms & guidelines in India are probably the best of its kind but it would not deliver any concrete results if the board does not act effectively, percentage of independent directors and their participation did not give appreciable outcomes but listing status of firms have direct relation with the performance as it was found companies registered at foreign exchange go after good governance practices to compete better in overseas market (Chauhan & Pasricha, 2010). A study by (Iren & Bathala, 2009) involves 1923 firms from 25 countries for the year 2005 shows in general organizations following English legal system scores high on governance parameter and valued high whereas German legal system following firms scores low both in governance score as well as in valuation. Foreign investors do not prefer countries with weak corporate governance mechanisms. Companies with extensive corporate governance mechanism have a low cost of capital and higher value over the companies having less extensive corporate governance mechanism as diminished cost of capitals leads to value premium(Pae & Choi, 2011) This is evidently clear investors do not favor weak governance structure because it does not give them protection for the returns on the investment made by them. Corporate governance is a mechanism that assures investors of their return. A study involving 'A' category listed companies of IT and FMCG sectors from India shows compliance of firm with governance norms in the country is at modest level but with persistent improvement year on year, additionally study finds the foremost reason for lack of independence in boards of Indian firms is high dominance of family members in the board (Kohli & Saha, 2008). Indian corporates have improved governance practices since the introduction of Clause 49 by SEBI in 2000 and so experienced increased financial performance as study shows direct positive relationship between efficient governance practices and firm performance; hence it is suggested by improving the governance practices a firm can increase the return on assets and subsequently the wealth of shareholders (S. Mishra & Mohanty, 2014). A study conducted by Arya (2013) to check the corporate governance practices of Indian banks finds that ICICI bank maintains the highly independent board among the chosen private sector banks whereas DBL has least number of independence in the committees of the board, additionally the boards of ICICI and SBI are highly active by meeting frequently in a year.A study conducted on companies listed on Bucharest Stock Exchange for the period 2010-2015 shows that typically 71.41% firms among the selected adhere to corporate governance regulations, so the impact of corporate governance practices in not so significant on firm performance, however an increasing trend can be noticed year on year in compliance(Pintea et al., 2020). A very recent study conducted on Indian Power utilities shows a sizeable amount of variance in compliance with norms by different utilities, Karnataka and Andhra Pradesh utilities are meeting most of the compliance and having high index value whereas utilities from Uttar Pradeshand Bihar are following very few parameters of corporate governance norms (G. Srivastava & Kathuria, 2020).

The extant literature on the relationship between corporate governance and firm performance has considered different parameters, regions and industries.However everyday a new form of corporate irregularities opens new avenues for research in this area. Based on the above literature, it seems there are great potential of research in this area as significant research gaps can be seen. We found some systematic reviews on corporate governance (Ahmad et al., 2016; Ahrens & Khalifa, 2013; E-Vahdati et al., 2019). This review study aims to pinpoint the research gaps in current literature against diverse contexts. Corporate governance came into prominence from the late 80s and early 90s, and the current time is the peak time of research in this area. Therefore, this study will enrich the literature by presenting an overview of existing research on the interrelationship of corporate governance with firm performance covering the time period of 1991 to 2020.

3. Methodology

We began with by way of the usage of an easy string **"**corporate governance and financial performances" to identify research papers in all the available databases and to become aware of the relevant journals in our subject of study. Corporate governance is an area that often crosses paths with finance, accounting, and economics disciplines, so for this review, we searched journals of all these specific areas. Next, we searched online databases (Taylor & Francis, Science Direct, Sage Journals, Oxford Journals, Inderscience, Emerald, and Springer) to discover articles published in relevant journals of our area of study. We restricted ourselves to the time period 1991 to 2020 to conduct a comprehensive review of literature in this area. In our analysis of literature, we found 57 studies from the overall literature carried out during the current decade. Around 12 studies were done in the last decade while 1991 to 2000 has been the dry period as we did not find any single research done during this period in our area of study. So it can be concluded that the current time period is the peak time of research in this area. We limited our search to the top-rated journals, and a majority of the journals are in the list of Academic Journal Guide (2018) approved by the Associations of Business Schools London, United Kingdom. We had to search one or more databases more than once, with minor changes in key-words and search strings as every database offers one of its kind search tools, so single strings do not apply to all the databases. We did this to ensure that we included all the articles published in top journals and directly related to our objective of review study.

We followed the guidelines proposed by (K. S. Khan et al., 2003) for planning this systematic review. All the selected databases were explored by applying the search strings and retrieved a total of 2173 studies. Then we chose the most relevant studies through analyzing the title, key-words, and abstract of the displayed studies and excluded the irrelevant studies. This analysis process ruled out 2038 studies, and we had 135 relevant articles for further analysis. In the next step, we study the introduction, results, and conclusion parts of the 151 studies to select the most relevant studies for our review purpose. In this process, 82 papers were excluded, and we left with 69 related articles. We eliminate some of the studies at this stage due to the repetition in multiple databases. Table I is the representation of sources of literature that we included in this review study.

This systematic review study will add richness to corporate governance research. The study aims to facilitate future researchers by presenting an overview of how much and what kind of research has been done in this area and what desires to be accomplished into the subject of corporate governance, particularly to check the link of corporate governance practices with the financial performances of firms.

Table I. Overview of search results

Databases	Studies retrieved	Studies included	Percentage
Taylor & Francis	24	14	20.6
Elsevier	12	8	11.76
Sage Journal	20	10	14.7
Oxford journal	3	2	2.9
Emerald	55	23	33.82
Springer link	21	6	8.8
Inderscience	16	5	7.35
Total	151	68	100

As far as the leading forum to publish research in the corporate governance area is concerned, Emerald has the highest share of relevant articles, 33.82% of the total. The second most top related papers are from Taylor& Francis 20.6% of the total followed by Sage journal, Elsevier or Springer link, Inderscience and Oxford journal.

Table. II Journals List

Journal	No. of publication	Percentage	References
International journal of business & Society	8	11.76	Usman & Yakubu (2018), Teti, Dell'Acqua, Etro, & Resmini (2016), Abor (2007), Bhatt & Bhatt (2017), Bhat, Chen, Jebran, & Bhutto (2018), Berthelot, Morris, & Morrill (2010), Roudaki (2018), Rashid & Islam (2013)
Indian Journal of corporate governance	5	7.35	Meah & Chaudhory (2019), Bishnoi & Sh (2016), S. P. Mishra & Harish Srivatsava (2010), Chauhan & Pasricha (2010), Iren & Bathala (2009)
Corporate Governance	4	5.8	Arora & Sharma (2016), Afrifa & Tauringana (2015), S. Mishra & Mohanty (2014), Malik & Makhdoom (2016)
International Journal of Business governance and ethics	4	5.8	Wellalage and Locke (2013)Ahmed (2011)Mejda (2020)Wahba Hayam (2014)
Journal of business research	3	4.4	Lefort & Urzúa (2008), Lien & Li (2013), Wu (2011)
Asia Pacific Business Review	2	2.9	Shan & McIver (2011), Wei (2007)
International journal of disclosure and governance	2	2.9	Kohli & Saha (2008), Rashid & Islam (2014)
Journal of Banking and Finance	2	2.9	Ahn & Shrestha (2013), Xu (2018)
Others	38	55.9	Abdo & Fisher (2007), Lei & Song (2012), M. Khan (2019), Hasan, Kobeissi, & Song (2014), Achim, Borlea, & Mare (2016), Zhao (2003), Lin, Liao, & Chang (2011), Florackis (2006), Korent, Đunđek, & Čalopa (2014), Syriopoulos & Tsatsaronis (2011), Ascherl, Schrand, Schaefers, & Dermisi (2019), Brick & Chidambaran (2010), A. Roy (2016), Panchasara & Bharadia (2013), Arora & Bodhanwala (2018), Singh, Aggarwal, & Anand (2016), Dharmapala & Khanna (2012), Krafft, Qu, Quatraroy, & Ravixz (2014), Haque (2015), Maranho & Leal (2017), Farhan, Obaid, & Azlan (2017), Bachiller & Garcia-Lacalle (2018), Eberhart (2012), Palaniappan (2017), Arayssi & Jizi (2018), Shao (2018), Srivastava, Das, & Pattanayak (2019), Ahmed Haji (2014), Pae & Choi (2011), Goel (2018), Haß, Johan, & Schweizer (2016), Das & Dey (2016), Amitava Roy (2014), Chong, Ting, & Cheng (2017), Nasir & Hashim(2020), G. Srivastava & Kathuria(2020), Pintea et al.(2020), Arya(2013)
Total	68	100	

We systematically analyzed the research work in the journals of our area, and selected a whole of 46 journals; these selected journals contain peer-reviewed research articles in the area of study as tabulated in Table II. We have shown every journal in a separate row that includes two or more than two research articles, and the rest of the journals having a mere one study are put in other categories. We found that International Journal of Business in Society is the best forum to publish research in our area of study; it published (8) articles. Indian Journal of Corporate Governance published the second-highest articles (5). These two journals together has 19.11% share in all relevant published articles. These two journals are followed by Corporate Governance or International Journal of Business Governance and Ethics5.8%, Journal of Business Research 4.4%, Asia Pacific Business Review, International Journal of Disclosure and Governance, Journal of Banking and Finance each has a share of 2.9% in total publication. In the others category, those journals included that have one paper from in our study such as Journal of Finance Crime, Ramanujan International of Business and Research and so on.

4. Discussion

The aim of this review is to synthesize the studies carried out by scholars in the previous three decades. Examinations of past studies revealed that impact of corporate governance practices on firm performance was not so robust because companies were not strictly sticking to the norms and standards as they mostly were wilful in nature but gradually countries reinforced their governance rules and made it obligatory for a specific set of firms so companies started scoring better in corporate governance score and the impact of governance practices is more visible in recent years studies.Due to recent corporate scandals, new issues in corporate governance keep coming up consistently; that is why corporate governance discipline begangetting the attention of researchers in recent years.

Additionally, when linking the latest five years studies with past studies a changing pattern is observed in selecting parameters for research in this area. In earlier studies, except a very few, most of the studies(Rashid & Islam, 2014; Chauhan & Pasricha, 2010; Korent et al., 2014;Wellalage & Locke, 2013;Abor, 2007; Ahn & Shrestha, 2013) were using only two or three conventional performance measures.; Tobin’s q, Return on equity, and Return on Assets. However if we analyze the latest five years studies(Arayssi & Jizi, 2018; Arora & Bodhanwala, 2018; Pintea et al., 2020; Arora & Sharma, 2016; Bhatt & Bhatt, 2017; Goel, 2018; Usman & Yakubu, 2018) an increasing trend has been observed to check the impact of corporate governance practices through a multiple of performance measures. Over the most recent years, researchers began to use other than the conventional measures such as weighted average cost of capital, return on sales, economic value added and return on net worth etc.Researchers give preference for using multiple financial performance measures to increase the reliability of results.

Similarly, when it comes to the regions of research concerned,we found that Asian countries are most studied. The two most significant and largest economies of influence in the Asian region, China and India, found as the most studied countries having a share of 26.6% and 11.6%, respectively. Both of these countries account for 38.2% of the total published studies in literature.A significant regional disparity is found in the current literature. Most of the studies on the interrelationship between corporate governance practices and financial performances wereundertaken in the Asian region.Two of the most advanced countries, America and England, were chosen as the region of study merely in 3.3% published studies. The rest of the studies that cover only one country accounts for a 17% share.

Another surprising result of systematic literature review is the deficiency of industry-explicit studies in this area. Just 11 studies considered specific industry to check the association of corporate governance practices with the performance of firms. A greater number of studies deals with the analysis of multi sectors, or they pickeda group of companies from multi - sectors such as top 30 BSE SENSEX listed companies or ‘A’ stock listed firms which comprise top firms of major industries (Srivastava et al., 2019; Wei, 2007; Singh et al., 2016; S. Mishra & Mohanty, 2014; Pintea et al., 2020; Arora & Bodhanwala, 2018; M. Khan, 2019). Industry specific studies can better check the influence of governance practices on financial performance of firms. Some studies have done commendable work by investigating particular industry firms in a specific region (Roudaki, 2018; Syriopoulos & Tsatsaronis, 2011; Panchasara & Bharadia, 2013; Bachiller & Garcia-Lacalle, 2018).S. P. Mishra and Harish Srivatsava, 2010; Panchasara and Bharadia, (2013) analyzed Indian banking industry, Bishnoi and Sh (2016) checked the influence of corporate governance practices on foreign firms operating in India, Meah & Chaudhory, (2019) studied manufacturing sector firms of

Bangladesh and Ascherl et al. (2019) analyzed real estate sector firms of USA, but there we found the missing element of inter-industry comparison in terms of corporate governance mechanism.Furthermore a region wise comparative study can give better results in terms of which country governance norms are effective and an industry wise comparative study can give an analysis of which sector is sticking to the rules and for which sector regulations need to be strengthened. A few studies (M. Khan, 2019; Iren & Bathala, 2009; Krafft et al., 2014; Malik & Makhdoom, 2016) tried to cover this regional disparity by taking many countries as their area of study. Malik and Makhdoom (2016) tried to cover the geographical differences by taking fortune global 500 companies as their sample, covering geographically dispersed 18 countries' firms.

5. Future Research Agenda

Corporate governance is gaining attention of the researchers, policymakers and practitioners in the recent times. The present systematic literature review tried to explore the relationship of corporate governance with firm performance from different perspectives.There is great potential for further research from varied angels in this area. In this section, we propose the future research scope with the help of theory.

Review of extant literature revealed that past studies are focused on a few sectors. Most of the selected firms of research belong to a particular set of firms such as top companies listed in a stock exchange of any country(Srivastava et al., 2019; Wei, 2007; Singh et al., 2016; S. Mishra & Mohanty, 2014; Pintea et al., 2020; Arora & Bodhanwala, 2018). However certain sector sometimes requires a different set of norms because their governing pattern is different. Though an attempt has been made by some scholars to analyze the specific industry (Chauhan & Pasricha, 2010; Arora & Sharma, 2016;) but that is not adequate, still many sectors are untouched. This can be put forward as a research question for future researchers:

RQ1- Good governance is equally important& applicable for every sector and further it can be analyzed to check the impact of governance practices on sector specific firm' performance.

As it was observed a great amount of literature deals with the top companies and in this process of selection financial sector firms were not included. There are numerous study in literature analyzing top firms but excluding financial sector firms (e.g. Lefort & Urzúa, 2008; Mejda, 2020; Arora & Bodhanwala, 2018). The rationale for this might be different regulations needed for financial and banking sector companies. Although there are a number of studies pertaining to banking sector firms(S. P. Mishra & Harish Srivatsava, 2010;Bachiller & Garcia-Lacalle, 2018; Arya, 2013)but we didn't find any specific study in literature covering non – banking financial sector firms. Despite this fact, over the past years, a number of scams have occurred in the non- banking financial sector firms all over the world. This lure us to propose another research question:

RQ2- Non- banking financial sector explicitly need to be studied in terms of impact of corporate governance practices on firm performance.

The scarcity of comparative studies is found in the literature. Moreover, most of the studies have focused on a single country. A very few studies such as Malik & Makhdoom, (2016) analyzed global fortune 500 companies belonging to different countries. Cross- country analysis in terms of corporate governance practices implemented, and their effects on the performance of firms will have more policy implications. Since this will help in determining which country's governance rules and regulations are more effective. Besides, inter- industry comparison within the country will further give an insight which industry compliance is robust. This research gap encourages us to propose another set of research questions:

RQ3- Comparative study in terms of impact of corporate governance practices on financial performance can be conducted between developed countries and developing countries.

RQ4- Comparative study between major industries of a country pertaining to relationship of corporate governance and firm performance can be conducted.

6. Conclusion& Implications

This paper summarizes the literature on the association of corporate governance practices with firm performance and gives a comprehensive and detailed review. Relating to the review, it can be concluded that corporate governance as a research topic is getting prominence among researchers. Though corporate governance has evolved as a concept in previous three decades, still there is lot of possibilities in theoretical development. At this point each study in this area will be a significant contribution to the literature. As of now, investigation of relationship of corporate governance with firm performance is limited to certain set of firms or industry which can be additionally reached out to numerous sectors. This review gave a scope to think back towards corporate governance since its beginning to till date.

This review has a major implications for policy- makers and practitioners. Systematic literature review finds there are some sectors overlooked by the researchers.Policy makers should develop such a mechanism so that compliance with rules & regulations can be maintained in each sector. A monitoring mechanism for all sectors & industry can help with regard to maintaining compliance. Literature shows a good compliance with corporate governance practices positively impacts firm performance so practitioners can enhance firm performance by adhering to the governance norms; Moreover, it would be imperative for them to regularly monitor firm' internal governance mechanism.

7. Limitations

This review study is limited to selected number of databases. Further we stick to the same search strings while searching for articles and that limited our search. In addition, we examined limited number of reviews having standard characteristics of publications in selected databases only. While reviewing literature only one dimension of corporate governance that is impact on financial performance is analyzed there could be many other ways good governance can have implications for a firm.

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EFFICIENCY IN PUBLIC AND PRIVATE SCHOOL IN CHIRANG DISTRICT OF ASSAM

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ABSTRACT

This paper attempted toanalyse the comparative efficiency of public and private schooling emphasising on internal efficiency. Studying the efficiency in both public and private schools and comparatively analyzing the efficiency of both the two sectors are the main objectives of the present paper. This study followed the descriptive survey method and it is based on quantitative analysis. Data of the study are collected through questionnaire provided to the schools and a special test is conducted to see the outcomes of the students.Findingof the study reveals that inefficient management and failure of optimum utilization of resources are the main reason for the low level of outcome in public sector schools.Private school students outperform their public school counterparts. Evidence is in the study thatthe unit costs of private schools are lower than public schools. Government has been allotting huge amount of fund for the development of education system but because of ineffective utilization of fund and other resources public schools' outcomes are below than expectation.

Keywords: *Efficiency; Public School; Private School;Chirang; Assam*

Introduction

It has been realized that education, which create efficient and equitable outcomes is key for economic prosperity and social cohesion. It is a critical factor to develop long-term potential for competitiveness as well as for social cohesion. So an efficient education system can create economic growth control wastage of resource.

Efficiency of an educational system concerns the optimal use of resources (inputs) in producing its outputs. It is the private and social benefits derived from investment in education. School efficiency is achieved by taking all the resources that a school has and deploying them in the way that best supports pupil outcomes.

Most of the developing countries provide public education up to elementary and secondary level of education. In India education is free and compulsory up to secondary level of education. The formal education system in India has its roots in colonial history. Private and public initiatives in education are coexisted. Political independence and the recognition of the importance of education led to large-scale public investment in the sector. However, the experience has been varied, depending on the history of each state. Nowadays, all around us are signs of mistrust of the public education system and we hear loud complaints about poor quality and corrupt management of government schools. In many parts of the country, there are attempts to get the State to withdraw from education, or merely be a funding agency for private initiatives.

Many governments, out of ideology or just fatigue, seem not completely unwilling to do just that. In addition to purely private and government initiatives, most states have a large number of private aided schools where the schools are owned and administered by various private charities, individuals or group of individuals. But it is noteworthy that the state education system is beyond repair. The failures and fault lines are multiple. There is a failure of provision. In spite of the enormous amount of financial and human resources that have been dedicated, millions of children receive no schooling. For many of those fortunate enough to be in school, the outcomes are barely worth the trouble. Poor quality is a malaise in the system. There are serious organizational failures in school administration.

In this paper, the relative efficiency of public and private schooling in Chirang district of Assam is discussed. Here the public education refers to the government funded schools and private schools refer to the non-government funded or schools run by some private charities.

Chirang is a small district of western Assam with low literacy rate. It is one of the districts under Bodoland Territorial Region (BTR) of Assam. Most percentage of the population belongs to Schedule tribes and lower economic classes. The literacy rate of the district according to the census report 2011 is 64.71% where male and female literacy rate are 71.35% and 57.87% respectively securing 25th position in district wise rank. As almost all area of the district is under rural areas, the children get education in public aided Assamese and Bodo medium schools. Only the well to do family sent their children to private schools. There is a massive change which can be observed in schooling. At recent times parents is showing willingness in sending their child to the private schools. Enrolment in public elementary school is decreasing. And there also raisea question on the performance of public schools. Therefore, it is the high time to focus on the issues regarding internal efficiency in public and private schools in the district.

Conceptual Framework of Efficiency

Efficiency of an educational system concerns the optimal use of resources (inputs) in producing its outputs. It is the private and social benefits derived from investment in education. School efficiency is achieved by taking all the resources that a school has and deploying them in the way that best supports pupil outcomes. It has been one of the central concerns in analysis of resource allocation in various economic theories. Economic theories refers efficiency as the possible satisfaction of wants within resource and technological constrains and implies organizational constrain on transmission of knowledge and information processing. Thus, the concept of efficiency is associated with decentralization of organizations. The key of measuring efficiency in education is paying greater attention in ultimate outcomes of the individual. Which occurs in life cycle of the individual and these can be evaluated income, health status, reduction of inequalities and good citizenship of the individual. In the elementary education the efficiency can be evaluated in the quality education, ultimate outcomes of the students in their further education and developed eligibility of the students. At the conceptual level efficiency can be divided into two levels such as external efficiency and internal efficiency. External efficiency is concerned with the cost-effectiveness with which the institution serves the broad economic and non-monetary cultural needs of society, whatever they might be. External efficiency refers to the success of the individual in terms of ultimate outcomes regarding non monetary returns. It is differ from non-cognitive personal characteristics of the individual.

On the contrary, internal efficiency emphases more on the internal operations of the institution. The term internal operation can be broken down into technical operation and allocative operation. Effective teaching learning process is the technical operation and good textbooks, libraries, class size, computer problems, and teacher time that should be used to produce the most cost-effective learning results are included within locative operation. Internal efficiency deals with the production and consumption efficiency. It is associated with various cognitive skill and proficiency of the individual which have impact on production. This intended to capture the relationship between input and output.

In this paper, the investigator has focused more on internal efficiency than external efficiency and will measure the elements of internal efficiency to study the whole efficiency in elementary level of the concern district.

Review of Related Literature

Reviewing the previous studies that would be familiar to the proposed study is an inseparable part of the research work. The proposed study takes advantages of the knowledge which are accumulated in the past. No research can be undertaken isolated. A careful review of research journal, books, dissertations, theses and other source of information makes the future work systematic and prevent from the reputation of errors and unnecessary repetition of the similar investigation. For the interest of the present study, the findings of a few earlier studies are done and examined as follows

Kalyan (2009)studied on educational outcome, function and efficiency of public school and implication of socio economic and environmental factors by using Stochastic Frontier Model. The study found high efficiency in the study area. However socio-economic factors have great influence in student’s achievement score.

Lincove (2006) analyzedbased on World Bank strategies like Privatization, Decentralization and citizen participation to cost and improved transparency in education. The study shows that in the time of promoting efficiency these strategies can harm equity. Many of World Bank projects affective for girls' education but fail to create gender awareness.

Nadeem and Othman (2002) explore the efficiency of public education system in Kuwait in compare to other countries of the world. Findings of the study were- the overall public expenditure on education in Kuwait is not insufficient compared to other countries. Despite this, there exist some internal inefficiency in the form of low spending on textbooks and teaching materials, short length of the school year, a low student teacher ratio and a high repetition rate.

Thomas and Lawrence (1996) concluded in their study with the findings that states' increasing control over the education lead to less efficiency in education because they limits variation in spending across the state. Students are more competitive and catholic private school areas are more efficient but the finding did not show any evidence of inter jurisdictional competition results in greater efficiency.

Emmanuel; Marlaine and Vicente (1991) assess the reason of massive privatization and make a comparative analysis on efficiency of public and private school trough case study method. While the result shows that performance of private school students are better than that of their public school counterpart as they are more responsive to the needs of students. But the unit costs of private schools are lower than public school. Thus governments need to reconsider their policies.

Objectives

i. To study the efficiency of education in public and private schools.

ii. To make a comparative analysis on the efficiency in teaching learning process of public and private schools.

Research Questions

i. Why the learning outcomes in public schools are low?

ii. Is there any difference between efficiency in public and private schools?

iii. What are the reasons behind inefficiency in schooling system?

Methodology

The study is a descriptive survey method and based on quantitative analysis. Data for the study are collected from Chirang district of Assam through questionnaire and interview schedule from the sample. A performance test was conducted to the students of class I, IV and VII to test the learning behaviour of the students. For this purpose 10% from the total population were selected as the sample for the study through stratified random sampling technique. Other data are also collected from the District Authority of the concerned department. The Head of the institutions and teachers have participated as the respondent for the study. A sample of 100 students from both public (75) and private (25) schools weretaken for collection of primary data. Distribution of the students participated are shown in following diagram. Cognitive behaviour of the individual variables is controlled by statistical techniques. Arithmetic mean is used to calculate performances of both types of schools and comparison between public and private school's efficiency is done by co-efficient of co-relation.

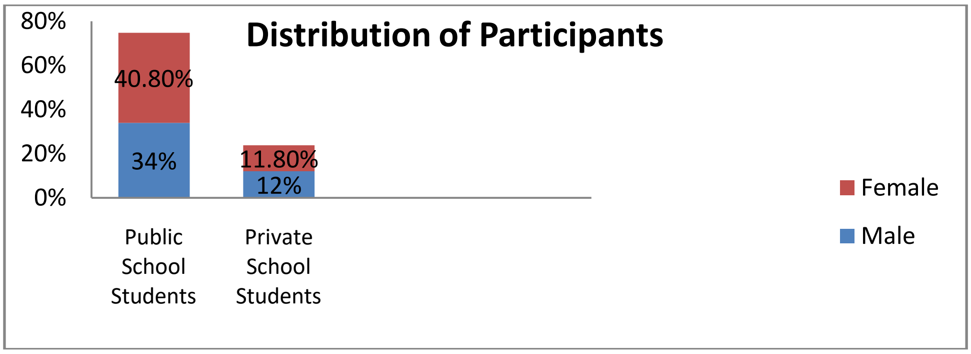

Figure 1: distribution of student participants in achievement test

Findings and Discussion

The main findings of the study are based on inputs used effectively and the achievement of the students tested in learning behaviour.The research is intended to study the relative efficiency of public and private schools with more emphasising on the internal efficiency. Where, internal operation of the institutions or utmost utilization of the resources is the main variables of the study. The efficiency of public and private schoolsis calculated by a model of efficiency circle. It is measured from three dimensions-

1. Outcome of the students
2. Academic functions
3. Management of the school

Along with these, many other efficiency indicators are also focussed in thisstudy like-

1. Curriculum management
2. Exercising Administrative Control
3. Instructional Management
4. Human Resource Management
5. Finance Management

Finding shows that implementation or utilization of resources in private schools gain higher percentage than public sector schools. Wastage is hardly found in private schools. Work force and utilization of cognitive skills are high in private sector schools. Allocation and technical operation of the resources in private schools are higher than public schools. Effectiveness of functioning in the private schools is three times more than public school (**Table no. 1**). Resources allocation is highly effective in private sector unlike public sectorschools. Separate classroom, subject wise teachers' appointment, enough TLMs, specials and trainers' facilities are made available in private schoolsbut students in public sector schools deprived from these facilities. Ratio between student teacher in private schools is commendably risen up from their public school counterparts. Public schools are running with 30:1 formula.In many primaryschools total number of student is less, they got only one or two teachers where there are 5 classes in primary schools. In such schools it becomes tough for the teacher to manage the classes. But private schools provided either subject wise or class wise teacher in primary level also. Most of the private institutions are running elementary education with advanced syllabi and curriculum. Classroom in upper primary level is digitalized in few private schools in the concerned district. Design of education in both public and private education systems are based on the NCERT guideline. Still root level education is emphasised more in private schools. Pre primary education is given separate level but its administration is given less important in public schools. The study also found that the few years back government of Assam have allowed appointing special teacher for pre primary level but due to ineffective fund allocation this was discontinued.

Table no. 1: Performance of cognitive skill operation in Public and Private School

School Authority	Mean Value [1]
	Lower Primary
Public	28.33
Private	85
	Upper primary
Public	29.35
Private	90
Note: calculated from performance in same questionnaire provided	

Source: special survey conducted

Achievement of Publicand Private Schools in Performance Test:

Do the private schools provide better education than public schools? This is one of the precise questions of the hour. The principal finding of the study is that private school students outperform the public-schools counterparts in the same test of English language, Simple Arithmetic and General Knowledge. Private school students' performance is better than public school students' in all the three subjects (**Table no. 2**). Vernacular medium public schoolstudents'performance in English language is consistently weak. Only 3%of class 1 students from public schoolswere able to read English alphabets. But in private schools, students are able to acquire simple wordsjust from class 1.On the contrary students of vernacular medium private schools have performed well in equivalent with the English medium private schools. A little improvement was seen in upper primary level of public schools. Performances in another two subjects in both types of schools follow the same path.

Table no. 2: Achievement score of students in performance test

School Authority	English Language	Simple Arithmetic	General Knowledge
	Lower Primary		
Public	20	38.67	53
Private	85	81.22	70
	Upper Primary		
Public	43.21	47	48
Private	79.5	53	86

Note: Mean value of the achievement of students

Source:Special Test Conducted

Efficiency in Public and Private Schools:

Privatization of elementary education is one of the burning issues in recent times. And the main reason behind this issue is people have loss trust on public schooling. Directly or indirectly is because of lack of efficient education system. The efficiency of public and private schools are calculated by a model of efficiency circle (**model given above**). Result of the calculation is shown in following table.

Table No. 3: Efficiency of Public and Private Schools

Dimensions of Efficiency	School Type	Mean	Standard Deviation	Co-Efficient of Correlation
Students' Outcome	Public	37.23	13.51	-0.5
	Private	78.74	6.37	
Academic Function	Public	52.2	2.23	-0.34
	Private	97	1.7	
School Management	Public	91.85	4.15	0.25
	Private	99.6	0.5	

Source: special survey conducted

The picture of education system in both private and public sectors is very clear from the above table. Efficiency for the two types of school is quite different. In the three types of dimensions private schools have high mean. Private schools are rising with high mean and low variability.

While discussing on the public schools, it is very unfortunate that those schools have very low efficiency. Learning outcomes of the students are consistently low. The mean of the achievement of the respondents from public schools are far below from 50%. It can be considered as the consequences of the ineffective utilization of the resources. Cognitive skills of the teachers are not utilised effectively. On the contrary private schools' students outperform the publicschools. Conception and idea of any topic is made clear in private schools where it is slow within public schools' students. This result is interpreted by the teachers of public schools that low learning competency and least enthusiasm of the students lead to the lower learning outcomes of the students in public schools. This is hypothetical because of the lower level of education of the parents and poor economic condition of the family. It was also observed that most of the private schools in the district charge a reasonable fee from the students. In this case the unit cost of the public schools becomes higher than that of private schools. Investment is higher but its outcome is lowin public schools.

The second dimension of the efficiency of public and private schools in this research is academic functioning of the schools. Findings of the research clearly expose the status of public and private elementary schools. The way of educating children in both public and private schools are according to the guideline provided by the NCERT. Investigation found that most of the public schools are running with limited teachers. Unlike private schools' public school do not have provision of special teacher for mathematics, Art education and other co-curricular activities for all round personality development. There is no provision of subject wise separate teacher in public primary schools. It is already mentioned that pre-primary education is running just like for the name's sake in public sector schools. The finding revealed that there is no provision of class wise and subject wise separate teacher in public schools, only two or three teachers are running a school with 5 classes in lower primary schools. Even many schools are running with single teachers in the concerned district. Thus, in most of the schools, teacher could not manage classes for pre-primary level. On the other hand,it was also reported thatfor higher classes (Class VI to Class VIII) a class wise separate teacher in primary level, Subject wise separate teacher is appointed in elementary schools in both public and private schools. Pre-primary education is of two year in private schools, it is divided into two classes LGK and UKG respectively. Private schools take optimum care for the academic development of the students (**Table No.3**). Private schools' performance in academic functioning is near to 100% and these schools mostly run with advanced syllabi. Students of vernacular language private schools are also taught English language in advanced. But this is really not happening in public schools (**Table No.: 2**). There are provisions of remedial and special classes, frequent unit tests, class test etc. in private schools which is rare in public schools. Only 5% from the sample schools conducted unit tests and almost all the schools except few amalgamated (policy of merging different level of schools located nearby into a single administration by government of Assam)schools do not provide any remedial or special classes. While looking into the TLMs there is no provision of subject wise learning equipment such as mathematical equipment, science equipments and geographical equipment in public schools, only a piece of globeis available in public schools. In few upper elementary schools learning equipments are partially available. But maximum private schools learning equipments are found available and some of the schools have facilities for digitalized learning.

The third dimensions of measuring efficiency of education in elementary education, administration functioning of theschools are effectively analysed by the above calculation **(Table No.: 3**). Mean of the administrative functioning of both the public and private schools are much different. Both the public and private schools' performance are satisfactory. Commendably public schools have high performance in this dimension unlike two other dimensions. Variability is higher in public schools. Parent teacher associations, parent teacher meet, community meet are common in both public and private schools. Least performance is there in school timing. The schooling duration norms provided by the government education department is 9 A.M. to 2 P.M. it is 5 Hours and 30 Minutes. But unfortunately only least number of schools could open in right time. Evaluation is done quarterly in both the schools. Public schools don't provided funds by the government for micro projects and educational tours and they also cannot collect money for these purposes. But private schools are able to organize these programmes by their private costs which is very important for the all round development for the students. Teacher Student Ratio in public schools is below than the norms. It is below than 30:1 formula. Currently in Chirang district there are 74Nos of Elementary schools (*source: SSA, Chirang, 15 July 2021*) which are running with single teacher in the whole school or single teacher in a medium. On the other hand private schools appoint subject wise or class wise teacher. Apparently it's ratio between teacher and student is higher than the 30:1 formula.

Public versus Private in Efficiency

Investigation is clear after the analysis of the data found. Analysis of the finding exposes that private schools' efficiency is higher than public school. Comparison between the efficiency of public and private schools are done by Spearman's co-efficient of correlation. The co-efficient of correlation between the efficiency of private and public school is shown in above table (**Table No.: 3)**. Result reveals that in two dimensions outcomes of the students and academic function of the public schools and private schools are negatively correlated to each other. In third dimension they are positively correlated. The correlation between the two discloses the raising privatization in the field of education. Private schools are gaining efficiency than public schools.The similarresult also counted by a study conducted by Jimenez Emmanuel, Marlaine E. Lockheed and Paqueo Vicente ("The Relative Efficiency of Private and Public Schools in Developing",*The World Bank Research Observer*, Vol. 6, No. 2, Jul., 1991), Still after high investment public schools fail to gain higher efficiency. Due to the failure in utilization of resources and fund allotted, government system of education could not achieve to the targeted goal.

Conclusion

Inputs or resources play a great role in a successful education system. It is considered that supply of high resource is best outcomes. But at the same time the implementation or utilization of resources is utmost necessary to produce best outcome. In India right to education is a Fundamental right. Constitution of India provides free and compulsory education up to 14years of age. Education is free in public sector schools as whole expenditure is done by the government. In private sector, the row-cost of education is students' fee. In the concerned district maximum private schools are of low cost. Expenditure and unit cost of the private schools are far below than public sector schools. All the learning equipments from classroom equipments to school uniform and even mid-day meal are government supplementary in public schools.Thus the government should focus on the well utilization of resources. Initiatives should be taken to reduce the wastage of resources. Currently many qualified teachers are appointed in public sector schools. Thus their cognitive skills should be utilized in optimum level and strict action and strong policies to be taken for these purposes.

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EXPLORING THE DIFFERENCES BETWEEN BUSINESS COMMUNICATION AND GENERAL COMMUNICATION: A POTENTIAL KEY TO SUCCESSFUL ACCOUNTING AND MANAGEMENT EDUCATION IN A GLOBAL WORLD

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ABSTRACT

The ongoing globalization of business emphasizes the need of teaching students to acquire a worldwide perspective. This experimental research aims to give educators some insights into the utility of a brief student exchange program. Throughout the research, it became clear that the sheer prospect of studying overseas contributed to spark interest in another society. Furthermore, the respondents noted that visiting other nation offers a greater understanding of that country. This research contends that in a competitive business environment, a research overseas programmed may be an essential educational instrument for boosting accounting and management education. Joining a study overseas programmed allows students to obtain foreign experience and multicultural abilities, both of which are critical for effective globalization and management. This paper provides insights and suggestions for management education leaders, such as school of business department heads and executives, as well as leaders of a diverse scope of businesses that comprise a wider environment, such as lawmakers, accrediting bodies, leaderboard organizations, evaluation businesses, and others.

Keywords—*Business, General, Accounting, Management, Education, Communication, Study, Organization, Knowledge.*

I. Introduction

This study has demonstrated the continuing transformation of the management and accountant's function from accumulation and presenter of financially data to even more strategy-oriented business manager. The area of management accounting has changed dramatically since the release of the Skill Structure. This shift may be thought of as four sight lines for business models: supervision, insight, retrospect, and prediction. Monitoring is a conventional CFO function that encompasses allocation of resources, keeping a strong financial status for future investments, and other responsibilities. In other terms, using past information for the future forecasts is what perspective involves: looking backward to positively affect the future. Understanding is the process of converting data into knowledge; it is the starting point for corporate collaboration. Financial experts play a key role in forecasting the future and assisting their businesses in envisioning the future in vision. Strategy formulation, competitive man oeuvres, and innovation are all part of it. Being able to give foresight is becoming highly essential and anticipated in today's finance activities.

The constant evolution of technology is a major driver of this shift. While technologies have long been an essential element of the management accountant's set of skills, its significance is growing rapidly. Many of the regular activities done by management accountants are being reduced, and in some circumstances eliminated, by technological developments, allowing them to offer greater value as business associates with the rest of the firm. Strategic management, which encompasses strategy creation, evaluation, and execution, is quickly being a required skill for management accountants.

II. Difference between General Communication and Business Communication

The two most important types of communication are General communication and Business communication. When we communicate information that is unconnected to business, we term it general communication [1], and when we exchange information that is relevant to business, we call it business communication [2]. Business communications systems, processes, kinds, and concepts, for example, are nearly identical to those of general communication. The primary distinctions are found in their goals, techniques, and regions of application. In table 1. the following examples demonstrate the distinctions between Business Communication and General Communication from various perspectives:

Table 1 the distinctions between Business Communication and General Communication

Serial No	General Communication	Business Communication
1	Communication in General It is less formal, more indirect, and poorly structured.	Communication in Business It is more professional, straightforward, and well-organized.
2	The definition of general communication is Individual sentiments, emotions, and views dominate common communication.	Communication in Business Personal thoughts, emotions, or opinions have no place in business messaging.
3	Communication in General It is possible that it is incomplete and biased.	Communication in Business It is neutral and fair.
4	The field of general communication has Tables, charts, graphs, photographs, diagrams, and other reference material are rarely utilized here.	Business Communication has evolved. Tables, charts, graphs, photographs, diagrams, and other visual aids are widely utilized in business communication.
5	In certain situations, general communication feedback is not as crucial.	Communication in Business Feedback is more crucial in this case because the success of Business Communication is heavily reliant on it.
6	Communication in General Private emails are not usually accepted as evidence in court.	Business messages are preserved for legal purposes.
7	General communication is used to discuss general and personal matters.	Business Communication has evolved. Business communications regularly urge workers, consumers, or customers to perform a certain task.
8	General communication can be used to notify participants about specific issues.	Communication in Business Every text in corporate communication is designed to evoke a specific response.
9	Communication in General In some cases, general communication may contain misleading info.	Communication in Business It is constantly concerned with practical knowledge.
10	The field of general communication has Various forms are employed here depending on the communication's intent.	Communication in Business It employs specific forms to communicate the content.
11	Except for business, general communication is concerned with information.	Only business-related information is discussed in Business Communication

What really is business management?

Business management is concerned with the organization, scheduling, and analysis of business operation necessary for the proper administrationand operation of a business [3]. You will study what makes an organization more effective in a crowded global business climate, as well as the skills and knowledge needed to work for associations of all types, from multinational businesses to start-ups.

I. Three basic construction components

*A.*Management is vital in society and business.

Management has an impact on business performance. Manufacturing facilities that used better, more organized management techniques, for example, outperformed their peers in terms of productivity, profitability, development, and innovation [4]. The connection is strong across sectors and geographies.

Proper management practices are associated with not just more effective resource use but also complementary human resource practices, implying that economic development does not have to come at the price of inclusiveness.

There is, indeed, a multiplication impact when better managers engage in growing their teammates and systems to empower and assist them.

In general, research is beginning to link business's economic and social objectives in novel and surprising ways. For instance, it is predicted that the commercial potential connected with the Sustainable Development Goals would total $12 trillion, with the majority of the profits going to early entrants, first adopters, and firms who set the bar.

B. Management is all-encompassing.

The argument is that administration is not limited to the c-suites of multinational corporations, or even to business in general [5]. It occurs in all businesses, and organizations range in size and shape from start-ups to state-owned companies, franchising to home businesses, churches to internet behemoths.

Of course, distinctions across sectors and industries must be considered. Similarly, administrators represent many company areas (such as marketing, accounting, and operations) that need a high level of expertise and application.

However, much of management crosses businesses and functions, as well as countries and generations. The responsibilities of strategics, organizing, planning, producing, and doing things with and through other individuals are not limited to an exclusive corp. To practice management, no license is required.

C. Management is hard to do:

The fundamental ideas of business and management are not difficult to grasp. Most administrators will agree, nevertheless, that practicing management is far more difficult than knowing it [6]. This is due in part to the complicated, ever-changing environment, as well as the inevitable unpredictability.

But, more importantly, it is because it entails getting things done via people who have their own opinions, judgement, and goals. Humans' skills are required not just to fulfill shared goal, but also to promote learning, innovation, and development in business.

Increasing social and environmental performance requirements have resulted in a broader range of customers and factors to control [7]. All the while, the economic environment's borders have been dissolving, with fresh and unexpected challenges from businesses in apparently unrelated areas becoming the standard.

Why should you analyse business management?

A business management education is a common choice for ambitious entrepreneurs and company executives [8]. It gives you the academic information and skills you need to seek worldwide job possibilities, as well as a comprehensive grasp of business and specialized sectors like finance and human resources. But if you're still not sure if a business management education is right for you, here are five arguments that will persuade you.

D. Business Management Skills

One of the most important benefits of pursuing a business management education is the acquisition of crucial managerial abilities that will enable you to be a significant contributor to any business [9]. You will acquire a skill set that will enable you to adapt to problems and current trends in business and society, allowing you to make educated executive choices that take into account ethical, economic, and social consequences.

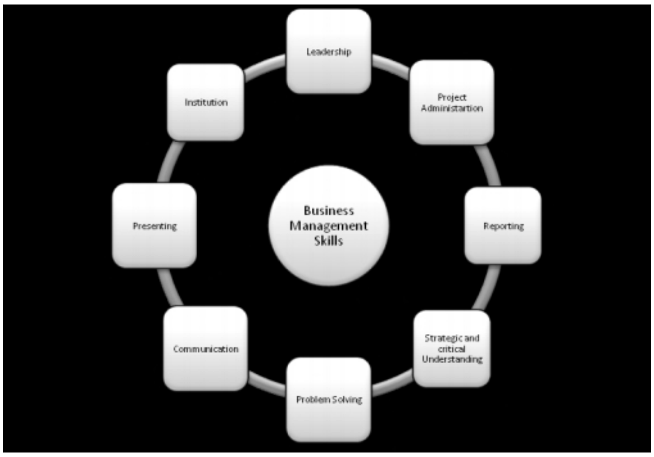

Fig 1. Business Management Skills

E. Employability

Students who pursue business management at university graduate with extremely coveted transferable skills and solid business understanding, both of which are widely desired after by future employers [10]. You will be capable of determining the course of your career as you move through your business management degree, selecting a specialized field of business that fascinates you, such as entrepreneurship or human resource management. Business management graduates can find work in a range of fields, including:

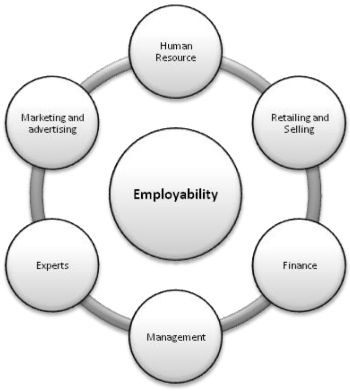

Fig 2. Employability

F. An overview to the business world

A business management education can help you obtain in-depth understanding and knowledge of the key aspects of business and management. It is also a wonderful way to get started in the business sector if you have no previous experience [11]. It includes industry information, such as business trends and industry reports, which may be useful, and you will be encouraged to apply academic theory to actual business problems, which will help you launch your profession after you graduate.

G. Be your own boss

You will not only have excellent employment options after graduation, but you will also have the fundamental ingredients to begin your own company; all you need is a business concept to get began [12]. A business management education puts you on the path to being your own boss by improving your entrepreneurial abilities and allowing you to experiment launch any business ideas you may have. You may even meet your potential business partner at universities.

H. Learn about multiple disciplines

If you're not 100% certain on what you want your future career to be, or you just want to have a broad knowledge, then a business management degree is an excellent choice. You will learn an overview of the main business functions that contribute to the success of a business and then often be able to specialize in an area of your choice [13]. These typically include:

- Human resource management
- Entrepreneurship
- Financial management
- Customer service operations

Other fields of research include consulting, supply chain management, and global business.

Three suggestions for leaders in management education

What conclusions and suggestions may be taken from these general projections regarding the future of management education? [14]. In Table 2. we give 3 suggestions for business education leaders.

Table 2 3 suggestions for business education leaders.

First, accept variety in all of its manifestations.	Management students of the future will come from a broader variety of sources and perspectives. If they are to revolutionize business, we must strive harder to be inclusive when offering meaningful and relevant experiences as well as broad material accessibility. It will be particularly vital to welcome participants from various workplace generations. We are only getting started on the infrastructure for continuous learning, which has enormous strategic potential for a wide range of management education businesses. Organizational diversity is also important. Involving various sorts of businesses in our connections will produce fresh ideas and possibilities. Allowing really inventive vendors in will help to drive innovation in our sector. It will be challenging to do so since it entails valuing businesses for their potential influence and contributions to industry transformation rather than recognizing them for success within present traditions and cultures, attitudes that are deeply ingrained in academic circles.
Second, create and capitalize on networks that links individuals, organizations, and	Connecting students with new and better employment will remain a crucial success element for business schools. However, in the future, more depth and credibility in showing abilities will be required, which means that business schools will have to work more to ensure and convey that

concepts.	particular learning goals have been fulfilled. They must also provide evidence of these achievements in the form of micro credentials and digital portfolios so that candidates can reliably indicate their talents to prospective employers. Consequently, schools must become more involved in a number of networks that are already changing the way economic conditions operate. Our industry requires more and better networks. More networks that connect academics and students to business challenges for experiential learning are needed. To address social issues, we require platforms that bring together various disciplines or parties. Better venues are needed to link student and faculty-generated company ideas to financing.
Third, serve as a leader in both the management education sector and your business.	Ours will remain a competitive business in which each supplier controls just a small portion of the overall. However, there are many moving components, and no single company can adjust or change drastically without the help of all the others. A singular emphasis on competing for students, staff, benefactors, rankings, and the like will stymie or impede system-wide reform in institutions. So, although we must contend and drive change within our business, we must also find methods to lead the business and collaborate under a single vision and purpose in order to expedite changes for the good of society. If they are prepared to embrace the responsibility, business school networks may play a particular role in supporting this form of leadership.

The Modern Accounting Competence Structure for Management

So that its Competency Structure would represent the skills management accounting professionals require both now and, in the future, a better working was formed to examine the changing practice environment and make recommendations [15].

I. Inclusion of Business Skills & Operations in the management domain

A management accountant's requirement to comprehend an organization's activities is reflected by this transformation. This facilitates the combination of information and expert judgement in a variety of commercial contexts.

J. Addition of Professional Ethics & Values competency domain.

While Ethics was included in the original Decision-Making domain, the Framework noted that Professional Ethics permeated all the other competencies in the Framework. Given the importance of this competency, the new Framework explicitly identifies it as a separate competency domain that underscores the other domains.

K. There are new competency domains for strategic management and reporting and monitoring.

Planning & Reporting and Decision Making are included in these domains, but they effectively separate fundamental accounting and finance duties (Reporting & Control) from the competences that lead the future of the business (Guiding the Future) (Strategic Management). IMA's Statement on Management Accounting, Concept of Management Accounting, provides a better understanding of management accounting. An important aspect of management accounting is the role of the accountant as a business partner. This includes assisting in the formulation and implementation of an organization's strategy, as well as developing planning and performance management systems and providing expertise in financial reporting and control to assist in this process.

L. Addition of Technologies & Analytics in the technologies area

The addition of analytics to the domain's name is not the only modification. Because of the maturation of Big Data, accounting and finance professionals now have huge volumes of information at their disposal that can be used to produce value for their companies When it comes to mining structured and unstructured information, management accountants will need to have a working grasp of data extraction technologies. For information visualization and storytelling, they'll need to be prepared to use data analysis tools that enable them collect, organized, store, and analyses this data. Due to the increasing expansion of information, management accountants will need to develop new abilities in this area.

Implications For Accounting Education

However, as mentioned earlier, the updated Section demonstrates the profession's evolving needs [16]. To what extent do academic institutions prepare their students for employment in this sector by delivering a curriculum that includes the Program's competency set [17] Educators should ask themselves these queries:

M. Does my school 's education reflect management accountants' position as business partners?

Too many schools provide a curriculum that is based on an outmoded view of the function of management accountants. Their management accounting programmed is too focused on cost accounting procedures and is primarily geared towards external financial reporting. These institutions are doing their pupils a favor by training them for a position that is quickly becoming obsolete.

The value proposition of accounting may be characterized in terms of strategy testing and enhancement, organization, and implementation. Successful managers need to understand how to assist create, assess, and implement plans that allow their businesses to prosper. By using their strategy implementation talents, management accountants will be able to be valuable business partners with the rest of the firm as a result of technological advancements. Other associated skills, like as communication and collaboration, are becoming increasingly crucial as management accountants grow in their professions.

N. Do the business strategy and course selections at my institution match the evolving education sector?

Because of the availability of new technologies, accounting and finance professionals will need to be creative and inventive in terms of new business models in order for their businesses to stay competitive. The same may be said of educational institutions.

To retain professional competence in the face of rapid technological change, management accountants will need to make a larger commitment to lifelong learning [17]. This will provide a chance for universities seeking for new ways to generate income. Because of the quickly corporate environment, management accounting professionals will need to learn new skills more quickly. This will enable schools to construct just-in-time nano learning programmers. Consider giving online short, concentrated learning experiences instead of semester- or quarter-long courses.

Conclusion

In this research we study about Difference between the general communication and business communication. We Discuss in this paper about what really is business management and we also describe the three basic construction components are (I) Management is vital in society and business, (ii) Management is all encompassing, (iii) Management is hard to do. We examine why should you analyze business management and also review about Three suggestions for leader in management education. Through this study we review About The modern accounting competence structures for management and last, we describe the Implications for accounting education.

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A COMPARATIVE ANALYSIS OF DEEP LEARNING ALGORITHMS FOR COTTON LEAF DISEASE DETECTION

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ABSTRACT

Cotton is one of the major crops in India, where 23% of cotton gets exported to other countries. The cotton yield depends on crop growth, and it gets affected by diseases. Leaf disease is one of the major issue in Cotton cultivation. The Cotton leaves are affected by the disease named Cercospora, Bacterial blight, Ascochyta blight, and Target spot. Manual disease observation by farmers may time consume, expensive and sometimes inaccurate. Therefore, it is a need of the hour to develop a model to boost the detection of cotton leaf disease. In this research various deep methods such as conventional neural network (CNN), Inception V3, VGG 16, VGG 19, RESNET 152 is implemented to identify and diagnose diseases in plants from their leaves. We have taken leaf images for this research from Kaggle data source. We have 4 categories of images diseases cotton leaf, diseased cotton plant, fresh cotton leaf, fresh cotton plant. The images are kept inside folders train, test, and validation folders. The images are further grouped into subfolders each containing separate class of images. For this research, nearly 2400 specimens (600 images in each class) were accessed for training purposes. This developed model is implemented using python version 3.7.3 and the model is equipped on the deep learning package called Keras, Tensor Flow backed, and Jupyter which are used as the developmental environment. To evaluate the performance of the models, different parameters such as batch size, dropout, and different numbers of epochs were incorporated. The implemented models achieved a disease-classification accuracy rates of 94.87%, 73.55%, 73.65%, 73.81%, 97.33% using InceptionV3, VGG 16, VGG 19, CNN and RESNET152V2 respectively with respect 10 epoch, which were greater than that of traditional handcrafted-feature-based approaches. If the number of epochs has been increased, the accuracy will also be increased. In comparison with other deep-learning models, the implemented RESNET152V2 model achieved better performance in terms of accuracy, and it required less training time.

Introduction

Plant disease has long been one of the major threats to agriculture security because it dramatically reduces the crop yield and compromises its quality. Pests and Diseases results in the destruction of crops or part of the plant resulting in decreased food production leading to food insecurity. Accurate and precise diagnosis of diseases has been a significant challenge. Traditionally, identification of plant diseases has relied on human annotation by visual inspection. Plant diseases affect the growth of their respective species; therefore, their early identification is very important. The cotton plant is vulnerable to various syndrome (biotic and abiotic constraints) attacks due to temperature fluctuation, diseases, and pests. Actually, the whole world produced nearly 576 kg per hectare of cotton crops, where only 10% of production loss occurred due to different cotton leaf diseases. The increased use of technology today has increased the efficacy and accuracy of detecting diseases in plants.

Various research has taken place under the field of machine learning for plant disease detection and diagnosis, such traditional machine learning approach being random forest, artificial neural network, support vector machine (SVM), fuzzy logic, K-means method etc. That can be improved further by using Deep learning architectures such as convolutional neural networks (CNNs), Recurrent neural networks and Recursive neural networks in terms of disease recognition rate and the accuracy of the results. In this research our aim is to compare deep learning methods such as conventional neural network (CNN), Inception V3, VGG 16, VGG 19, RESNET 152 to identify and diagnose diseases in cotton leaf. A Deep Neural Network is the base for computer vision technologies. Deep Neural Networks is similar to that of neural networks, made up of neurons with learnable weights and biases. Each neuron in network receives several inputs, takes a weighted sum over them, pass it through an activation function and responds with an output. A deep neural network (DNN) is an artificial neural network (ANN) with multiple layers between the input and output layers. There are different types of neural networks, but they always consist of the same components: neurons, synapses, weights, biases, and functions. Deep learning is a class of machine learning algorithms that uses multiple layers to progressively extract higher-level features from the raw input. Deep learning is a subset of machine learning where artificial neural networks, algorithms inspired by the human brain, learn from large amounts of data. Similarly, to how we learn from experience, the deep learning algorithm would perform a task repeatedly in multiple layers, each time tweaking it a little to improve the outcome.

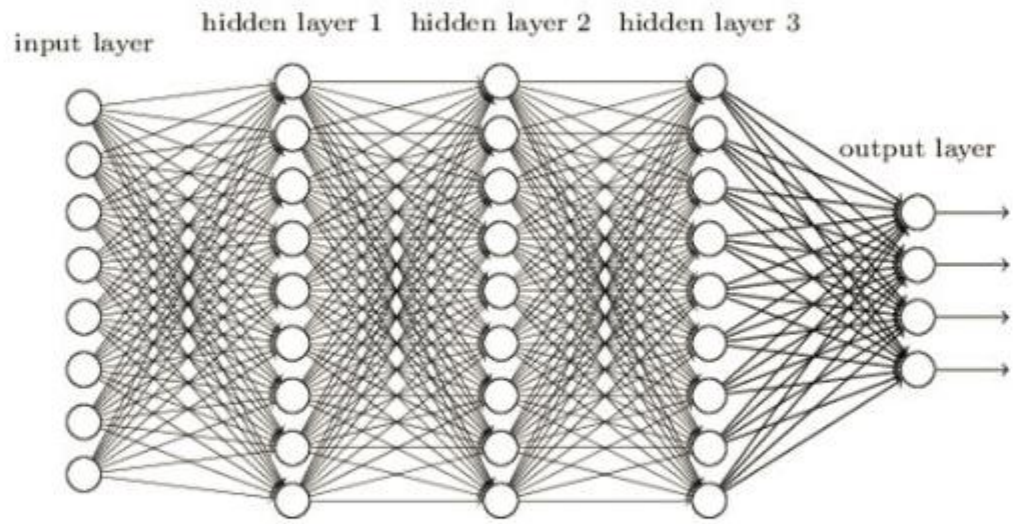

Fig 1: Deep Learning

Deep learning methods is very successful tool in computer vision tasks, such as object recognition, detection biometry and classification. They can match filters that are directly derived from the data.

The paper is organized as follows: Section 1 presents introduction deep neural networks applied to cotton diseases identification, in Section 2 are presented the related works about plant disease recognition. Section 3 explains our methodology. Section 4 contains information about the results and discussion. Section 5 provides conclusion and further works.

Literature Review

Ray M et. al. (2017) reviewed Detection of fungal diseases in plants. According to them Biosensors would become a promising and attractive alternative, but they still have to be subjected to some modifications, improvements and proper validation for on-field use.

Zhong L. et al. (2019) developed a deep learning based classification framework for remotely sensed time series. The experiment was carried out in Yolo County, California, which has a very diverse irrigated agricultural system dominated by economic crops. For the challenging task of classifying summer crops using Landsat Enhanced Vegetation Index (EVI) time series, two types of deep learning models were designed: one is based on Long Short-Term Memory (LSTM), and the other is based on one-dimensional convolutional (Conv1D) layers. Three widely-used classifiers were also tested for comparison, including a gradient boosting machine called XGBoost, Random Forest, and Support Vector Machine. Although LSTM is widely used for sequential data representation, in this study its accuracy (82.41%) and F1 score (0.67) were the lowest among all the classifiers. Among non-deep-learning classifiers, XGBoost achieved the best result with 84.17% accuracy and an F1 score of 0.69. The highest accuracy (85.54%) and F1 score (0.73) were achieved by the Conv1D-based model, which mainly consists of a stack of Conv1D layers and an inception module.

A Kamilaris (2018) et al. did a survey of 40 research efforts that employ deep learning techniques, applied to various agricultural and food production challenges. They examine the particular agricultural problems under study, the specific models and frameworks employed, the sources, nature and pre-processing of data used, and the overall performance achieved according to the metrics used at each work under study. Moreover, study comparisons of deep learning with other existing popular techniques, in respect to differences in classification or regression performance. The findings indicate that deep learning provides high accuracy, outperforming existing commonly used image processing techniques.

Yu Sun et. al. (2018) proposes a deep learning approach to automatically discover the discriminative features for fine-grained classification, which enables the end-to-end pipeline for diagnosing plant disease severity. Based on few training samples, we trained small convolutional neural networks of different depth from scratch and fine-tuned four state-of-the-art deep models: VGG16, VGG19, Inception-v3, and ResNet50. Comparison of these networks reveals that fine-tuning on pretrained deep models can significantly improve the performance on few data. The fine-tuned VGG16 model performs best, achieving an accuracy of 90.4% on the test set, demonstrating that deep learning is the new promising technology for fully automatic plant disease severity classification.

Parul Sharma et. al. (2020) performed the feasibility of training a convolutional neural network (CNN) model using segmented and annotated images instead of full images. When the same CNN model is trained using the segmented images (S-CNN) as compared to training using full images (F-CNN), model performance on independent data increases from 42.3% to 98.6%. Furthermore, quantitative analysis of self-classification confidence showed a significant improvement with 82% of test dataset showing increase in confidence.

M. Nagaraju et. al. (2020) reviewed some of the existing neural network's techniques that are used to process image data with prominence on detecting crop diseases. First, a review of data acquisition sources, deep learning models/architectures, and different image processing techniques used to process the imaging data provided. Second, the study highlighted the results acquired from the evaluation of various existing deep learning models and finally mentioned the future scope for hyperspectral data analysis.

Anupam Bapat et. al. (2020) performed study on Plant Leaf Disease Detection using Deep Learning. The dissect 54,000 images of different types of plants leaves, an enlargement of 38 square marks particularly given to them. Every classes name Is an ugly pair of acrop,and we try to estimate the yield disease pair by looking at only a picture of the plant skins. Throughout our investigation, we worked on 3 various types of representations from the whole plantsvillages Datasets. We start with the Plantsvillages dataset for What is its value in cinematography; At that point, we try different things with the block-scaled optimization of the Plant Village dataset, and eventually we run each test on a data set of leaves from the plant village, so all the extra data can be cleared.

Siddhartha Arjaria et. al. (2020) This study is performed to detect the disease of a plant through deep learning-based approach. For the disease detection and classification, a Convolution Neural Network based approach is applied. In this model, there are 3 convolution and 3 max pooling layers followed by 2 fully connected layer. The experimental results shows the efficacy of the proposed model over pre-trained model i.e. VGG16, InceptionV3 and MobileNet. The experimental results shows the efficacy of the proposed model over pre-trained model i.e. VGG16, InceptionV3 and MobileNet. The classification accuracy varies from 76% to 100% with respect to classes and average accuracy of the proposed model is 91.2% for the 9 disease and 1 healthy class.

Yalcin, H et al. (2016) propose a Convolutional Neural Network (CNN) architecture to classify the type of plants from the image sequences collected from smart agro-stations. First challenges introduced by illumination changes and deblurring are eliminated with some preprocessing steps. Following the preprocessing step, Convolutional Neural Network architecture is employed to extract the features of images. The construction of the CNN architecture and the depth of CNN are crucial points that should be emphasized since they affect the recognition capability of the architecture of neural networks. In order to evaluate the performance of the approach proposed in this paper, the results obtained through CNN model are compared with those obtained by employing SVM classifier with different kernels, as well as feature descriptors such as LBP and GIST. The performance of the approach is tested on dataset collected through a government supported project, TARBIL, for which over 1200 agro-stations are placed throughout Turkey. The experimental results on TARBIL dataset confirm that the proposed method is quite effective.

Rahnemoonfar M. et al (2017) presented a simulated deep convolutional neural network for yield estimation. Knowing the exact number of fruits, flowers, and trees helps farmers to make better decisions on cultivation practices, plant disease prevention, and the size of harvest labor force. The current practice of yield estimation based on the manual counting of fruits or flowers by workers is a very time consuming and expensive process and it is not practical for big fields.

Bargoti S. et al. (2016) presented the use of a state-of-the-art object detection framework, Faster R-CNN, in the context of fruit detection in orchards, including mangoes, almonds and apples. Ablation studies are presented to better understand the practical deployment of the detection network, including how much training data is required to capture variability in the dataset.

Xiaoyue Xie et. al. (2020) proposed a real-time detector for grape leaf diseases based on improved deep convolutional neural network. This article first expands the grape leaf disease images through digital image processing technology, constructing the grape leaf disease dataset (GLDD). Based on GLDD and the Faster R-CNN detection algorithm, a deep-learning-based Faster DR-IACNN model with higher feature extraction capability is presented for detecting grape leaf diseases by introducing the Inception-v1 module, Inception-ResNet-v2 module and SE-blocks. The experimental results show that the detection model Faster DR-IACNN achieves a precision of 81.1% mAP on GLDD, and the detection speed reaches 15.01 FPS. This research indicates that the real-time detector Faster DR-IACNN based on deep learning provides a feasible solution for the diagnosis of grape leaf diseases and provides guidance for the detection of other plant diseases.

Nilay Ganatra et al. (2020) did comprehensive review of research dedicated to applications of deep 9 learning for precision agriculture is presented along with real time applications, 10 tools and available datasets. The findings exhibit the high potential of applying deep 11 learning techniques for precision agriculture.

Zhang X. et al. (2018) proposed a model based on deep learning for leaf disease recognition. Two improved models that are used to train and test nine kinds of maize leaf images are obtained by adjusting the parameters, changing the pooling combinations, adding dropout operations and rectified linear unit functions, and reducing the number of classifiers. In addition, the number of parameters of the improved models is significantly smaller than that of the VGG and AlexNet structures. During the recognition of eight kinds of maize leaf diseases, the GoogLeNet model achieves a top-1 average identification accuracy of 98.9%, and the Cifar10 model achieves an average accuracy of 98.8%. The improved methods are possibly improved the accuracy of maize leaf disease, and reduced the convergence iterations, which can effectively improve the model training and recognition efficiency.

Dyrmann M. et al. (2016) designed and trained a deep convolutional neural network that the convolution kernel size and the order of network connection are based on the high efficiency of the filter capacity and coverage. To evaluate the classification performance of the network, experiments were conducted using a public database Caltech256 and a homemade product image database containing 15 species of garment and 5 species of shoes on a total of 20,000 colour images from shopping websites.

Tamoor K et al. (2020) presented a novel approach to fruit production prediction using deep neural networks to build a fast and reliable prediction system for agricultural production. In this article, authors have considered different types of fruit production data (apples, bananas, citrus, pears, grapes, and total fruits), analysed this data, and predicted the future production of these fruits using deep neural networks. The data are taken from the National Bureau of Statistics of Pakistan and the production output of major fruits. Authors have implemented 3 different methods to predict the data for future fruit production. The first method is Levenberg-Marquardt optimization (LM), which was 65.6% accurate; the second method is called scale conjugate gradient back propagation (SCG), which had an accuracy of 70.2%, and the third method, is Bayesian regularization back propagation (BR), which was 76.3% accurate.

Zhang Y et al. (2017) designed a 13-layer convolutional neural network (CNN). Three types of data augmentation method was used: image rotation, Gamma correction, and noise injection. We also compared max pooling with average pooling. The stochastic gradient descent with momentum was used to train the CNN with minibatch size of 128. The overall accuracy of our method is 94.94%, at least 5 percentage points higher than state-of-the-art approaches. We validated this 13-layer is the optimal structure. The GPU can achieve a 177× acceleration on training data, and a 175× acceleration on test data. We observed using data augmentation can increase the overall accuracy.

Materials and Methods

The main aim of the articles is to automatically detect the cotton disease using images which helps to assess during the farming activities. For this research we have downloaded cotton leaf dataset from Kaggle. Kaggle is a data source where 50,000 public datasets and 400,000 public notebooks available. Every day a new dataset is uploaded on Kaggle. We have 4 categories of images diseases cotton leaf, diseased cotton plant, fresh cotton leaf, fresh cotton plant. The images are kept inside folders train, test, and validation folders. The images are further grouped into subfolders each containing separate class of images. For this research, nearly 2400 specimens (600 images in each class) were accessed for training purposes. This developed model is implemented using python version 3.7.3 and the model is equipped on the deep learning package called Keras,

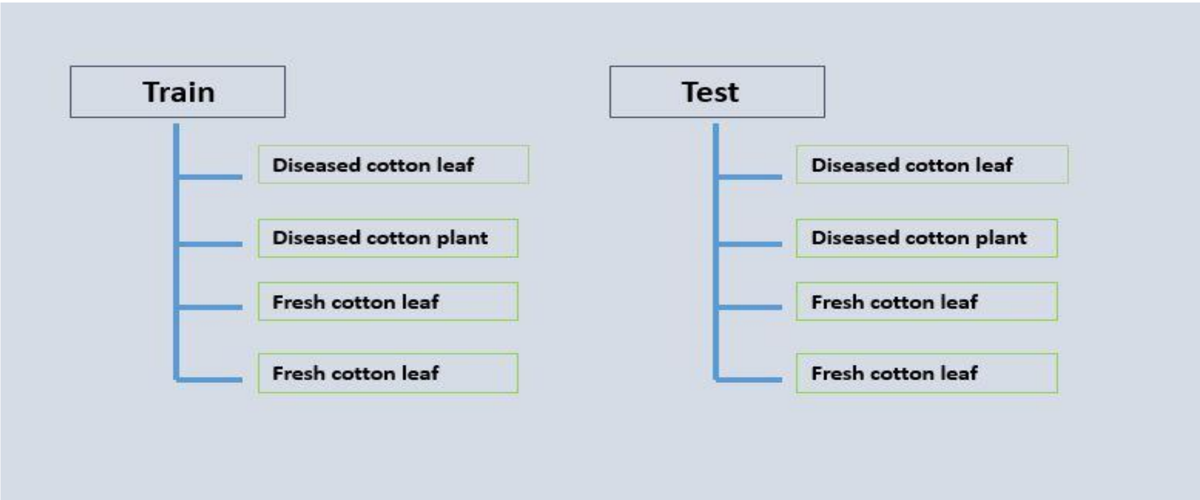

Figure 2: Types of Datasets

System Architecture

The plant disease identification system framework would utilize deep learning methods to train models, which would detect diseases in plant leaves, images will be taken from primary and secondary data sources in agriculture context. The first task in our disease identification system is image acquisition through online data source. Then, image pre-processing techniques were applied to prepare acquired images for further analysis. After this, pre-processed images were inserted into the CNN algorithm to feature extraction with neural network. Then, best-suited extractions to represent the image are extracted from the image using an image analysis technique. Based on the extracted features, the training and testing data that are used to identify are extracted. Finally, a trained knowledge base classifies a new image into its class of syndrome. We repeat above steps and apply other deep learning agorithms like inspection v3, VGG 16, VGG 19 and RESNET152V2 to identify best model for cotton leaf identification.

Step 1: Select the dataset.

Step 2: Perform feature selection using information gain and ranking

Step 3: Apply Classification algorithm CNN

Step 4: Calculate each Feature value of input layer

Step 5: Calculate bias class of each feature

Step 6: The feature map is produced, and it goes to forward pass input layer
Step 7: Calculate the convolution cores in a feature pattern
Step 8: Produce sub sample layer and feature value.
Step 9: Input deviation of the kth neuron in output layer is Back propagated.
Step 10: Finally give the selected feature and classification results.

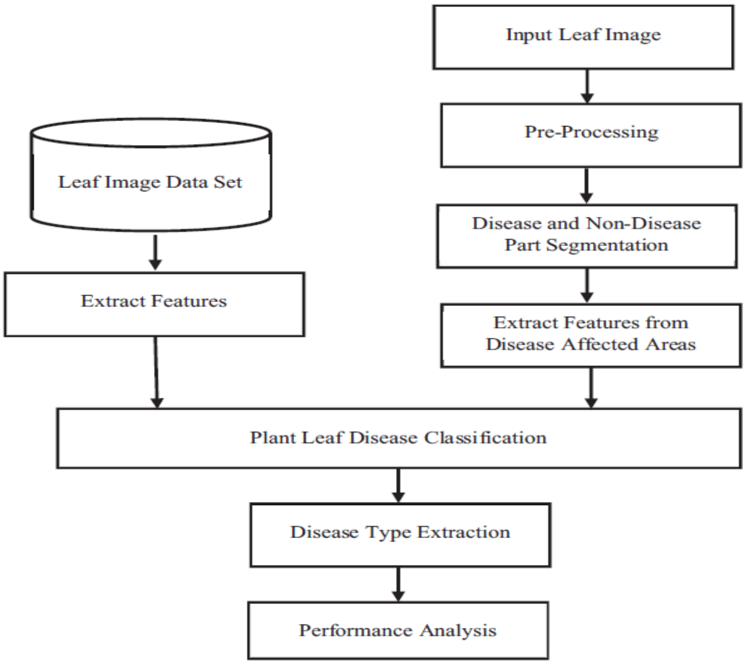

Fig 3: Block diagram of automatic disease identification system

Result and Analysis

To evaluate the performance of the models, different parameters such as batch size, dropout, and different numbers of epochs were incorporated. The implemented models achieved a disease-classification accuracy rates of 94.87%, 73.55%, 73.65%, 73.81%, 97.33% using InceptionV3, VGG 16, VGG 19, CNN and RESNET152V2 respectively with respect 10 epoch, which were greater than that of traditional handcrafted-feature-based approaches. In comparison with other deep-learning models, the implemented RESNET152V2 model achieved better performance in terms of accuracy, and it required less training time. Here by using Deep learning models, the leaf disease is identified. The disease is classified by the pigments in the leaf and distinguish it into healthy and diseased leaves. To calculate the loss, binary cross entropy function is used. If the number of epochs has been increased, the accuracy will also be increased. But it may lead to overfitting of the model and the waiting time will be increased. The trained model will give the result and the probability of finding the disease. The purpose of detecting the diseases in the leaves has been fulfilled in this paper with the help of the Convolution Neural Network.

Training and Testing Outcome for Convolutional Neural Network

CNN Model:

CNN is a type of neural network model which allows us to extract higher representations for the image content. Unlike the classical image recognition where you define the image features yourself, CNN takes the image's raw pixel data, trains the model, then extracts the features automatically for better classification. Our models are based on convolutional neural networks. A convolutional neural network is very effective in recognizing and categorizing images. Our base model which will act as a foundation and from there on we will start to make our model better and accurate by tweaking with the hyper parameters and by playing with the structure of our CNN model. A convolutional neural network with 2 layers using a filter of 3 x 3 and relu as an activation function. The Rectified Linear Unit is the most used activation function in deep learning models. The function returns 0 if it receives any negative input, but for any positive value xx it returns that value back. So it can be written as f(x)=max(0,x). The output layer uses the sigmoid function.

Figure 4: Training CNN Model

In this research we build the model using CNN. We have use 32 filters in convolutional layer, kernel size is 3 and pooling size (2,2). we have use 4 convolutional layer and relu activation function. To reduce the dimensions of the feature maps 4 pooling layer is applied. We have use 3 dropout layer 50 %, 10%, 25% rates. The Dropout layer randomly sets input units to 0 with a frequency of rate at each step during training time, which helps prevent overfitting. Inputs not set to 0 are scaled up by 1/ (1 - rate) such that the sum over all inputs is unchanged. Note that the Dropout layer only applies when training is set to True such that no values are dropped during inference. We compile the model using CNN with optimizer Adam. Adam optimization is a stochastic gradient descent method that is based on adaptive estimation of first-order and second-order moments. Finally, we trained our model till epoch 10. In terms of artificial neural networks, an epoch refers to one cycle through the full training dataset. Usually, training a neural network takes more than a few epochs. In other words, if we feed a neural network the training data for more than one epoch in different patterns, we hope for a better generalization when given a new "unseen" input (test data). In the end it has 2 fully connected layers followed by a dense layer with 4 units and a SoftMax for output. This network is a pretty large network and it has about 14,965,578 parameters (250,890 trainable and 14,714,688 non trainable parameters).

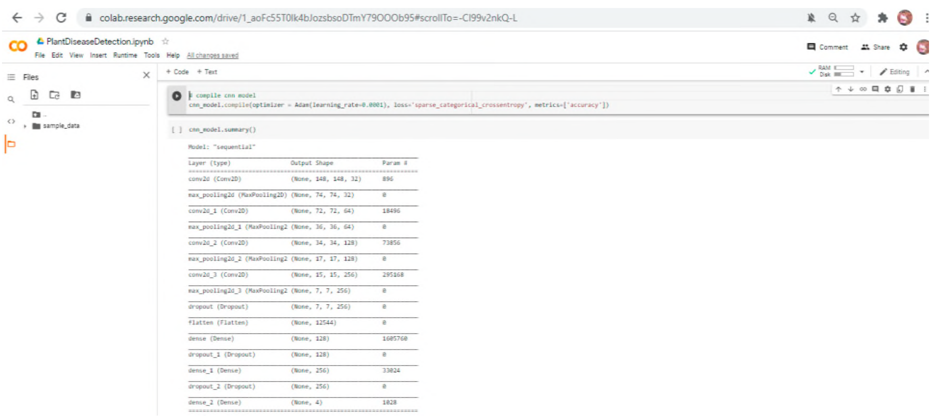
Figure 5: CNN Model Summary

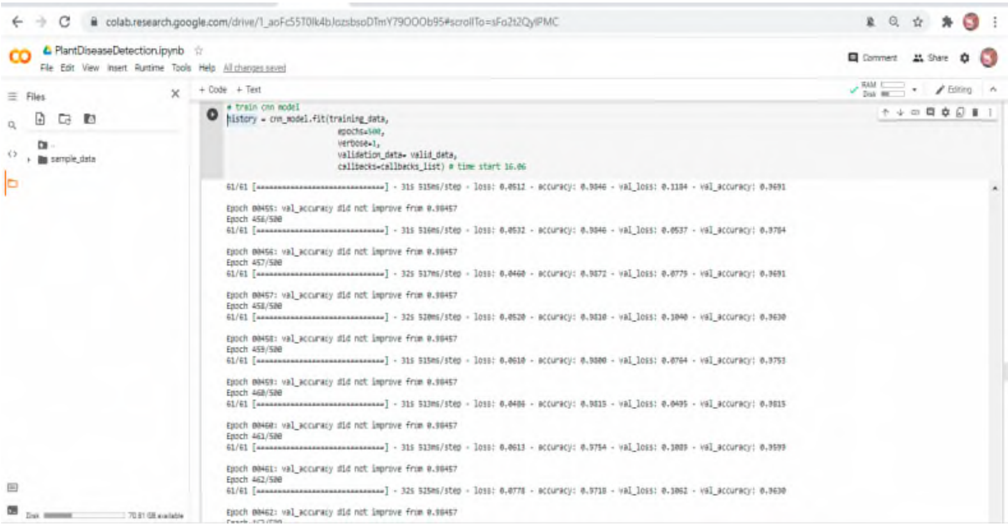

Figure 6: Accuracy of CNN Model

Accuracy and Loss are the two most well-known metrics in Deep learning. Accuracy is a method for measuring a classification model's performance. It is typically expressed as a percentage. Accuracy is the count of predictions where the predicted value is equal to the true value. It is binary (true/false) for a particular sample. Accuracy is often graphed and monitored during the training phase though the value is often associated with the overall or final model accuracy. In our CNN model initially accuracy was very low but with increase in epoch we received a high accuracy. Initially training and testing loss was very high and with increase in epoch loss started decreasing. After 10 epoch we received accuracy of 97.62%.

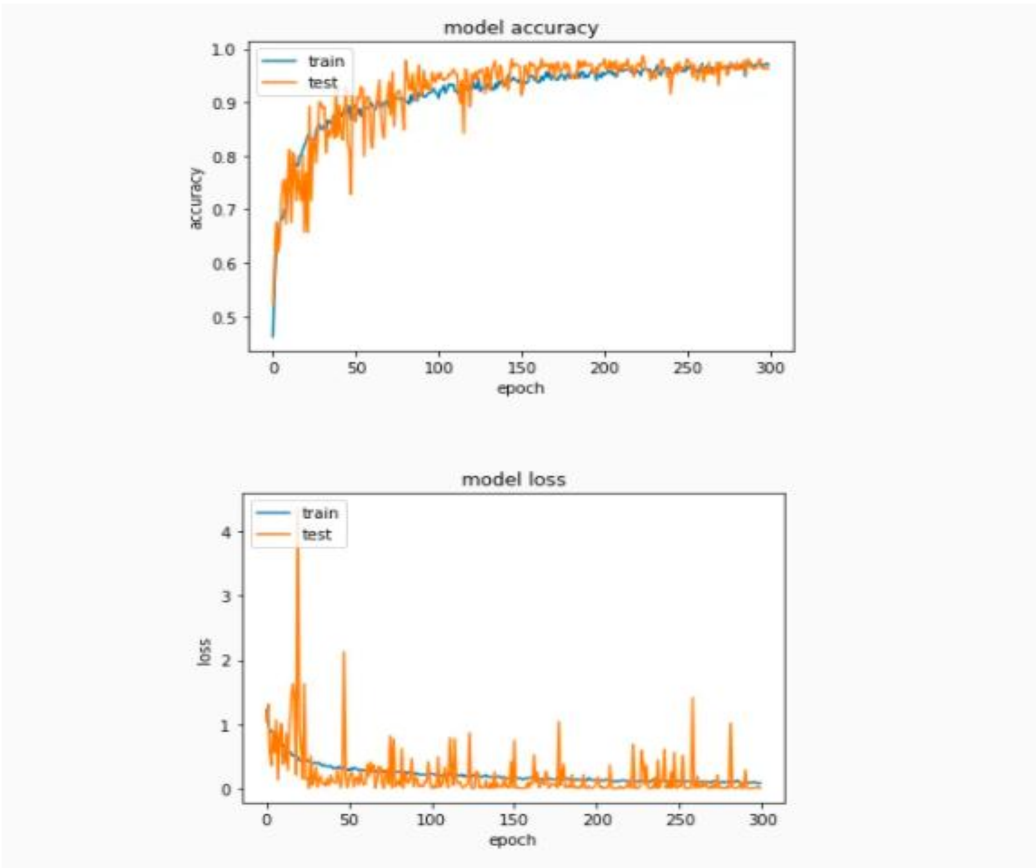

Figure 7: Accuracy and Loss of CNN Model

Epochs	Training Data Lost	Training accuracy in %	Testing Data loss	Testing accuracy in %
1	1.2668	0.4239	1.1550	0.8176
2	1.0705	0.5295	0.9566	0.9195
3	0.9644	0.5920	1.1414	0.9707
4	0.8841	0.6284	0.8928	0.9208
5	0.8573	0.6509	0.9468	0.9208
6	0.8248	0.6740	0.9649	0.9762
7	0.8101	0.6807	0.8196	1.0000
8	0.7123	0.6921	0.8876	0.9345
9	0.7111	0.7129	0.8926	0.9873
10	0.6912	0.7381	0.8997	0.9762

Table 1: Training And Testing Outcome For Cnn

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Training and Testing Outcome for Inception V3

Inception-v3 is a convolutional neural network architecture from the Inception family that makes several improvements including using Label Smoothing, Factorized 7 x 7 convolutions, and the use of an auxiliary classifer to propagate label information lower down the network (along with the use of batch normalization for layers in the sidehead). Inception v3 is a convolutional neural network **for assisting in image analysis and object detection**, and got its start as a module for Googlenet. It is the third edition of Google's Inception Convolutional Neural Network, originally introduced during the ImageNet Recognition Challenge. We have tested same data set through Inspection V3 model and we receive 100% accuracy after 10 epoch.

Epochs	Training Data Lost	Training accuracy in %	Testing Data loss	Testing accuracy in %
1	2.0140	0.7401	1.0249	0.7222
2	0.7547	0.8785	0.2171	0.9444
3	0.4645	0.9149	0.1363	0.9444
4	0.6390	0.9021	0.1251	0.9444
5	0.6016	0.9190	0.0513	0.9444
6	0.4437	0.9329	0.0368	1.0000
7	0.8518	0.9021	0.6182	0.9444
8	0.4498	0.9416	0.1105	0.9444
9	0.5562	0.9426	0.0010	1.0000
10	0.5157	0.9487	0.0010	1.0000

Table 2: Training And Testing Outcome For Inception V3

Training And Testing Outcome For Vgg 16 And Vgg 19

VGG16 is a convolution neural net (CNN) architecture which was used to win ILSVR(Imagenet) competition in 2014. It is considered to be one of the excellent vision model architecture till date. Most unique thing about VGG16 is that instead of having a large number of hyper-parameter they focused on having convolution layers of 3x3 filter with a stride 1 and always used same padding and maxpool layer of 2x2 filter of stride 2. It follows this arrangement of convolution and max pool layers consistently throughout the whole architecture. In the end it has 2 FC(fully connected layers) followed by a softmax for output. The 16 in VGG16 refers to it has 16 layers that have weights. We have tested same data set through VGG16 model and we receive 77.78% accuracy after 10 epoch.

Epochs	Training Data Lost	Training accuracy in %	Testing Data loss	Testing accuracy in %
1	1.2868	0.4936	1.1249	0.5556
2	0.9862	0.6053	1.1933	0.6111
3	0.9024	0.6412	0.7966	0.7778
4	0.8691	0.6627	0.8158	0.6667
5	0.9322	0.6361	1.0051	0.6667
6	0.8368	0.6730	0.6658	0.7778
7	0.7391	0.7176	0.6687	0.7778
8	0.7539	0.6914	0.5906	0.7778
9	0.6641	0.7381	1.0657	0.7222
10	0.9751	0.6674	0.8098	0.7778

Table 3: Training And Testing Outcome For Vgg 16 And Vgg 19

Training and Testing Outcome For Resnet152v2

Residual Network having 152 layers variant. In this post, we will cover the concept of ResNet50 which can be generalized to any other variant of ResNet. Prior to the explanation of the deep residual network, I would like to talk about simple deep networks (networks having more number of convolution, pooling and activation layers stacked one over the other). Since 2013, the Deep Learning community started to build deeper networks because they were able to achieve high accuracy values. Furthermore, deeper networks can represent more complex features, therefore the model robustness and performance can be increased. We have tested same data set through Resnet 152 V2 model and we receive 88.89% accuracy after 10 epoch.

Epochs	Training Data Lost	Training accuracy in %	Testing Data loss	Testing accuracy in %
1	1.4618	0.8093	0.0069	1.0000
2	0.4206	0.9288	0.0103	1.0000
3	0.3835	0.9416	0.3192	0.8889
4	0.3231	0.9498	0.9201	0.8889

5	0.1914	0.9662	0.3125	0.9444
6	0.2973	0.9616	0.7044	0.9444
7	0.2958	0.9657	0.0167	1.0000
8	0.3025	0.9692	1.0431	0.9444
9	0.3309	0.9682	0.5506	0.9444
10	0.2806	0.9733	0.4829	0.8889

Table 4: Training And Testing Outcome For **Resnet152v2**

The trained InceptionV3, VGG 16, VGG 19, CNN and RESNET152V2 model is tested with different cotton disease; cotton stage and cotton weed image dataset. Parameters like accuracy value, loss value, ETA (Estimated time of arrival value) are computed. Diseases like cercospora leaf spot, fusarium wilt, verticillium wilt, and cotton boll rot, bacteria blight are recognized. Cotton stages like flower stage, cotton boll, matured cotton and barnyard grass, lambs quarters weed are also recognized. One Epoch is defined as the total of all images processed one time forward and backward individually in the convolution neural network. Epoch are used once to update the weights *one*

$$epoch = \frac{numberofiteration * batchsize}{totalnumberofimagesintrainin}$$

Conclusion

In this research our aim is to compare deep learning methods such as conventional neural network (CNN), Inception V3, VGG 16, VGG 19, RESNET 152 to identify and diagnose diseases in cotton leaf. In this study deep learning-based model was implemented using Python and Keras package, and Jupyter was used as a development environment. Different experiments have been undergone in this research study to get an efficient model by customizing various parameters such as dataset color, number of epochs, augmentation, and regularization methods. To evaluate the performance of the models, different parameters such as batch size, dropout, and different numbers of epochs were incorporated. The implemented models achieved a disease-classification accuracy rates of 94.87%, 73.55%, 73.65%, 73.81%, 97.33% using InceptionV3, VGG 16, VGG 19, CNN and RESNET152V2 respectively with respect 10 epoch, which were greater than that of traditional handcrafted-feature-based approaches. If the number of epochs has been increased, the accuracy will also be increased. In comparison with other deep-learning models, the implemented RESNET152V2 model achieved better performance in terms of accuracy, and it required less training time.

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MANAGEMENT PERCEPTIONS ON QUALITY MANAGEMENT IN EDUCATIONAL INSTITUTIONS: A CASE STUDY

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ABSTRACT

This paper targets to present the perception of management members of various Education institutions regarding Quality Management in technical education. It is an attempt to understand how these perceptions vary among various aspects such as gender, age, qualification, and experience in teaching of the management of various Education institutions. Data were collected from 50 respondents of seven Education colleges of accross india and SPSS is used for analysis of their views. The findings of this study will not only add to the body of knowledge in this field, but may also serve as a catalyst for additional research.

Keywords: *Quality, Total Quality Management, Technical Education, Perception of Management Members, Education Institutes.*

I. Introduction

The progress of a nation does not depend on the existing resources but on effective deployment of these resources. We need a technically equipped human force for the effective operation of increasing economic prosperity by the application of Science and Technology to information technology, communication, other industries and also agriculture sector etc. Without effective technical education is provided to the youth of the nation, the practice of development cannot be enhanced, therefore education has a significant role to play in the development of national productivity prosper and self-sufficiency. As we all know, we need better sound, efficient, technical education system which should have best infrastructure to produce the best quality of engineers. The government, as well as private institutions, have taken the effort to establish high-quality technical institutes in India. As the quantity increases, we must also keep a close eye on the quality.

II. Objectives of The study

- To study the perception of management members towards quality management in technical education.
- To study the difference between male and female, age groups, qualification and their experience in teaching in the level of views regarding quality management in technical institutions.

III. Research Methodology

To accomplish the above objectives the following approach has been implemented. The study has been conducted for 50 management members of seven selected education institutions of various parts of India. The management members include Directors/Principals/Vice- Principals/ Deans/ HODs. Primary data collected from the sample respondents' through comprehensive questionnaire. This questionnaire covers several critical quality areas, including management and leadership, infrastructure and learning resources, teaching and learning processes, and evaluation, all of which are regarded as critical indicators of quality management in technical education.

These indicators of quality are further subdivided and were scattered to the randomly selected respondents and were asked to rank the answers on a five point Likert scale.

Secondary data collected through research papers, journals, magazines, books, government reports, AICTE approval process handbooks, and official websites etc., and the data was analyzed with SPSS.

IV. Results of Thestudy

Table -1: Perceptive score differences among sample management respondents based on their gender

Statement	Gender	N	Mean	Std. Dev	Std. Error	t-Value	p-Value
Management and Leadership	Male	36	49.97	7.792	1.299	1.396	0.177
	Female	14	53.57	8.336	2.228		
Infrastructure and Learning Resources	Male	36	35.00	14.652	2.442	2.652*	0.013
	Female	14	45.29	11.276	3.014		
Teaching Leaning Process and Research	Male	36	51.06	7.375	1.229	1.065	0.303
	Female	14	46.43	15.590	4.166		

*significant @5% level

The average perceptive score differences among sample management members based on their gender details is presented in the table-1. It is observed that mean value for female respondents is 53.57, which is higher than the male respondents i.e. 49.97 for 'management and leadership' with these differences in the mean values the calculated t-value is 1.396 which is not found significant due to the p-value is 0.177. It infers that the sample female management members are more positive towards the quality in 'management and leadership'.

The 'infrastructure and learning resources' measures that the average score of sample female respondents is 45.29 which is found higher than male (35.00). In this distribution of mean values the tested t-value is 2.652 and it is found significant at 5 percent level because the p-value is 0.013 which is less than the 0.05. Therefore, it indicates that sample female management members are more satisfied towards the 'infrastructure and learning resources'.

It is found that the sample male respondents are perceived an average score of 51.06 for 'teaching leaning process and research' which is higher than the sample female respondents i.e. of 46.43. The calculated t-value is 1.065 and it is not found significant due to the p-value is 0.303 which is greater than 0.05. This indicates that the sample male management members are positive towards the 'teaching leaning process andresearch'

Table – 2: Perceptive score difference among sample management respondents based on their qualification

Statement	Highest Qualification	N	Mean	Std. Dev	Std. Error	f-value	p-value
Management and Leadership	Degree	8	53.25	8.031	2.839	0.397	0.675
	PG	20	50.25	8.632	1.930		
	Above P.G	22	50.82	7.682	1.638		
	Total	50	50.98	8.029	1.136		
Infrastructure and Learning Resources	Degree	8	45.25	10.306	3.644	1.386	0.260
	PG	20	37.65	15.608	3.490		
	Above P.G	22	35.41	14.295	3.048		
	Total	50	37.88	14.451	2.044		
Teaching Learning Process and Research	Degree	8	46.88	14.466	5.115	0.360	0.700
	PG	20	50.40	9.185	2.054		
	Above P.G	22	50.23	10.076	2.148		
	Total	50	49.76	10.380	1.468		

The table-2 represents the perceived score difference among different sample management members based on their qualification. It is observed that for 'management and leadership' the average score of degree qualified respondents found highest than the other i.e. Above P.G and

P.G. i.e. 50.82 and 50.25 respectively. In this distribution of mean values the tested f-value is 0.397 which is not found significant because of the p-value is 0.675 which is higher than 0.05. Hence, it indicates that degree qualified respondents found more satisfied than the others for ‘management and leadership’

The average perceived score of management persons towards ‘the infrastructure and learning resources’ shows that the mean value of degree qualified respondents is 45.25 and found it is higher than P.G. (37.65) and Above P.G. (35.41) qualified respondents. While the calculated f- value 1.386 is not found significant due to the p-value is 0.260 and it is greater than 0.05. Hence, it infers that the ‘infrastructure and learning resources’ gives higher satisfaction to the degree qualified respondents.

It is found that the average score of P.G. qualified respondents is 50.40 regarding the ‘teaching Learning process and research’ in their organization, which is higher than above P.G. (50.23) and degree (46.88) qualified respondents, while the calculated f-value 0.360 is not found significant due to the p-value 0.700 is greater than 0.05. It shows that P.G. qualified respondents are more positive towards the ‘teaching Learning process and research’ in their institutes.

Table – 3: Perceptive score difference among the sample management respondents based on their age group

Statement	Age	N	Mean	Std. Dev	Std. Error	f-Value	p-value
Management and Leadership	Below 30 years	9	53.33	4.42	1.47	1.042	0.383
	30 - 40 years	14	48.50	10.95	2.93		
	40-50 years	22	52.18	7.69	1.64		
	Above 50 years	5	48.40	0.55	0.25		
	Total	50	50.98	8.03	1.14		
Infrastructure and Learning Resources	Below 30 years	9	43.22	13.76	4.59	7.295**	0.000
	30 - 40 years	14	30.00	14.77	3.95		
	40-50 years	22	44.32	11.09	2.36		
	Above 50 years	5	22.00	0.71	0.32		
	Total	50	37.88	14.45	2.04		
Teaching Learning Process and Research	Below 30 years	9	52.44	5.13	1.71	0.822	0.489
	30 - 40 years	14	51.86	8.93	2.39		
	40-50 years	22	47.23	13.34	2.84		
	Above 50 years	5	50.20	2.68	1.20		
	Total	50	49.76	10.38	1.47		

Significant @1%level

The table-3 represents the perceptive score difference among sample management members based on their age group. It is noticed that regarding the ‘management and leadership’ the average perceived score of below 30 years age group (53.33) of sample management members is found higher than the other age group respondents i.e.40-50 years (52.18), 30-40 years (48.50) and above 50 years (48.40). In this distribution of mean values the tested-value 1.042 is not found significant due to the p-value is 0.383. Hence, it infers that below 30 years age group respondents are more satisfied towards the ‘management andleadership’.

The perceptive score differences among the different age group respondents towards the ‘infrastructure and learning resources’ shows that the average score for 40-50 years age group (44.32) is significantly higher than the other age group respondents i.e. below 30 yeas (43.22), 30-40 years (30.00) and above 50 years (22.00) with these differences in the mean values the tested f-value 7.295 is found significant at one percent level due to the p-value 0.000. This indicates that the ‘infrastructure and learning resources’ gives more satisfaction to the respondents between the age group of 40-50 years.

The perceptive mean score value of below 30 years of age group respondents is 52.44 which is higher than the 30-40 years (51.86), 40-50 years (47.23) and above 50 years (50.20) for ‘Teaching Learning Process and Research’. The calculated f-value 0.822 is not found significant as the p-value 0.489 is greater than

0.05. It indicates that below 30 years age group respondents gave positive response for 'Teaching Learning Process and Research'.

V. Findings & Conclusion

It can be derived from the above study, based on the gender it is found significant at 5 percent level for 'Infrastructure and Learning Resources' and no significant for 'Management and Leadership' and 'Teaching Leaning Process and Research'. Regarding the educational qualification of the sample management members, majority of the respondents satisfied with the 'Management and Leadership' and 'Infrastructure and Learning Resources' are having degree qualification, and P.G. qualified respondents have more satisfaction with the ' Teaching Learning Process and Research'.It also found that the perception score difference among sample management members based on their age group the statements 'Management and Leadership' and 'Teaching Learning Process and Research' not found any significant difference, but 'Infrastructure and Learning Resources' foundsignificant.

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EMPLOYEE ENGAGEMENT: A STUDY OF LITERATURE

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ABSTRACT

Employee engagement, a relatively newer concept has been a topic of debate ever since it was introduced. An organisations's success depends upon the performance of their workers, making employee engagement a really vital aspect. The main purpose of this paper is to dive into employee engagement and its relevancy in the modern-day companies. The thin lined difference between job satisfaction and engagement has also been addressed. Advantages of employee engagement and the reverse phenomenon called burnout are also compared simultaneously. The framework of employee engagement is designed in such a manner that it is categorised into three different pedestals: analytical, psychological, and behavioural commitment. Relationship between employee engagement, job satisfaction, working atmosphere and burnout is showcased.

Keywords: *employee engagement, burnout, job satisfaction, trust, and integrity*.

Introduction

The most basic and direct explanation elaborating upon employee engagement states that it is an individual's analytical, psychological and physiological approach with regard to aspirational organizational outcomes (Shuck & Wolland, 2010). It can also be diversified into efficiency, intensity and commitment which employees who are expected to put their best foot forward while serving a customer and to attain the required goals set by the company exhibit. All this depends on the dedication and potential of a worker to provide sufficient effort in acquiring the set targets and climb the success ladder. People who are deeply focused on their work tend to be more aware and absorbed in the tasks assigned (Saks, 2006) and are also concerned about their work in hand while being emotionally connected to it (Kahn, 1990; Wagner & Harter, 2006). Several companies perceive employee engagement in a positive light as they consider it to be a factor encouraging healthy competition. At the same time, it is seen as a problem-solving ability which helps to deal with issues like expanding workplace execution and potency during extensive financial fall (Macey & Schneider 2008; Macey, Schneider, Barbera & Young, 2009). This feature of a worker's participation plays a huge role in understanding and estimating human resources in a workplace and is also observed to be a mixture of several human traits like job contentment, loyalty, engagement and stimulation. Engagement not only directly reflects the emotional connection and allegiance of an employee towards personal objective, but also in conquering organizational objectives. A worker with a driven and enterprising personality has a higher level of diligence and honesty and such people are highly inclined towards their work (Macey and Schneider, 2008). Institute of personnel and development (IPD) claims in their studies that (Alfes et al, 2010), commitment at workplace generally has three central essentials: Intellectual engagement- constantly thinking about the jobs and ways to improve it, Affective engagement- being constructive regarding the job and social engagement- always up for any kind of responsibility and also to discuss it with co-workers for better results.

Inclusion and Exclusion Criteria

All the research which is a part of the present paper specifically incorporates the inclusion criteria. Firstly, the article that shows a connection between a minimum of two variables, out of employee engagement, burnout, satisfaction at workplace and levels of engagement, were all included in this study. Moreover, there are a wide range of theories and phenomenon understood in the light of the term employee engagement. Therefore, articles concerned with levels of engagement along with work related variables like job satisfaction, burnout in this study were published between 2000 and 2019. EE has mostly been in discussion since the last decade of the twentieth century and this has led to building more structures and theories which at times ended up intersecting each other and forming complicated outcomes. Nevertheless, as research onthis topic increased over time, more clarity on EE and its elements was observed leading to positive results. However, EE remains a recently developed articles dated between the years 2000 and 2019 were included.

Data Extraction

After predatory scanning many available articles were discovered. Nevertheless, some of them were repetitive in nature and led to replication. After the removal of the duplicate articles we were left with merely 50 articles. Following this the abstract and headings of this papers were analyzed yet again to ensure eligibility in terms of the inclusion and exclusion criteria. During this phase, many studies which did not show an association between at least two of these variables- EE, Job satisfaction, burnout, levels of engagement at work were excluded. The articles which exactly matched the level of the inclusion criteria were picked. After that, these
studies were thoroughly examined & scanned to finalize our concluding set of studies. The identified studies explore the relationship between EE, Burnout, job satisfaction and elements related to engagement at organisation.

Employee Engagement and Job Satisfaction

Employee engagement is often related with many other contemporary terms like organizational commitment, organizational community action, participation in work and moving along, manners or etiquette and occupation contentment. But it has been noted that engagement is co-related to but different from all the other inventions within the area of workplace actions (Saks, 2006). Engagement is attachmenton the lines of job involvement (May, Gilson and Harter, 2004; Brown, 1996). A coherent or optimistic state of recognition is identified as job involvement (Kanungo, 1982). The main distinctive feature between these two concepts is that engagement renders more around individualistic personal performance of the worker (May et al, 2004). Further, primary concern in participation at the organisation based on logical elements whereas engagement as per most definitions, is an amalgamation of feelings and behavioural traits presented by the employee. Job attitude literature puts toward an analysis of the two differentiating the attitudes involved (Roznowski and Hulin, 1992).

It is of prime importance that organizations start focusing on the possible measures to ensure everlasting dedication from the workers. To motivate the workforce towards the company targets, there is a need of constructing some ideas to control, persuade and capture them. Employee's dedication and loyalty are of extreme importance for tailoring an adaptable plan of action that would have employee engagement as an integral professional result (Melcrum, 2005). The valued sense of feeling and involvement are the top most factors that contribute in the decision making ability of a worker, his/her liberty to present their opinions, chances to enhance their work and companies solicitude about health and wellbeing. This emotion is dependent on several criteria of working life, for instance, preparatory phase, expansion of profession, higher authorities, appreciation for execution, transmission and family affability (Robinson et al,2004). Necessary elements of experiencing desired and engaged and the power of each depends on the workplace. There are extremely crucial drivers of employee engagement (Gallup, Towers Perrin, Blessing White, The Corporate Council, 2006).

Trust with Integrity

Trust and integrity- It becomes highly vital for the managers to have a constructive verbal connect and to abide by their words. Job workers should be self-driven and prepared to face all the presented challenges. Line of sight between company performance and individual performance – an individual must know their part in company's performance. Career growth opportunities- one should have a definite and huge scope for evolving and enlarging as far as the work is concerned. Pride in the company- All the employees should have a sense of pride towards their organization. Relationship amongst co-workers- the bond shared between the peers drastically improves the degree of worker's commitment and the growth - managing authorities should move towards taking significant action for the construction of intellect, behaviour and skill development. Relationship shared with the employer- a manager consciously has to be friendly in order to have a comfort level with his workers.

Advantages of Employee Engagement

The concept of engagement also lays emphasis on an important link between the consequences for the worker and the workplace (Kahn, 1990). Its focus is to provide a clear picture of the advantages of engagement at both the ends (Barrick et al, 2015; Rich et al, 2010; Shuck, 2011). Employees involved in their jobs have a clear knowledge of its importance to the organization along with knowing its personal worth. At an individual level, workers know that engagement automatically results in efficient quality of work (Kahn, 1992) and also alleviates collapses (Maslach et al, 2001). Furthermore, engagement encourages employees to feel challenged and take their tasks seriously to improve their own skill set (Leiter and Bakker, 2010) and to generate positive feelings, (Yalabik, Popaitoon, Chowne and Rayton, 2013) frame of mind, and conduct that are advantageous to the workers (Bakker and Schanfeli, 2008). In case of nonprofit employees, the perks of engagement have an effect on the social cause, etiquettes and internal satisfaction, consequently amplifying their view point of job contentment. As regards to the advantage to the company, it can vary from immediate effect to intervening outcomes of the set up. Studies have given equal ground to all the consequences separately, including the influence on revenue, consumer, fulfilment, capacity and employee sales (Bakker and Schaufeli, 2008; Harter et al, 2002). Organization transformation can also be realized through employee engagement (Reissener and Pagan, 2013). The moderate results of engagement are anticipated by the effect of worker conduct and approach on sales, workforce mis happenings and community’s conduct (Rich et al, 2010; Shuck and Wollard, 2010). The formation of rational, spiritual and social intensity reveals that workers are devoted to the performance results of the company.

Employee Engagement and Burnout

A reverse phenomenon to burnout is considered to be employee engagement, a positive state carrying high levels of energy and satisfaction (Maslach et al, 2001). Burnout literature was primarily dealing with two major highlighted features (a) Burnout was associated with the professionals and their jobs where in workers were in charge of communicating with people in difficult circumstances (i.e. healthcare, consumer relations) and (b) it was believed to be opposite to the concept of job engagement (Maslach et al, 2001). As a result of the attention given by the psychology department to identifying ailments such as depression or other personality/ psychological disorders (Seligman, 2002), theorists in the burnout literature started contemplating the function of well- being to be of extreme importance in engagement and as a tactic for reforming human stability. Burnout was seen as a corrosion of engagement (Maslach et al, 2001) something which was once known for its importance as sensible and inspiring but was significantly converted into annoying, incomprehensible and unsatisfactory (Maslach et al, 2001). Correspondingly, Job engagement was categorised as the conflicting idea of three burnout aspects: exhaustion, cynicism and inadequacy.

Most recent dimension associated to job engagement is meaningful work. Two types of work have been described, one which allows the promotion of self-accomplishment and the other that deals with voicing of creativity, visualization and fabrication (Maslow, 1965; Alderfer, 1972; Mc Gregor, 1960). Furthermore, (Locke, 1976) it has been stated that job contentment is a consequence of pursuing what is of personal interest. Meaningfulness of work is an element of job characteristics model (Hackman and Oldham, 1975). A research suggests that meaning is highly necessary to an individual (King and Napa, 1998; Kotter- Gruhn, Wiest Zurek and Scheibe, 2009; Sheldon, Elliot, Kim and Kasser, 2001). People are more interested in work that personally appeals to them. Secondly, meaning has been linked to well-being (Brunstein, Schultheiss, Grassmann, 1998; Diener, Suh, Lucas and Smith, 1999; Keyes, 2007; Mcknight and Kashdan, 2009). Nonetheless, the essence of work keeps fluctuating in ways that are less relevant (NORA, 2002). Meaningful work has an immediate effect for HRD. For instance, Broadening schemes are straightforward in a meaningful work component (Fairlie, 2010). Meaningful work also has an influence on engagement. Kahn, 1990 expresses that workers are completely engaged in their respective jobs when their selfvalue is displayed in the organization. Generally, what is recognised as meaningful in several employees's lives is frequently linked to selfhood and individuality (Debats, Drost and Hansen, 1995).

Levels of Engagement

A unique framework offered by Kahn specified the fundamental contexture of a worker's readiness to include a recorded drawback of few involvement concepts (Cole et al, 2011; Rich et al, 2010). Engagement arises at three different platforms (a) analytical commitment (b) psychological commitment (c) behavioural commitment (Rich et al, 2010; Shuck et al, 2011). Kahn (1990) addressed, phases of analytical commitment occurs from a worker's approval if they consider their role sensible, sheltered (bodily, psychologically and sentimentally), and if they are provided with enough sources to accomplish their targets. This exposition is used to judge the overall atmosphere and the intent to engage and get involved. Emotional explication indicates the degree of involvement and engagement of employees towards their job (Brown and Leigh, 1996) resembling the expansion of resources as stated by Fredrickson (1998, 2001). Those with the notion that their work is valuable and hold importance cherish it while also engaging in it (Kahn, 2010). Any employee who comes across a negative environment most commonly tends to generate a low feeling which ultimately culminates into restricting of assets leading to a miserable condition of isolation and draining up (Fredrickson and Joinee, 2002; Maslach et al , 2001). Coherent involvement is all about how a worker assess their organization's ambience, along with the duties they are appointed. When an employee evaluates their surrounding working conditions, they judge the level of positive or negative prospects which directly create an impact on their behavioural pattern (Nimon, Zigarmi, Houson, Witt and Diehl, 2011). Subjectively involved workers will have positive answers for questions such as "The job I perform adds value to the workplace", "I am in a protected climate and nobody will mock me "and "I am provided with all required resources to perform my work at the needed level".

Psychological commitment includes increasing the emotional quotient in a worker which they have towards their role. When workers are engaged in their jobs, they do it with all their conviction by attaching their individualistic characteristics such as dignity, faith and comprehension. Using such feelings might appear unimportant for a moment, but it then results in workers who are confident and have total assurance of their work atmosphere. The positive characteristics of faith and pride is a result of estimation about the climate made in the prior phase. Suitably, these positive sentiments gives a boost to an employee's existing assets and improves captions and innovative thinking procedure frequently observed at instances of engagement. The emotional engagement procedure values produces reliance in a worker and clutches his prestige while generating an undeviating external spirit regarding labour contention (Rich et al, 2010). Workers who are believed to be emotionally connected to their task have such positive approach regarding their jobs, such as "I experience a powerful sight of kinship and recognise with my workplace" and "I am happy to be a part of it".

Behavioural engagement is the most apparent form of the employee engagement operation. It is something that is easily seen at a public level. Described as the corporal demonstration of the cognitive and emotional engagement merger, behavioural engagement can be discussed as extended amount of attempts or efforts with regard to a company's purpose (Macy and Schneider, 2008; Shuck and Wolland, 2010). Putting forward in a different manner, behavioural engagement is the expansion of a worker's accessible measures exhibited openly. From this perspective, workers in connection to engagement is associated with developing discrete efforts-engagement takes place gradually and is witnessed exclusively through each employee's perspective. Workers who are behaviourally engaged answer constructively to questions such as "when I am devoted to my job, I do advance my efforts beyond my limits" and "I function vigorously to assist my company be victorious".

Employee Engagement and Working Atmosphere

In a nutshell, employee engagement is practicably expounded in terms of psychological states (cognitive, emotional and behavioural) at length constituting an agenda to act that encloses inspirational like features distinct from phenomena like work contentment and participation (Rich et al, 2010; Shuck, Ghosh, Zigarmi and Nimon, 2013) and antipodes (burnout; Schanfeli et al, 2006). Studies conducted mainly explain that psychological organizational circumstances have a strong connect and influence on the maturing of ultimate social expression of employee engagement (Shuck et al, 2011).The same research is also of the opinion that employee engagement and working atmosphere are inter related to each other, this hence is established with the support of an affirmation (Schaufeli et al, 2008). Even so, irrespective of the fact that a remarkable interconnection between all the phenomena have been given (workplace climate, employee engagement and well- being) this factual relationship is yet to be recorded. Furthermore, contemporary exploration on employee engagement has also revealed an actual linkage amongst participation and some additional chores and concepts. (Christian et al, 2011). For instance, Rich et al (2010) represented that engagement intervened the association between value consonance and performance allied consequences (eg. Job performance and organizational citizenship behaviour). Although, something that has still not been recorded is employee engagement's and its relation between psychological company's ambience.

Conclusion

The onset of internationalisation and the fusion of modern automations are a great reason for developing a compound area of communal, financial and ministerial conversion on a global level, which create an evident reaction on work, employment merchandise and companies. The powerful workplace nowadays is customarily distinguished with expanded rate of work, potency and growing utilization of statistics managed communication technologies (Ulrich,2000). The level at which all such rapid transformation are taking place have an intense outcome on health and regulation of not only workplaces but also on employees. Such tasks are never restricted to a globalised scenario only (Sparks, Faragher and Cooper, 2001). Considering the uncertain situations, various administration applications like lean manufacturing, hi technology manufacturing, telecommuting and virtual education are experimented to improve the outlook of business set ups and financial standing. However, these norms have neglected and completely sidelined its after effect on individuals involved in the jobs and continue to prioritise professional results. This becomes more of a challenging situation as the numerical account of today's labour force has become very disparate and intellect based. Workers in the intelligence thrift are quite divergent from the employees and express a different attitude altogether. They are driven and wish to balance their professional and personal lives while being aware of their priorities (Benson and Brown, 2007). Considering the ongoing competitive environment and practices it has become an extreme mandate for the higher authorities to engage their knowledge workforce through activities that play a key role in polishing their involvement and welfare (Narang and Singh, 2012). Dealing with fluctuating economic instability and untamed contest, optimizing individual performance is necessary (Brown, 2000). Literature is of the view that Human resource management (HRM) operations are advantageous for the workers, the basic concept is that HRM executions inspires workforce to grow and give better results along with increased degree of engagement. This ultimately will lead to enhanced monetary production and profitable benefit for organizations (Mathew, 2015; Gould-Williams and Mohamed, 2010; Snape and Redman, 2010).

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THE MEDIATING ROLE OF TOURISM SERVICES: A PLS-SEM STUDY ON SATISFACTION AND BEHAVIOURAL INTENTION

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ABSTRACT

The remarkable growth in tourism sector and its contribution in national growth and development has drawn attention towards understanding tourism behavior. Existing tourism literature lacks an empirical examination of relationship between constructs like motivation, satisfaction with tourism services, overall satisfaction with destination and future behavioural intentions. The present study fills this gap. This study uses Smart PLS–SEM to assess the influence of travel motivation and the mediating role of tourism services on destination satisfaction and behavioural intentions. The study analyses 477 valid surveys out of 1193 responses collected at one of India's largest airport in terms of passenger handling- Delhi airport. Non-probabilistic sampling has been used. The study illustrates that an effective assessment of traveler's needs and desire and subsequent satisfaction with tourism services can culminate into destination satisfaction and can generate positive recommendations and revisits. The results of the study can help tour companies to sustain competitiveness, more so in an increasingly saturated market place.

Keywords: *Travel Motivation, Destination Satisfaction, Behavioural Intention, India, PLS-SEM, Tourism Services*

1. Introduction

Growing at a remarkable rate of 6 percent in 2018 (UNWTO, 2019), travel and tourism industry has evolved as one of the largest industries across the globe (WTTC, 2019). With a significant multiplier effect on national income, employment, and government revenues (Yang, Fik & Altschuler, 2018), policymakers, practitioners, and researchers are working towards improving and sustaining industry competitiveness. Marketing literature stresses consumer behavior as being one of the main foci driving competitiveness (Szmigin & Piacentini, 2018) and defines it as "concerned with all activities directly involved in obtaining, consuming and disposing of products and services, including the decision processes that precede and follow these actions" (Engel, Blackwell &Miniard, 1995). In tourism studies, consumer behavior expressed as*travel behavior* or *tourist behavior* encompasses three stages of tourist consumption process- pre-visit, during-visit, and post-visit (Williams & Buswell, 2003). Pre-visit includes travel motivation, making pre-trip arrangements, and gathering trip-related information. Travel experience, satisfaction with tourism services, and overall satisfaction with destination form subsequent trip evaluation, generating future behavioral intentions.

While most of the studies in extant literature have reviewed travel motivation in terms of push and pull factors (Thakur, 2016) some have focused on monetary and time-related travel costs and psychological stress (MdKhairi et al., 2019), and few have given importance to accomplishments, personal benefits and seeking distinctive experiences from the trip (Vada et al., 2019).The present study lists 35 travel motives and seeks tourist response on their motivation to travel. This would help in developing an improved understanding of the varied components of travel motivations. Although previous studies have paid attention to the constructs- travel motivation and satisfaction; these constructs have been examined independently. Researchers (Baker & Crompton, 2000) have focused on interrelationships between quality, satisfaction, and behavioral intentions. While few recent studies (El-Adly, 2019) have incorporated perceived value, there are studies (De Vos, 2019) that have found an empirical association between perceived value and satisfaction. Researchers (Leri & Theodoridis, 2019) have also found that perceived value, quality, and satisfaction affect future behavioral intentions. To the best of our knowledge, the conceptual clarification and linkages between constructs like motivation, satisfaction with tourism services, overall satisfaction with the destination, and future behavioral intentions have been superficially discussed and an empirical examination of the relationship between these constructs is lacking in the literature.

Based on the above discussion, the current study aims to develop an integrated model of the tourist consumption process in a developing country, India. With the growing importance of the tourism sector and its contribution to national growth and development attributable to several factors including higher disposable income, more leisure time, and improved awareness, there is a growing need to understand tourism behavior and the associated value creation process in the tourist industry. Since tourism is a competitive and perishable product and there is a continuous shift in travelers' behavior owing to changes in their preferences and values, it is of paramount importance for tour companies to understand the factors affecting motivation to travel. A proper synthesis of tourist motivation to travel would affect marketing decisions like product development, positioning, segmentation, and advertising (Bieger & Laesser, 2002). Similarly, tour satisfaction can be influenced by bringing about changes in strategic decisions. Further, only a few tour managers have precise information on whether a tourist is revisiting a particular destination and/or involved in the same tour activity repeatedly. Such information can reveal the preferences of tourists (Hill & Alexander, 2017). Apart from affecting a tour company's profitability, destination loyalty in terms of repeat visits indicates the tour's current position in the destination life cycle and paves way for marketing ramifications accordingly. By using Partial least squares structural equation modeling (PLS-SEM), this paper explores the interrelationships between constructs employed in the study. At present, the available published tourism literature lacks the empirical examination of these constructs. Through this study, tour managers will be better able to understand the relationship between future intentions and their determinants and therefore they can work towards enhancing tour attractiveness and can allocate the company's resources accordingly. The study, therefore, defines the following objectives:

- Understanding the impact of travel motivation on satisfaction with tourism services, destination satisfaction, and behavioral intention.
- Understanding the relationship of travel motivation with destination satisfaction and behavioral intention with satisfaction with tourism services as a mediating variable.

The study will follow the following structure. In section 2, the relevant literature on travel motivation, satisfaction with tourism services, overall satisfaction with the destination, and behavioral intentions will be reviewed and discussed. Section 3 presents the conceptual framework and hypotheses development. The methodology employed in the study has been described in Section 4. Section 5 discusses the results. Implications of the study and directions for future research have been discussed in Section 6.

2. Theoretical Background

2.1.Travel Motivation

Tourism literature (Binbasioglu, 2019)has given considerable importance to travel motivation and has viewed it from the psychological and/or biological needs of an individual (Kerr and Houge Mackenzie, 2020). While understanding the travel phenomenon, previous studies have generated multiple perspectives to the fundamental question as to '*why does a person travel*' and have emphasized that motivation to travel depends upon encouragement forces leading people to look for travel destination (Novais et al., 2018) and attraction forces creating a liking for destination-related attribute (Akgün et al., 2020). Mclntosh and Goeldner (1990) have differentiated between physiological, cultural, interpersonal, and status motivators of tourism. A further review of past studies on travel motivation relate it to different tourist settings- excitement, leisure and family togetherness (Wu et al., 2019); relaxation and socialization in known group/strangers (Wong et al., 2018); visiting beaches/religious/ historical places and exploring culture (Christou et al., 2019) and exploring a destination independently (Bianchi, 2016).

2.2. Satisfaction with tourism services

Tourism literature (Suhartanto et al., 2020) postulates satisfaction from tourism services as a positive feeling experienced and the pleasure derived by tourists through their involvement in tours and their related activities. This would include satisfaction from services provided pre-trip, en-route, destination, and return trip (Neal et al., 1999). Pre-trip activities are largely drawn from travel motivation, making pre-trip arrangements, and gathering trip-related information. The support extended by tour operators and service providers formulates the en-route satisfaction. Experience from other tourism services like accommodation, entertainment, restaurants, etc. influences the level of satisfaction from destination services. The interactions with travel carriers and personnel during return travel from destination to home formulates the return satisfaction from tourism services (Neal et al., 1999). Since customer satisfaction is the subjective evaluation of a product's perceived performance with prior expectations (Kotler & Keller, 2016), consumers tend to be satisfied if actual performance exceeds expectations (Agyeiwaah et al., 2016; Oliver, 1980).

2.3.Overall satisfaction with the destination

Researchers (Ali et al.,2016) have described overall satisfaction as an outcome of a company's overall servicesderived from individual attributes (Truong et al., 2018). McIntyre (1993) defines destination as "the location of a cluster of attractions and related tourist facilities and services which a tourist or tour group selects to visit or which providers choose to promote". Since destinations embrace a bundle of goods and services (Durasevic, 2015), individual consumer's experience is a derived function of overall experiences from consumption (Oliver, 1997). Further, tourism literature investigates destination attributes in the context of "attractions, accessibility, amenities, available packages, activities, and ancillary services" (Buhalis,2000). Consisting of multiple individual attributes, overall satisfaction with the destination is, therefore, a multidimensional construct and is drawn from the conformity between aspirations and the perceived reality of experiences (Agyeiwaah et al., 2019).

2.4. Behavioral Intentions

Reflecting consumer's purchase orientation, behavioral intention indicates consumer's predictable buying behavior in the short term (Altunel&Koçak, 2017).Previous studies (Mansour &Ariffin, 2017) have used behavioral intention as a predictor of retention and defection of consumers. Intention to revisit and intention to recommend are the most frequently used indicators of studying behavioral intention. These are important performance measures not just in the marketing literature (Chiu et al., 2014) but also in tourism literature (Cossío-Silva et al., 2019). Tourism literature has identified five motives for repeat visits- satisfaction with a particular destination, developed an emotional liking, meeting the same kind of people, exploring it further, reduction in risks, and taking more people along at the same destination (Han & Hyun, 2018). Further, due to the intangible nature of tour products/services, consumers rely more on information and suggestions of others through WOM communication (Jaapar et al., 2017). Hence it is assumed to be one of the most credible and high-impact generating channels of communication (Papadimitriou et al., 2018).

1. Conceptual Framework and Hypotheses development

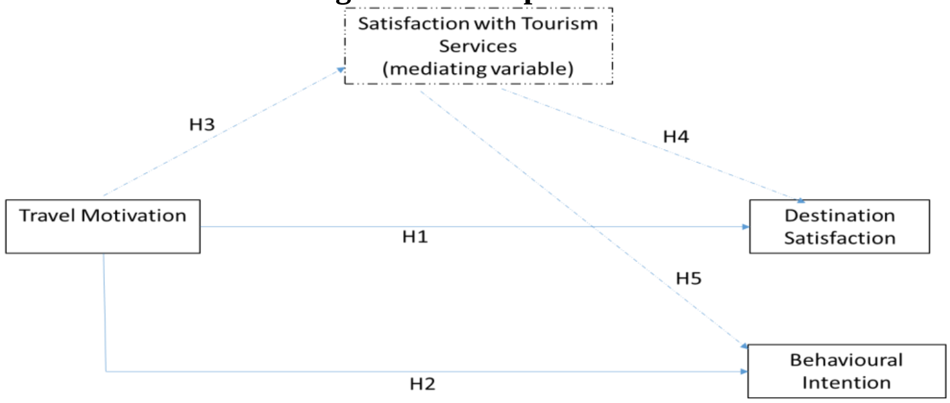
In this section, the hypothesized relation between constructs employed in the study has been explained. Figure 1 depicts the conceptual reflective formative model (Ringle et al., 2012) used in the current study. In a reflective measurement model, since it is assumed that the construct leads to the measurement model (Hair et al., 2016),

The arrow is directed from the construct to the indicator (motivation, satisfaction with services, and their indicators).

On the other hand, based on the assumption that indicator variable leads to construct measurement, the arrow is directed from indicator variables to construct in a formative measurement model.

Since the use of the reflective measurement model has become a standard practice among researchers to examine the relationship between exogenous (travel motivation and satisfaction with tourism services) and endogenous (destination satisfaction and behavioral intention) constructs, the present study employs both the measurement models to create a second higher model.

Figure 1. Conceptual model



Source: Authors'.

Note: Weighted arrows show direct effects; dotted arrows show mediating effect of Satisfaction with Tourism Services.

3.1. Travel Motivation and Destination Satisfaction

Travel motivation comprising of behavioral beliefs and subjective norms (Japutra et al., 2019) influence the level of destination satisfaction (Yoon &Uysal, 2005). Since satisfaction is the extent of fulfillment of consumers' expectations (Chiu et al., 2020) and thereby provides a positive assessment of travel experience; motivation to travel has been recognized as a factor in satisfaction formation (Suhartanto et al., 2020). Thus satisfaction is driven by the need and motivation to purchase the tour product. Olya et al. (2019) have demonstrated that travel motivation is an antecedent of destination satisfaction. Hence, we posit:

H1. Travel motivation is significantly and positively related to destination satisfaction.

3.2. Travel Motivation and Behavioral Intentions

Travel motivation is believed to initiate tourists' decision-making process and leads to the formulation of post-purchase behavior in terms of intention to revisit and intention to recommend (Han & Hyun, 2018). While few studies indicate that motivation to travel stimulates behavioral intention (Caber &Albayrak, 2016), and there is a positive relationship between travel motivation and intention to revisit, some studies have shown the absence of a relationship between these two (Nowacki,2009).Thus there is a further need to examine the relationship between travel motivation and behavioral intention. Further, consumer retention and revenue generation are of paramount importance to tour companies (Mansour &Ariffin, 2017), depending on consumers' future buying behavior and word of mouth communication. Hence we posit:

H2. Travel motivation is significantly and positively related to behavioral intentions.

3.3. Travel motivation and Satisfaction with Tourism Services

For conceptualizing the determinants of consumer satisfaction, satisfaction researchers have evaluated the various attributes of a product/ service (Hong et al., 2020). Satisfaction with tourism services comprises of travelers' experience across the four different facets of travel, namely pre-trip, en route, destination, and return services (Neal et al., 1999). Though, motivation to travel is one of the factors that transpires all aspects of tourism services; its impact is larger on the satisfaction from pre-trip services (Neal et al., 2007). Tourism literature has inadequately covered the relationship between travel motivation and satisfaction with tourism services. Hence we posit:

H3. Travel motivation is significantly and positively related to satisfaction with tourism services.

3.4. Satisfaction with Tourism Services, Travel motivation, and Destination Satisfaction

A potential linkage exists between travel motivation and destination satisfaction (Su et al., 2020). An evaluation of tourist satisfaction presents a reflection of travel motivation and the need to travel with the assessment of tourism services. Further, destination satisfaction is an outcome of tourist evaluation of destination attributes and the subsequent satisfaction drawn from tourism services (Neal et al., 1999).Thus there seems to exist a relationship between travel motivation, satisfaction with tourism services, and destination satisfaction. Prior research has failed to test the mediating effect of satisfaction with tourism services on travel motivation and destination satisfaction. Hence we posit:

H4. Satisfaction with tourism services mediates the relationship between travel motivation and destination satisfaction.

3.5. Satisfaction with Tourism Services, Travel motivation and Behavioural Intention

Previous studies have explored the relationship between travel motivation and behavioral intention (Pestana et al., 2020). While determining the factors influencing consumer intentions, researchers have found travel motivation as a key determinant of consumer intentions (Hosany et al., 2020). Further, positive experiences during different aspects of tourism services- pre, en-route, destination, and return services are viewed by potential tourists as the most reliable source of information and thus they generate revisits and recommend intentions (Han et al., 2020). Although travel motivation and behavioral intention have been widely studied in tourism literature, a further investigation of satisfaction with tourism services mediating the relationship between travel motivation and behavioral intention will provide a comprehensive understanding. Thus we posit:

H5. Satisfaction with tourist services mediates the relationship between travel motivation and behavioral intention.

Methodology

4.1 Blue Print for collecting data

The target population of the study was travelers of 18 years and above age. Delhi airport was selected as a sample area as it is India's largest airport, handling the maximum number of passengers. Non-probabilistic sampling was used. Questionnaires were distributed personally to people who were at the airport, waiting for departure, and were traveling with family/friends for vacation. People were approached purely based on our judgment. While few people turned out the request for filling up or sharing their responses, there was a positive response from few travelers. Respondents were informed about the purpose of a survey before getting it filled. Sixteen such airport visits led to the generation of 1193 responses out of which 477 (approximately 40%) were valid surveys and were taken up for analysis. Researchers attempted to have demographic diversity in data collection in terms of gender, income, family size, and age. The sample consists of 38 percent females and 61 percent males with 71 percent of the respondents below the age of 35 years. Responses were collected from people aged 18 and above. This was done as by and large age indicates the level of maturity and decision-making capability of an individual. More than half of the respondents belonged to a family size of 4-6 members. Further,74.4 percent had planned the trip by themselves and remaining through the tour operator. Around 24.7 percent of respondents reported a monthly household income greater than INR 75,000. The survey was conducted for four weeks between December 15, 2019, and January 15, 2020. Christmas and New Year holidaysaround the world affect work in private offices in India, particularly in the IT sector where most of the clients from the USA or Europe are on leave. Also, almost all local schools observe Christmas and New Year break. Hence people/families pre-book and plan their travel itineraries. While trying to avoid repetition and demonstration, we collected responses from only one member of the group/family. Out of the valid responses, it was found that approximately 84 percent had recently taken domestic trips whereas 16 percent had gone on an international trip.

Travel Destination	**Percent**	**Travel Plan**	**Percent**	**Gender**	**Percent**
Domestic	84.3	Planned through tour operator	25.6	Male	61.0
International	15.7	Self-planned	74.4	Female	38.0
Age	**Percent**	Total	100.0	**Monthly Household Income**	**Percent**
<35	71.1	**Family Size**	**Percent**	<35000	27.0
35-45	13.6	1 member	4.2	35-50000	19.3
45-55	10.3	2-3 Member	24.9	50-75000	28.9
>55	5.0	4-6 Member	60.8	>75000	24.7
Total	100.0			Total	100.0

Table 1. Demographics
n = 477 Source: Authors'.

4.2 Measures

The study focuses on reflective constructs which have been adopted from Prebensen (2004).These were, however, modified to meet the objectives of our study. Motivations for choosing travel destinations were rated on the importance given by the respondents on a Likert scale. The overall satisfaction of respondents was measured through their responses on destination satisfaction, intention to revisit, and intentions to speak positively about the destination.

4.3 Phase I

In phase, I, the content validity of the questionnaire was established by carrying out discussions with six academicians and four practitioners having expertise in tourism marketing. Based on the suggestions received, few items in the questionnaire were refined. Further, 45 responses were collected in the pilot study. It was found that all the items of reflective constructs were internally consistent (as their value was greater than 0.708).

4.4 Errors addressed

Statistical procedures were followed to enhance the content validityand reliability of the constructs. To reduce the response bias, the languageof the questionnaire was simplified and ambiguities were removed. The objective of the study was stated clearly to the respondents before seeking their responses. To identify the suitability of the candidate to act as a respondent, cross-questioning was done. Also, logical sequencing of the questionnaire was ensured so that respondents could relate to the flow of questions being asked (Danaher &Haddrell, 1996). Common Method Bias was addressed by checking VIF values(Kock, 2015). All the values in the study were within the prescribed limit of 3.3. KMO (0.819) test showed sampling adequacy of data to support the analysis.

Table 2. Inner VIF values (signifying –no common method bias)

	Behavioral Intention	Destination satisfaction
Motivation	1.186	1.298
Satisfaction with tourist services	1.159	1.374

Source: Authors'
Note: VIF- Variance Inflation Factors (VIF)

Further, potential errors were eliminated (Davidshofer & Murphy, 2005) by ensuring the non-occurrence of coverage error (Moutinho & Chien, 2007)- only visitors acted as respondents and avoiding the chance of non-response error (Johnson & Owens, 2003) as 40 percent (477/1193) response rate was achieved. The questionnaire was checked for the possibility of measurement error by formulating balanced measurement scales (5-point Likert scale).

2. Data Analysis and Results

5.1.Phase II

The study employs PLS-SEM to assess the impact of travel motivation on satisfaction with tourism services, destination satisfaction, and behavioral intention and also to explore the relationship of travel motivation with destination satisfaction and behavioral intention with satisfaction with tourism services as a mediating variable. This technique was chosen because it is a non-parametric technique and requires fewer assumptions about the distribution of data and data size (Hair et al., 2013). To deal with the missing values, missing value analysis was used. To specify the pattern of loadings, a confirmatory factor analysis (CFA) was conducted by using the factorial scheme (Esposito-Vinzi et al., 2010).

5.2. Motivation: Higher-order construct

Exploratory factor analysis (EFA) for motivation construct was carried out in SPSS and nine factors were found. CFA was carried out in Smart PLS and nine factors represented the sources of motivation- fun, family, lifestyle, water activities, relaxation, explore, heritage trip, stress buster, and self-development. These nine constructs (the first-order constructs) together reflected the higher-order construct, motivation.

Table 3. Factors for Travel Motivation

	Factors	Self-Development	Water activities	Expl ore	Stress Buster	Heritage trip	Relax	Fun	Lifestyle	Family
Indicators										
RTD 21		0.724								
RTD 22		0.726								
RTD 23		0.768								
RTD 24		0.711								
RTD 27		0.718								
RTD 2			0.825							
RTD 4			0.696							
RTD 6			0.757							
RTD 17				0.729						
RTD 18				0.740						
RTD 19				0.738						
RTD 20				0.654						
RTD 32					0.815					
RTD 33					0.716					
RTD 34					0.804					
RTD 35					0.633					
RTD 13						0.784				
RTD 14						0.766				
RTD 16						0.823				
RTD 10							0.660			
RTD 11							0.703			
RTD 8							0.693			
RTD 9							0.799			
RTD 1								0.829		
RTD 31								0.826		
RTD 28									0.816	
RTD 29									0.865	
RTD 25										0.839
RTD 7										0.835

Source: Author's.

Exploratory factor analysis (EFA) for Travel Motivation construct

5.3. Measurement model assessment (outer model)

The study takes into consideration the values of composite reliability, indicator reliability, and amount of AVE to assess the proposed model. Asall the items have loadings greater than 0.70, composite reliability is achieved (Table 4). Table 4 shows that these values range between 0.512 and 1.0 and are therefore higher than the minimum acceptable value of 0.50 (Hair et al., 2011).

Table 4. Measurement model assessment

	Cronbach's Alpha	CR	AVE
Fun	0.739***	0.813	0.684
Family	0.874***	0.824	0.701
Lifestyle	0.788***	0.828	0.707
Behavioral Intention	0.713***	0.837	0.719
Water activities	0.737***	0.804	0.579
Relax	0.781***	0.807	0.512
Explore	0.783***	0.808	0.513
Heritage Trip	0.704***	0.834	0.626
Stress Buster	0.73***	0.832	0.556
Self-Development	0.78 ***	0.85	0.532
Satisfaction with tourist services	0.8	0.852	0.524
Motivation	0.89	0.904	0.519
Destination Satisfaction	1	1	1

Source: Author's.

Note: Significance at ***P < 0.001, AVE- Average Variance Extracted; CR- Composite Reliability

To achieve discriminant validity, Fornell and Larcker's (1981) criteria were used. According to them, if the squared root of AVE for all the items is higher than the correlation among constructs, there is a presence of discriminant validity. As can be seen from table 5, this criterion is easily met (Hair et al., 2016). The item loadings ranged from 0.672 to 0.855 which ishigher than the prescribed value of 0.6 (Nunnally, 1978), thus establishing indicator validity.

Table 5. Discriminant Validity: Fornell-Larcker test

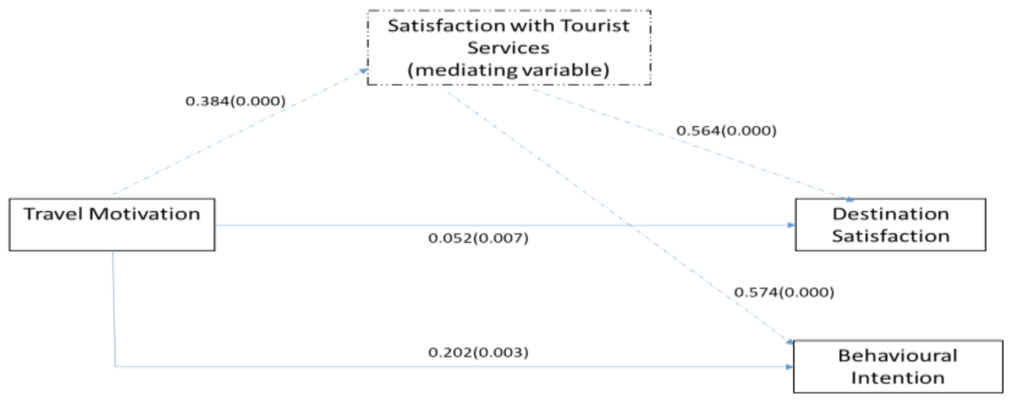
Behavioral Intention	**0.848**												
Relax	0.188	**0.715**											
Destination Satisfaction	0.538	0.027	**1**										
Explore	0.25	0.291	0.239	**0.716**									
Family	0.206	0.374	0.166	0.352	**0.837**								
Fun	0.281	0.261	0.336	0.384	0.331	**0.827**							
Heritage Trip	0.189	0.305	0.127	0.548	0.392	0.324	**0.791**						
Lifestyle	0.203	0.358	0.18	0.341	0.288	0.293	0.286	**0.841**					
Motivation	0.324	0.63	0.224	0.698	0.6	0.55	0.656	0.626	**0.499**				
Satisfaction with tourist services	0.481	0.134	0.522	0.296	0.301	0.338	0.194	0.232	0.344	**0.651**			
Self-Development	0.164	0.392	0.069	0.392	0.362	0.255	0.359	0.445	0.748	0.183	**0.73**		
Stress Buster	0.207	0.342	0.147	0.356	0.363	0.317	0.318	0.428	0.717	0.208	0.537	**0.746**	
Water activities	0.245	0.416	0.057	0.275	0.192	0.238	0.296	0.329	0.546	0.164	0.305	0.313	**0.761**

Source: Authors'.
Note: Values are square root of Average variance extracted. Off diagonal values are shared variance.

5.4. The structural model

The SmartPLS algorithm calculated R^2 measures for each endogenous variable and the path coefficients for each path within the model. R^2 for destination satisfaction, behavioral intention, and satisfaction with tourism services was 0.330, 0.484, and 0.270 respectively, which can be considered to be moderate.The significance of each path coefficient was calculated by bootstrapping (consistent PLS) using the replacement method. Results are shown in Figure 2. After bootstrapping, the significance of each path coefficient was derived. Hypotheses 1,2, and 3 were supported and partial mediation was seen in hypotheses 4 and 5 (Table 7). Model fit indices SRMR and NFI values were found to be within an acceptable range (Hair et al., 2017)- SRMR < 0.08 and NFI > 0.90. SRMR for the model was 0.07 and NFI was 0.96.

Figure 2. Structural Model



Source: Authors'.
Note: *** significant at 0.001 level; Weighted arrows show direct effects; dotted arrows show mediating effect of Satisfaction with Tourism Services.

5.5. Satisfaction with Tourism Services as a mediator

The direct, total indirect effect, specific indirect effects and total effect obtained in Smart PLS help in conducting a mediation analysis(Hair et al., 2016) and allow analyzing the single and multiple mediation models(i.e., parallel and serial mediation). This study follows Zhao et al. (2010) for understanding mediating effect.
Travel Motivation acts as a predictor of destination satisfaction and behavioral intention and is mediated by satisfaction with tourism services. After bootstrapping, direct and indirect effects were checked. In the case of travel motivation, we found that indirect effects with both the dependent variables- destination satisfaction and behavioral intention are significant. The relationship between travel motivation and destination satisfaction as well as behavioral intention is found to be significant. This implies satisfaction with tourism services is doing partial mediation with destination satisfaction and behavioral intention.
Table 6. Mediation effects

SPECIFIC INDIRECT EFFECTS	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Motivation -> Satisfaction with tourist services -> Behavioral Intention	0.22	0.228	0.045	4.861	0
Motivation -> Satisfaction with tourist services -> Destination satisfaction	0.216	0.225	0.044	4.966	0
PATH COEFFICIENTS	Original Sample (O)	Sample Mean (M)	Standard Deviation	T Statistics (|O/STDEV|)	P Valu

			(STDEV)		es
Motivation -> Behavioral Intention	0.202	0.207	0.067	3.023	0.003
Motivation -> Destination satisfaction	0.052	0.056	0.058	0.902	0.007

Source: Authors'.

Table 7. Support of Hypotheses

H1 Travel motivation significantly and positively affects destination satisfaction.	Supported
H2 Travel motivation significantly and positively affects behavioral intentions.	Supported
H3 Travel motivation significantly and positively affects satisfaction with services.	Supported
H4 Satisfaction with tourist services mediates the relationship between travel motivation and destination satisfaction.	Supported(Partial Mediation)
H5 Satisfaction with tourist services mediates the relationship between travel motivation and behavioral intention.	Supported (Partial Mediation)

Source: Authors'.

Note: Significance at $P < 0.001$

6. Discussions and Implications

Extant tourism literature has reviewed constructs like satisfaction, travel motivation, and future behavioral intentions; yet a conceptual model on these variables in the Indian context has not been examined. The present study is believed, to be capable of generating precise and useful applications for analyzing destination behavior. The study provides relevant theoretical and managerial implications. Because of the significant direct and indirect economic impact of the travel and tourism industry with other sectors of the economy (Statista, 2019), there is increasing attention by tourism marketers to market and brand tour destinations. From an academic and a tourism firm perspective, it is important to understand the consumer decision-making process concerning what and why tourists prefer and how does it affect the overall satisfaction with a particular destination.

The findings of our study suggest that the motivation behind travel is having fun, traveling around, and spending time with family. A tour manager's assessment aimed towards understanding specific needs and wants can play a useful role in influencing tourist behavior. It is only after understanding a tourist's attachment with a specific place that an attempt can be made to create unique memorable experiences. A manager's evaluation of tour attributes and motivation to travel is representative of consumers' satisfaction level and future behavioral intentions. Apart from this, a strong rationale for understanding motivation lies in planning and resource management in the tourism industry in general and particularly at destinations. For marketing promotions and communications to be successful, it is required that they be aligned with consumers' motivation to travel and they should explicitly address the way tourists seek information, their motivations behind travel, and the benefits that they seek during such travel. Further, investigating the effect of satisfaction from tourism services on destination satisfaction can enable tour companies to identify the strengths and weaknesses of a particular destination, giving them insights for improvement.

One of the central constructs in analyzing consumer behavior is satisfaction as it is taken as an assessment barometer of consumption experiences. The findings of our study indicate that satisfaction with tourism services leads to positive WOM communication and generates repeat purchases. It is one of the key variables for customer retention (Tu, Li, &Chih, 2013), building a stronger brand image (Popp &Woratschek, 2017), enhancing revenues (Fornell, Morgeson III, &Hult, 2016), evoking consumers to pay a price premium (Homburg,Koschate and Hoyer, 2006) and maintaining firm's competitiveness. Based on this, managers need to realize the importance of analyzing satisfaction derived from various tour attributes; encourage satisfied tourists to spread a positive WOM for their product, and use this communication to promote their products or services. Managers should also realize that since favorable tourist perceptions and experiences impact post-purchase behavior positively and create company differentiation; it becomes an important driver of sustained competitive advantage; more so in an increasingly saturated marketplace. Since satisfied tourists generate recommendations and act as one of the most economical and effective ways of marketing and promotion, retaining existing (economical) consumers, apart from attracting new (costly) customers should be a built-in company's marketing strategy. By using our study, managers in the tourism industry can weave in trip motivations, satisfaction, and the willingness of tourists towards future buying and recommending behavior to assess management strategies most suitable for their companies. Managers also need to focus on tourists' emotional feelings for creating loyalty. Such relation-building prevents customer defection and its associated costs and calls for a customer satisfaction management strategy with a focus on service delivery capabilities.

The important question facing tourism marketers, following from here is, how to generate higher levels of satisfaction and product confidence amongst tourists. A proper analysis of attributes leading to tourist satisfaction and its mechanism can provide valuable inputs to marketers to enhance the existing levels of satisfaction. This can be achieved either through making suitable manipulations in the marketing mix of the product or maybe through certain strategic decisions like customer segmentation and targeting. Adopting differentiating strategies to generate higher levels of tourist satisfaction and retention can also be practiced. Personalization and customization of tour products enable customers to get closer to their desired motive/s for travel. Since travel and tourism has evolved as a sophisticated and specialized product, managers in this industry should communicate through suitable diversification of goods and services for potential tourists. Managers need to realize that satisfaction creates differentiation and vice-versa.

Also because of an increase in packaged tour demand in the recent past, destinations have acquired more importance than individual attractions. Hence it becomes important to understand that it is not the satisfaction from individual facility rather the tourist satisfaction from a destination that would generate repeat visits. It becomes important to realize and act accordingly that tourists look forward to a unique and memorable experience in the context of particular destination/s which is conditioned by their motivation to travel, satisfaction from tourism services, and circumstantial occurrences. Destinations, therefore, need to be marketed differently to ensure competitive advantage and sustained performance in highly aggressive markets. Hence managers must indulge in destination management in directing tourism supply. Further, since destinations are a bundle of goods and services and are endowed with higher levels of complexity in comparison to a single product, practitioners must realize that branding of tourist destinations would be different from the branding of products.

This study has few limitations which create scope for future research. The study was conducted in Delhi-NCR making it difficult to generalize the findings to other parts of the country and other countries. More studies should be conducted to ensure the applicability of results across nations. The study has used nonprobabilistic samples. To ensure representativeness of the sample and better results, researchers in the future may use probabilistic samples. The current study investigated the consumer responses only for two months. This study assessed only cross-sectional data and did not examine long-term tourist behavior. To rigorously examine this model, a long-term study analyzing tourist data for multiple years can be planned. The study may also suffer from selection bias as people under 18 years are not included. As the study has been conducted in a specific setting, for model generalization, we suggest that future researchers replicate it in other settings with different attributes.

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UNITY OF MORALITY AND AESTHETICS IN PERSONAL MIND: PHILOSOPHICAL ANALYSIS

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ABSTRACT:

This article is devoted to the philosophical analysis of the place of morality and aesthetics in the consciousness of the individual, their synthesis.The problems of the formation and development of the ideal in the consciousness of a person, structure, levels of moral and aesthetic consciousness of a person are analyzed.It was analyzed that in the spiritual existence of a person, morality and aesthetics are inseparable at the same time.Ethical consciousness, aesthetic activity are closely interconnected, the aspects related to the aesthetic approach to reality are analyzed.

Key words*: spiritual existence of a person, ideal, morality, aesthetics. aesthetic consciousness, taste, personality, art, aesthetic feeling, taste, moral ideal, spirituality, aesthetic culture, truth, goodness, beauty,*

Introduction

From the history of philosophical thought, we know that the trinity, such as truth, goodness and beauty, were perceived as valuable, objective aspects of a person's spiritual existence.According to a number of authors, although the perception of people, ideals and criteria of beauty, goodness and truth change, there will always be standards that generalize ideas, criteria and norms that regulate and generalize them.These standards are crystallized in the process of the development of human imagination, shaping the spiritual existence of a person on the basis of national and universal values.Indeed, three ideas that are the spiritual value of humanity have been a major topic of controversy, from the Avesta to the Koran, from ancient Greek philosophers to modern philosophy.

Materials and Methods

There are also researchers who have defined the unity of morality and aesthetics with the concept of "perixorez", which reflects the dialectical-antinomic relationship between truth, goodness and beauty - the traditional trinity.The results of these social relations, covering the spiritual culture of a person, in contrast to the original, are concentrated in the modern "inseparably indivisible" unity and are expressed through the moral essence, aesthetic meaning.In the spiritual existence of a person, the concept of morality and aesthetics as a single, two-sided, single foundation is gaining more and more importance.Instead of the concepts of "perixorez" and "unrelated", which are internal relations arising from the interaction of different views on the three ideas mentioned above, it seems appropriate to use the concept of "architecture" from the outside. The concept of perixorez has a philosophical basis for the trinity of truth, goodness and beauty. That is, the tragic-antinomy of a person's spiritual existence consists in the fact that the trinity of truth, goodness and beauty is in a state of "disunity", and the combination of this trinity in ethical and aesthetic unity (inseparability) creates an ideal. existence in cultural architecture. At the same time, spiritual existence is closely related to the ideas of unity and non-coincidence of higher goals.

This state of incoherence, inseparability of twin concepts means that human knowledge is integrated into one system, trying to build its architecture, unstable situations arise in the systematization of knowledge. According to Kant, “human thought is inherently architectural. Since the architectural interest in contemplation includes a natural benevolence towards the theses of the dissertation ”[1,], this human aspiration can be called a true philosophical aspiration.

In other words, the essence of inseparability lies, on the one hand, in the recognition of truth, goodness and beauty as the inseparability of culture in its current state, and, on the other hand, the ideal expresses its desire for inseparability in a cultural context. architecture. This metaphysical trinity of human spiritual unity plays the role of a certain norm of philosophical thinking, the essence of which is the perception and understanding of the ideal existence of the personality in philosophy, spiritual values in culture. This inner dialectical and antinomic relationship is therefore expressed by philosophers in terms of perichoresis or architectonics.

In the works of G.G. Shpet "Art is a form of cognition" and G.A. Zavalko "Philosophical Problems of Aesthetics" there are two different views on submission and disobedience to the threefold law of moral and aesthetic knowledge.These authors seek to "build a new edifice of free aesthetics" outside of morality and logic, that is, "to justify aesthetics as an independent fundamental science, independent of psychological, metaphysical and epistemological foundations."[2,297]For this, Shpet seeks to move away from rational principles and metaphysics, in contrast to normativeism, which does not allow the discovery of the "specific subjectivity of aesthetics."

The philosopher spoke about the construction of an "aesthetic ontology" that is different from pure aesthetics. Pure aesthetics - prima aesthtica ("consideration of aesthetics as an object in its ontological forms, analysis of acceptable and existing forms of aesthetic reality") emphasizes the need to overcome the reduction of the object to other (non-aesthetic) forms of aesthetics.

In real life, researchers have promoted ideas such as creating autonomous aesthetics, rejecting reductionist aesthetics, and excluding certain norms or interdisciplinary concepts.Attempts to limit the subordination of pure aesthetics to ontological, epistemological and rational principles are common.Because at one time, it was often observed that the categories of aesthetics were reduced to the concepts of other disciplines (for example, ethics, art history, cultural studies, logic).They tried to express the accepted truth in aesthetics, which is a philosophical science, through the concept of "aesthetic pleasure", to include aesthetic pleasure in pure "aesthetic ontology" as opposed to the utilitarian interpretation of hedonistic ethics.In it, an abstract being through an objective connection with the transcendent and the eternal requires the formation of a separate area of concepts of synthetic knowledge.In particular, it is emphasized that beauty and truth, which are the main central categories of morality and aesthetics, are included in dialectical, ontological relations in the forms of "abstract being" and "reality". Pure aesthetics regards beauty as "the fullness of abstract forms of being", and truth as the fruit of scientific research into reality. "If 'truth' is an existing concept, then 'beauty' is a state of neglect."[2,310].

The above analytical considerations show that morality and aesthetics in the spiritual existence of a person are based on philosophical dualism, which arises as a unit of comparative simultaneous action, emotional, rational cognitive experience.

Because the individual consciousness of a person is a trinity that includes logic (mental-rational), morality and aesthetics. Consequently, a specific subjective aspect of aesthetics is that it has a deep ontological interaction with the sciences of ethics and logic. In our opinion, there is no need to put the "Great Wall of China" between the identification of these two fronts, but it is necessary to study more deeply the interaction of these two fronts. Failure to grasp the true meaning of ethics, aesthetics and logic threatens our knowledge of the subject. This leads to misinterpretation of the true qualities of goodness and beauty, to immorality, and then to "pure" aesthetics.

Sometimes one of the components of the concepts of goodness, justice, beauty, which are eternal truths found in social life, takes precedence, and the rest of the concepts play a dominant role as complementary to the content, meaningful. Thus, the central concept of religious faith is the understanding of good and truth as a true religious teaching. In logical cognition, science is viewed as faith, and in human life - as a creator. In accordance with the requirements of rationalism, truth in science was closer to the true criterion of reasoning and theory, good - to utility and purposefulness (utilitarianism), and beauty - to a straightforward structure, smoothing out natural differences and forming geometry. Consequently, our rational knowledge could incorporate our epistemic knowledge of truth, goodness, and beauty into ethical and aesthetic sciences, while limiting their development. As long as the human heart is above knowledge and experience at a theoretical level, it must understand beauty on the basis of moral balance and truth, without disturbing the harmony of reality.

At present, the concentration of beauty in the field of art and sports, its liberation from "utilitarian objects and various goals and interests" brings art closer to a type that combines a state of pleasure, relaxation, excitement, relaxation. “Beauty in art is like truth in science. This is the relationship between content and form, harmony of one with the other, which allows us to touch the invisible depths of life and other worlds."[3,8-9]. Art is an object of aesthetic research, which harmoniously analyzes current issues of ethics and aesthetics. A work of art reflects positive and negative qualities through an image, a plot, a logical construction of an artistic composition decorates the work, gradually reflects aesthetic categories in the mind of the reader. This means that “a work of art studied in the field of art will at the same time be studied from an ethical point of view. However, such closeness does not mean semantic accuracy”.[4,81].

The ancient Greek philosopher Aristotle was right when he said that goodness manifests itself only in action, and beauty also manifests itself in inaction. Morality and aesthetics are manifested in the form of content and form, community and specificity, disproportion and harmony, and are studied as a dialectical, synergistic phenomenon in the spheres of life.[5,326].

In this part of our research, we aimed to conduct a conceptual analysis of the synthesis of ethics and aesthetics.At the same time, first of all, ethical and aesthetic sciences have a separate object of study, which led to the neglect of some subtle units of unity. Secondly, morality and aesthetics are, first of all, a kind of understanding of the spiritual world of a person, from an ontological, epistemological point of view, the study of two inseparable aspects of the studied object in one space and time,thirdly, keep in mind that these two inseparable concepts simultaneously explore the spiritual existence of a person, the movement and inaction of a being,fourthly, it is emphasized that in the spiritual world of the individual, aesthetics is inevitably associated with ethics and that aesthetization or the inverse relationship of the spiritual and moral existence of the individual remains an object of research in these areas of science.

In general, based on the above considerations, the synthesis of ethics and aesthetics and their analysis in three concepts leads to the following conclusions:

Firstly, in the sense of beauty, which has a moral constant, it approaches the content not only by virtue, but also by "truth-justice."Beauty is created by the labor and thinking of people - it manifests itself in the form of the reality of people, and beauty that does not depend on a person is distinguished by the nature of space and time;*secondly*, the semantic integration of the disciplines of ethics and aesthetics, first of all, the analysis of their metaphysical meanings, the unification of these two areas under one goal (some authors say that under one roof) is seen as a solution to ethical, ethical problems in society;*thirdly*, the aesthetics of morality, or the morality of aesthetics, indicates its opposite. He defines the border between good and evil and explains what is beauty and what is not.In the theory of personal education, the individual gives knowledge about the normative polar aspects of didactics as the antipode of virtues and vices; *fourthly*, there are authors who interpret morality and aesthetics mainly as indivisible and indivisible spheres, such as the concepts of goodness and beauty, as well as those who defend their pure ontology, the separation of objects.The unification of their views, their adaptation to the principles of the methodology of logical knowledge is a topical issue; *Fifthly*, the aesthetics of morality, the tendency to moralize aesthetics, is becoming more and more relevant for our time.The authors (M.S.Kagan, L.A. Zags, N.V. Golik, V. Nabokov, M. Nurmatova, T. Makhmudov, etc.) claim that the harmony of moral and aesthetic values, the effectiveness of their joint study, they emphasize the need to keep the current aesthetics under moral control, that is, to preserve the moral aesthetics, to maintain the symmetry of the connection between these axiological "Siamese twins".

The globalization of the twentieth century has led to national-ethnic, social, religious conflicts. Conflicts, social-class conflicts, and in some ideological contexts the areas of aesthetics and ethics continued to remain antagonistic, even recognizing them as opposing areas. Now their approach is assessed in an incomprehensible way, as if combining religious knowledge with the achievements of science. The interpretation of the German classical philosopher I. Kant in this regard can have a common denominator for all humanistic, democratic trends and bring universal possibilities to the philosophical thinking of the 21st century. At present, the tendencies for the synthesis of these two concepts, namely, morality and aesthetics, can be observed in Russian and European schools of thought in the form "Virtue and Truth: Classical and Non-Classical Regulators".They devote a discussion to one of the eternal themes of philosophy - the relationship between truth and good. It analyzes the ethical and epistemological aspects of the interpretation of truth and good in the history of philosophy, and focuses on the problem of disagreement between truth and good, which leads to the gap between ethics, epistemology and the axiology of science. An important breakthrough in the history of philosophy is that “the main vector in the interpretation of the relationship between truth and good is the disagreement between the two forms of debate, ethical and cognitive discourses. This disagreement ultimately led to a split between ethics and epistemology, to the idea of value neutrality of scientific truth, and to the fact that the criteria for true knowledge were not placed in ethical discourse. There is another interpretation - moral and epistemological discussions and the search for the unity of good and truth."[6,3].

Thoughts and views on the synthesis of morality and aesthetics today have led to diversity. They provide a detailed explanation of the reality of three units (goodness, truth and beauty), and the unity (inseparability) of these concepts determines the boundaries of the methodological and ontological connection between them. The three kingdoms originally established in the writings of the ancient Greeks: truth, goodness and beauty acquired methodological significance. These early views, expressed as metaphysics, are also present in the new philosophy of our day. “They have no basis either in the Bible or in church narratives, and therefore they are not protected from various revolutions, annexations and changes of borders. There were times when the three dimensions of this hierarchy of the ideal universe seemed arbitrary to us. Why should there be three kingdoms, not four, five or two. This is why there are so many attempts to reconsider."[7,321].

G. P Fedotov, based on the idea of "unconnected-integral" unity of truth, goodness and beauty, explained the state of "non-union" in order to avoid false substitution and interference. There is a mutual attraction and disintegration between these three, since the supreme kingdoms are not at all close to each other. But this cannot be the basis for the final denial of synthesis and unity. To leave the unity of the trinity, especially the importance of unity, it is necessary to have a clear understanding of the qualitative stratification of these concepts and the logical boundaries between them.

In the field of ethics and aesthetics, there is a philosophical methodology that studies the foundations of the emotionally rational, valuable world of humanity in the field of ethics and aesthetics. Human cognition and its value aspects are intertwined in epistemology. We know this from the existence of research areas such as ethics, aesthetics, cognitive theory, and values. It should not be forgotten that moral laws in society are universal, the laws of philosophical knowledge are universal, the individuality of aesthetic pleasure. On the other hand, “ethics and aesthetics are sisters, since they deal with the world of necessity, and knowledge with the world of existence. There are also differences: art and morality build their own world, and science finds it."[7,323].

In general, the above analysis recognizes the unity of ethics and aesthetics, the quality of the system of important legal ties. Opposition of aesthetics to ethics, or vice versa, means that a particular social system is experiencing an escalation of global problems, which indicates a sharp change, a weakening. The period of the convergence of ethics and aesthetics, the emphasis on the similarity and unity between them, the period when the human heart realizes the tendency towards the opposite, is the period of ascent. Through the structural analysis of moral and aesthetic consciousness, researchers can see an attempt to build a dialectical connection between ethics and the science of aesthetics, show the true complexity and contradictions of these relationships, limit their framework and determine their true space.

There are also supporters of the idea of a synthetic understanding of high spiritual values, primarily for understanding the ideal (A.V. Guliga) and combining knowledge with practice in the context of its achievement. “Truth is not only knowledge, it seeks to embody the reality of the world built in accordance with this knowledge. In this case, knowledge is combined with practice, which is an active transformer of the world and man. Thus, he strives to be similar to reality, goodness and beauty."[8,72]. Consequently, the concepts of truth, goodness and beauty are ideal in nature and are embodied in the form of three images of the ideal in a layer of high spiritual value of a person. Can the subject and object of ethical and aesthetic sciences fully realize that this ideal fully embraces human spirituality? Questions arise naturally. These are questions that modern researchers should pay close attention to.

According to the views that have developed in the history of aesthetics as a “history of synthetic spirituality” (KG Isupov), the subject of aesthetics is “an emotional person,” that is, a “mentally unhappy being”.[9,9]In this synthetic analysis, human aesthetics is interpreted as "moral self-organization." The anthropological structure of man exists in its "inseparable" unity with other, similar, adjacent, different facets. According to another source, ethics and aesthetics in it, a moral dispute introduces a person as homo aesthetikos (A.E. Zimbuli) in the debate. The deep unity of ethics and aesthetics is embodied in the meaning of the word Aesthetikos. "A person who feels this can be proud, ashamed, sympathetic, sad, flattering, jealous, afraid, jealous."[10,69]. From this it follows that man himself, by his very nature, is a creation of aesthetic nature. His feelings and activities are studied only in directions. The primary general subject area of ethics and aesthetics is in the consciousness of a person as a single whole - a syncretic unit in which there is no analytical delineation of morality, aesthetics, epistemology. Man is a being of a moral and aesthetic nature who is afflicted and angry, hated and respected, afraid of the truth and unable to feel.

The unity of morality and aesthetics, the union of two indivisible forces of the human mind are reflected in research. In the human mind, the study of two closely related forms, emotional states, is divided into ethical and aesthetic: "Isn't the moral state aesthetic, or vice versa: the aesthetic state is similar to the moral state?" - the question arises. The connection between morality and aesthetics is very clear: "The aesthetic state is more productive, more clearly, more clearly reflects the moral state."[11,30]. Fiction provides an aesthetic description of the subtleties of human creativity. In fiction, the poetic process, in the dramatic process, the emotional experiences of a poet or writer are manifested on the basis of high moral rules, on the basis of great elegance. "Aesthetic aesthetics itself is a primary synthetic act"[12,30].

In general, modern researchers have a more classical approach to problems. Studying the concept of reality, researchers approach three units. Truth and goodness reflect a higher, divine view of the world. "Impressions of truth are the basis of a rational approach to life, the idea of good is based on morality, and the idea of beauty is based on aesthetics."[13,623].

Many researchers have considered the whole nature of truth in relation to goodness and beauty. As a result of the interdependence of morality and aesthetics in the spiritual existence of a person, various ideas and views have arisen in scientific research. Ontological, epistemological and axiological approaches to the problem have been formed, most of which concern the question of whether human consciousness and spirituality are inseparable in culture. It is emphasized that a common view from a metaphysical point of view on the unity and uniqueness of morality and aesthetics with modern views reflects the idea of truth, goodness, beauty for a person in the spiritual world of a person.

Conclusion

From studies of the synthesis of morality and aesthetics in human consciousness, the following conclusions can be drawn:

firstly, in the spiritual and spiritual structure of the individual, the moral and aesthetic has inseparable and integral parts, the study of which separately gives only a one-sided solution to the problem;

secondly, the study of the content and criteria of good, beauty and truth, the definition, separation, unification of their place in the spiritual culture of the individual has become a valuable eternal movement of mankind;

thirdly, modern researchers focus on the classical view of the fundamental concepts of truth, goodness and beauty, which form the basis of any process of studying the values of being and culture; *fourthly*, morality and aesthetics are attributes of the spiritual world of the individual, reflecting two inseparable aspects of the studied object in space and time from an ontological, epistemological point of view;

Fifthly, the inseparability of individual consciousness can be a positive factor in solving today's ethical, environmental problems, reflecting the first ontological state of human spirituality.A logical solution to global, local problems, a way to overcome the escalation of ethical problems - the unification of the content of morality and aesthetics in the consciousness of the individual;

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SYSTEMATIC REVIEW OF RESPONSIBLE TOURISM STRATEGIES OF DEVELOPED NATIONS: LESSONS FOR THE DEVELOPING NATIONS

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ABSTRACT

Purpose: *Drawing on a systematic review, the study constructs an interpretive framework, which provides insights of the definitional perspectives and the implementation of strategical practices in developed nations. The synthesis of these diversified concepts within the literature provides an understanding of prospects and hassles for the developing nations regarding implementation of strategies.* ***Methodology/Approach:*** *A conceptual framework named (PISSAT) has been proposed highlighting the application of interventions by developing nations to redefine their tourism and environmental aspects. The study was undertaken with 109research papers from esteemed journals.*
Findings: *Results depict the challenges encountered by the developed nations while implementing the strategies due to the striking ideologies of various stakeholders and the flaws in the strategical aspects.* ***Research Limitations/Implications:*** *Future research might further revive the widespread misappropriations about understanding the phenomenon. The study widens the research possibilities for academicians to rediscover the models to ensure adaptability for transformations in tourism indices.* ***Practical Implications:*** *Recommendations to various capitalists, government authorities and tourists in terms of wider tourism planning and management to balance their approaches necessary for the tourism to flourish globally. The planners could be provided with the baseline of adequate information about stake holders' perceptions of responsible tourism.* ***Originality/Value:*** *Research highly agrees that in the growth in the tourism sector in collaboration with Responsibility is essential, for other thespians that jointly provide services to the tourists. However, there are numerous thespians, which are related to the Responsible tourism. All the dynamics associated to it are required to be acknowledged and considered for the analysis.*

1.1 Introduction

Responsible tourism plays an important role as socially and environmentally amicable industry (Bryd et al., 2008; Wilson et al., 2001; Davis and Morais, 2004) and it leads as the major export earner during last few decades (Goodall, 1987).The institutional disorganization, merchandising of local values, growth in social evils among the natives, annihilation of environment, climate change and polarization of regional population have raised the concern at the global level; the emergence of these problems is actively felt by the tourism industry as well (Stronza and Hunt, 2012; Carmein et al., 2012; Morucci and Curcic, 1990; Satterthwaite et al., 2007; Hunt and Watkiss, 2007; Reckein et al., 2017; Jones, 2017; Frondel et al., 2017; Frondel et al., 2017; Becken, 2004; Scott et al., 2012). Barnett (2008) has also advocated the rising concerns among the stakeholders regarding the negative impacts of destination tourism in order to create solutions to tackle the problems. Hence, the emergence of Responsible tourism has been acknowledged over the globe as initiative to boost the balanced growth, as a practice to empower the individuals and as a significant way to proliferate the developmental initiatives (Pineros et al., 2014).

Prior researchers have mostly concentrated on the managing the perspectives and ideological parameters of concerned stakeholders as well as finding the innovative and alternative ways to attract the tourists safeguarding the environmental and social aspects across the developed nations (O'Conner et al., 2008; Ramos and Fernando, 2009; Bruce et al., 2001; Tepelus, 2008; Miocic, 2014; Byrd et al., 2008; Urquhart et al., 2014).However, the impact of globalization has enables the Asian countriesto grow and groom as next economic power at the global level (Kumar et al., 2012; Saraithong and Chancharoenchai 2011). But the irony is that the available research experiences have highly underrepresented and refrained to comprehensively ascertain the responsible tourism related approaches and proposed Sustainable Business Models across Asian nations Like India, Indonesia, Thailand and Philippines etc. (Nurinsiyah et al., 2015; Parks et al., 2009; Kumar et al., 2012; Saraithong and Chancharoenchai 2011).

However, despite the recent interest in the 'Responsible Tourism', due to its highly intensified strategical potential and requisite of industrious efforts, a little is known regarding what encompasses the entire aspect in Asian emerging nations (King, 2015). The Asian countries are struggling to comprehend the concept and to incorporate the strategical measures being successfully harnessed by the developed nations as Potential adopters. There is dire need to create constant, revised, finely furnished and well-defined planning and development strategies among these regions (Billington et al., 2009). There is bulk of published research work regarding tourism in the past; but less attention has been paid to generate and analyze the transitional and future scenario in the light of global transformations across Asian (Benckendorff, 2007; Benckendorff et al., 2009).

Hence, with this research paper, an attempt has been made to bridge the existing knowledge gap in the literature; drawing upon prior the 'Responsible Tourism' studies to enhance the ecologically innovative interventions to attain the following research objectives:

1. Clarify the definitions and evolving aspects associated with the 'Responsible Tourism'.
2. Elucidate the various practical strategies implemented among the Developed nations throughout the globe in context to 'Responsible Tourism.
3. Unravel the prominent roles played by the stakeholders for ensuring the promotion of tourism practices laden with active responsiveness towards society, economy and environment.
4. Develop a conceptual framework to highlight the active interventions as the best possible course of actions to be deployed by Asian countries to promote the 'Responsible tourism.
5. Develop directions for future research where the deployment of such interventions is likely to have huge positive consequences.

The study provides an integrative conceptualization of 'Responsible Tourism' and overview of its gradual evolution and relevance in present times. The Research Design depicts the method use to furnish details about comprehensive outline of strategies related to Responsible Tourism implemented across Developed Nations. There are discussions about the role played by multiple stakeholders in flourishing the entire phenomenon. The systematic analysis of the study also reveals a conceptual framework named 'PISSAT' underlying the various interventions that could be incorporated by developing nations to sustain in furtherance. The Practical implications of the present study are discussed followed by conclusion and future course of action.

1.2 Responsible Tourism: An initiative towards an Integrative Definition

'Responsible tourism' has been gaining tremendous attention at the global level as a summation of active mechanisms to combat the challenges posed by the traditional tourism industry on the economic growth, environmental sustainability and conflicting ideologies among the stakeholders (Lansing and Vries, 2007). The concept of Responsible Tourism has evolved with the transformations in the multifarious domains with time and the following Table No. 1 has provided an integrative definition of Responsible tourism by reviewing the ideologies of the eminent scholars about the phenomenon.

Table No. 1: Evolution of term 'Responsible Tourism'

S. No.	Citation	Definitions
1.	(Woehler, 2004)	An ideological perspective to overcome the loss of local distinctiveness, promote the sustainability and relating the leisure, hospitality and pleasure.
2.	(Klak, 2007)	An introduction and execution of social and environmental prospects of ecotourism.
3.	(Irving, 2008)	An approach to provide sensual pleasure and long term enjoyment to preserve the tourists as guests by focusing on covering the loss of local distinctiveness
4.	(Bellington et al., 2008)	A holistic approach to respond to the local green issues through adequate planning at the local level necessary for tourism development
5.	(Conway and Benjamin, 2010)	A sustainable, humanistic and eco-friendly promotional vehicle, which ascertains the core problems as the result of the saturation in mass tourism in terms of destructive hard growth and development axioms as well as an alternative to the mass tourism.
6.	(Furqan et al., 2010)	An act of encouraging tourism to different destinations while promoting the respect and conservation of bio and cultural diversity among those regions.
7.	(Stronza and Hunt, 2012)	A strategy and incentive to conserve and empower the affected people; provide platform to revive the social and environmental injustice and an opportunity to enhance the new visions towards nature.
8.	(Lu and Stepchenkova, 2012)	A form of tourism aims at protecting the natural areas, minimally affecting the environment or biodiversity, maximally respecting the host culture and providing benefits to local communities and the tourist guests
9.	(King, 2015)	An idea encompassing the aspects like inclusiveness, equality, responsibility, information, social just, environmental sustainability, interface and bottom-up decision making process.
10.	(Pandey and Rogerson, 2019)	An initiative to interpret adaptation and mitigate the responses of tourism along with the changes in climatic conditions
11.	(Booyens and Rogerson, 2019)	An emphasis on active involvement of tourists in learning experiences and create visionary spectacles to disseminate them for creating productive precincts

Hence, there is a battery of definitions related to Responsible tourism in order to illuminate the different aspects related to it (Table No. 1). Some have defined it as solution to meet the problems faced by the local people of a particular destination (Bellington et al., 2008; (Conway and Benjamin, 2010; Irving 2008). Some have defined as the tool to enable the tourist relishing on the environmental privileges not at the social and environmental cost (Klak, 2008; Woehler, 2004). Finally, has/have provided a comprehensive definition of Responsible tourism that entails protection of interests of local communities, empowerment of the stakeholders to enhance the decision making for development of tourism industry in consortium with environmental aspects (Stronza and Hunt, 2012; Furqan et al., 2010). Overall, we need to rethink about the Responsible tourism from all the relevant perspectives i.e. economical, ecological and social (Reid, 2003; King, 2015; Rochards, 2011, Mckaway, 2012; Turock and Borel-Saladin, 2018; Duxbery et al., 2016).Therefore, we define the 'Responsible tourism' as a holistic approach, which provides a deep understanding and implementation of various aspects such as inclusiveness, equality, responsibility, information, social just, environmental sustainability, interface and bottom-up decision making process parallel to each other to overcome the challenges persisting in the contemporary scenario.

1.3 Research Design

In this study, the first phase, a comprehensive review of literature of the journal articles dealing with concept and strategies related to the 'Responsible tourism' was conducted. The approach encompasses the three key features: i) The development of segregation framework; ii) Conduct the review of literature; iii) Realize the segregation of relevant journal articles. The study also focuses only on the journal articles of the authors illuminating that 'practitioners and academicians alike use on frequent note to acquire relevant information and disseminate the new findings and represent the highest echelon of research'. A search within the timeframe ranging between 2001 to 2019 was reckoned to be the representative of the span encompassing the emergence and existence of Responsible tourism, with a comprehensive search with the help of descriptor, 'Responsible tourism' conducted among the following databases: Elsevier; Springer, Emerald; SAGE; Taylor & Francis. The research began on April 2, 2019 and ended on June 1, 2020. The initial search was resulted in about more than 800 articles and the references, including the abstracts of all the articles, were downloaded into Endnote for further analysis. However, with several repetitive analyses, only 109 articles were deemed to be relevant to meet the research objectives. Hence, they were selected for the classifications.

1.4 Strategies Related to Responsible Tourism Implemented across Developed Nations

All the developed nations have adopted numerous significant strategies to standardize their practices pertaining to development of responsible tourism and persist in pace with the global yardsticks (O'Conner et al., 2008; Ramos and Fernando, 2009). Table No. 2 has given an overview of the major strategies adopted by the develop nations:

Table No. 2

S. No.	Name of the Country	Strategies Implemented	Citation
1.	Europe	(PREPARe Wheel) Preparation of Policies by Identifying Sustainable Tourism System, Vesting Community with Responsibilities, Communicating Eco-awareness through Education and Training Programmes, Implantation of Programmes, Auditing and Review.	(Bruce et al., 2001)
2.	North Carolina	Active Involvement of all Concerned Stakeholders, Optimal use of Environmental Resources, Constant Monitoring of All the Implemented Strategies, Sustaining Strong Political Leadership.	(Byrd et al., 2008)
3.	Australia	Involvement of Local Government, Constant Research and Development, Adequate planning to Balance the Resources, Tourism Governance to provide opportunities and dialogue among all stakeholders to Enhance Collaborative Advantage	(Dredge et al., 2011; Bicknell and Macmanus, 2006; Goldberg et al., 2018)
4.	Portugal	Introduction of Introduction and Communication Technology to develop user friendly interface, online access to the data available with the hospitality sector to support tourism planning and decision making process after risks and prospects analysis	(Ramos and Fernando, 2009)
5.	Brazil	Awareness Campaigns, within the Employees of Hospitality Industry regarding their roles and Bestowed them with the Power to Take Suitable Initiatives to withstand the menace of Human Trafficking and Sex Tourism, Involvement of Non-Governmental Organizations to act as Agent of Change.	(Tepelus, 2008)
6.	Croatia	Providing adequate education campaigns to raise the awareness among the tourists regarding the challenges faced by local communities	Miocic, 2014)
7.	Germany	Strengthening and enhancing the Local cultures through investment in local resources; Maximizing the community beneficiation control of tourism resources; Stimulating innovativeness, provision of user-friendly and eco-efficient transportation facility.	(Butt and Briedenhann; 2006; Frondel et al., 2017)
8.	Italy	Active involvement of all the stakeholders in the major decision making process and promotion of active learning to rejuvenate their skills to cope-up with the changes and challenging environment	(Angeloni, 2013; Smith, 2009; Florida, 2005; Wurzburger et al., 2010)

9.	Canada	Programmes to generate ethical awareness and orientation regarding tourism in the curriculum	(Hudson and Miller, 2005)
10.	Switzerland	Providing sustainable strategic goals, constant monitoring and reviewing, Development of indicators using Bottom-up approach	(Johnsen et al. 2008)
11.	Japan	Devising a transparent user-interface system to enable the stakeholders to have access to the system and the transforming indices	(Rouff, 2019)
12.	Mexico	Constant re-development in the infrastructural facilities to energize the growth and unlock the economic, social and environmental potential at the local level	(Rogerson and Rogerson, 2017)

Hence, the various strategies mentioned in the Table No. 2, gives an insight of active interventions implemented by the developed nations in order to keep up with the pace of changing scenario. All the strategies mentioned above are entirely unproductive unless actively attributed to the recognition of significant role played by the multiple stakeholders in the tourism development by embedding different perspectives at all the echelons. The significant roles of played by different stakeholders in development of tourism in the light of Responsibility aspect are discussed in furtherance.

1.5 Role of Stakeholders in Responsible Tourism

The active involvement of all the stakeholders of the community is the key condiment to develop the phenomenon of responsible tourism in tersm of governance, polcy making and operational aspects (Byrd et al., 2008; Tosun and Timothy, 2001; Wong et al., 2013). The identification and acknowledgement of interests of all stakeholders is necessary to craft the tourism development vision (Byrd, 2007; Larderel, 2003; Tomljenovic et al., 2013). The stakeholders have legitimate and deliberate interests in redefining and redevising the meaningful indicators of environment-led tourism ideology (Pepperdine and Ewing, 2001). Their active participation boosts the right course of actions and promotes effective dealing with them on ethical grounds (De Lopez, 2001; Kajjan et al., 2015; Kajan and Saarinen, 2013, Hoy et al., 2011). The role played by multifarious stakeholders in association with tourism has been portrayed in Table No. 3.

Table No. 3: Role of Stakeholders in Responsible Tourism

S. No.	Type of Stakeholder	Role of Stakeholders	Citation
1.	Tourists	Exposure, Relishing, Sense of Leisure, Quality of Life Experiences, Sharing the Experiences	(Li, 1998; Irving, 2008; (Woehler, 2004
2.	Destination Management Organizations (DMOs) such as Hotels, Tourism Agencies, Bureaus and Airlines	Tourism Promotion, Information Dissemination, Development of the Product, Searching and Devising New Strategies for Tourism Development	(Borhnost et al., 2010; Gartner, 2002; Tomljenovic et al., 2013; Li, 1998;
3.	Government Authorities	Community Involvement, Check over Resources, Strategical Development, Allocation of Funds to the National Tourists Boards, Pump Priming, Constant Analysis and Revival of Tourism Policies	(Goodall, 1987; Bruce et al., 2001; Li, 1998; (Tomljenovic et al., 2013).
4.	Local People or Residents/ Entrepreneurs	Promotion and Strengthening of Cultural values and Customary Practices	(Marusic and Horak, 2007; Li, 1998;
5.	Advocacy Groups or Non-Government Organizations	Mobilization of communities to action, Environmental Preservation,	(Simpson, 2008; Tomljenovic et al., 2013; Byrd et al., 2008

		Initiate Dialogue with Public Officials	

As mentioned above (Table No. 3), the role of all the concerned stakeholders discussed above is vital in the survival of the tourism practices.

1. Tourists: The tourists are the first and foremost group of stakeholders as their interests and enthusiasm is the foundation for the tourist practices all over. The tourist act as active participants who aim at seeking for heightened quality of life experiences, sense of place and cherishing leisure (Conway and Benjamin, 2010). They play pivot role in gathering new experiences and knowledge by gazing new places and disseminate their visions as well as share their experiences with others to change the approach of the world (Stranza and Hunt, 2012; Mekawy, 2012).

2. Destination Management Organizations (DMOs): The overall management and development of tourism is vested with them to frame a structure for bringing all the stakeholders in unison (Tomljenovic et al., 2013). All these domains in the tourism business are collectively reckoned as capitalistsand tourism as the capitalism because they require profits to survive and grow (Li, 1998).Gartner (2000) has advocated their role in searching new strategies necessary for the development of tourism.

3. Government Authorities: They possess the power and charge over the resources to keep the tourism development in their clutches in terms of zoning, licensing, framing andimplementing tourism policiesto steerthe community involvement (Tomljenovic et al., 2013). The authorities are concerned assistance of funds to National Tourist Boards; stimulate investments by private sector and financial institutions through pump priming (Goodall, 1987). Bruce et al., (2001) mentioned their significant role in constant monitoring, review and auditing of national policies to ensure Responsiveness and Sustainability in tourism. Moreover, they engage the training programmes to stimulate Eco-sentience and active engagement to enhance the tourism practices and eradicate poverty among the locals in rural areas (Bruce et al., 2001).

4. Local people or Residents/ Entrepreneurs: The local communities support tourism developmentby stimulating the promotion of cultural practices, custom values, traditions and superseding their individual motives to get pecuniary benefits(Marusic and Horak, 2007). They contribute to the small scale business side that make little contribution to the society, environment and economy (Conway and Benjamin, 2010; Convey and Potter, 2007).

5. Advocacy Groups or Non-Government Organizations: They vigil over the actions of public and private sectors as well as act as guardian of community against their malpractices related to environmental aspects (Tomljenovic et al., 2013). They mobilize the people into action with initiatives like Protesting, Proportions and act as Public Forums (Simpson, 2008). Byrd et al., (2008) have accounted for the role of advocacy groups to frame a dialogue between public authorities and interested communities over development initiatives and their practical impacts. They create a linkage between conservation, ecological development, community interaction and responsible tourism (Stronza and Hunt, 2012).

Some researchers have highlighted the distinctive but significant roles played by concerned stakeholders with regard to application of development initiatives worldwide (Angeloni, 2013). The irony is reflected in the active indulgence of all these stakeholders in their respective domains neglecting the need to act in unison in order to gain the maximum benefits. Hence, the conceptual framework proposed by the study (Figure No. 1) illuminates certain significant interventions, necessary to be included by the developing nations to influence the ideology of these stakeholders.

1.6 Conceptual Framework ‘PISSAT’: Adoption of Active Interventions by Developing Nations as Lessons from Developed Nations to Promote Responsible Tourism

The tourism organizations have to survive withstanding the major gauntlets in terms of technological transformations, diversified tourist expectations, competitive environment, management of market destination, addressing the hindrances in way of crafting new dimensions of tourism and redefining visions to answer them (Gretzel et al., 2006). Tourism has become a complex phenomenon of intertwining interests or dichotomous relationships among different stakeholders (Hall and Brown, 2008; Krotz, 1996). The localities have a very lean voice against the Capitalists and the Nations' authorities (Krotz, 1996). The developing nations can learn many lessons from the strategical interventions practiced by the developed nations**,** which are significant to the viability of the tourism (Figure No. 1). These practical interventions can be wiselyapplied by the developing nations to enhance their present social, economic and environmental systems.

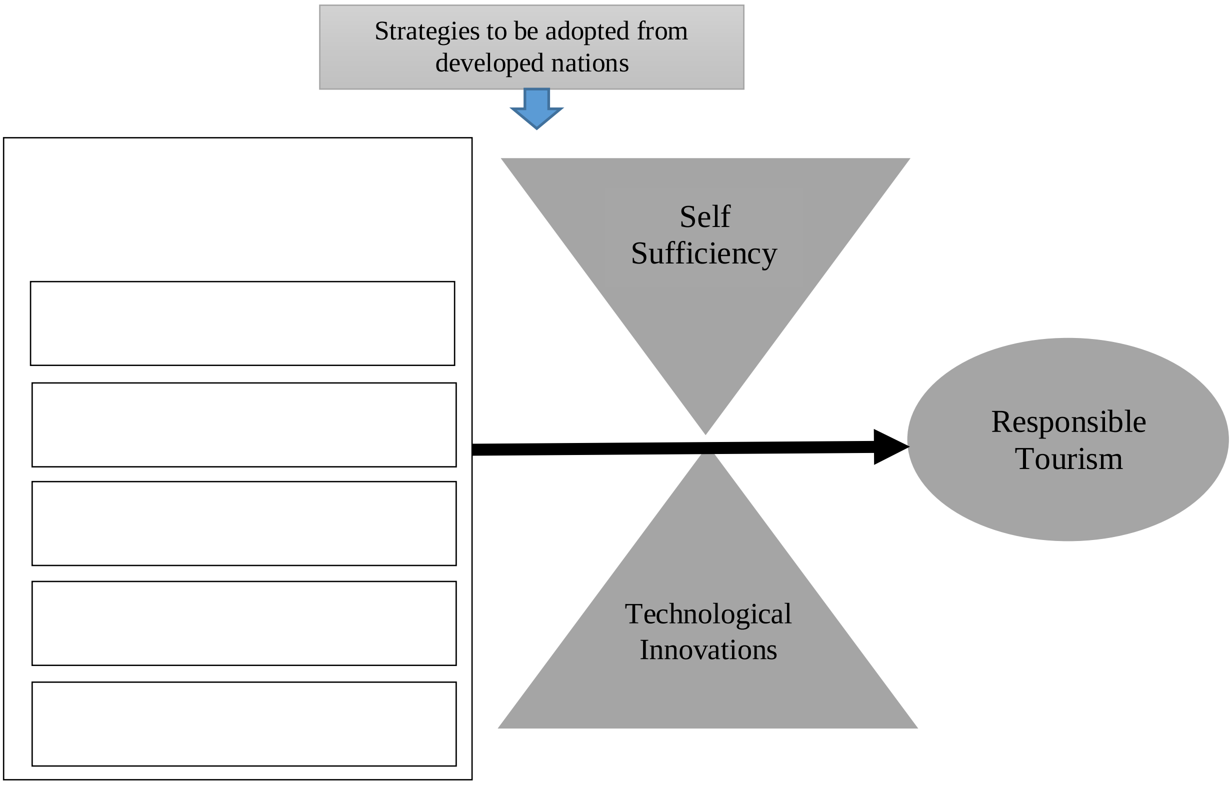

Figure 1: PISSAT Framework

(P) Proper Utilization of Environmental and Social Resources:

The utilization of social and environmental resources includes harnessing the cultural landscapes, physical resources, industrial values, community participation, social customs and use of cultural heritage resources to enable the (Huibin et al., 2012; Keitumetse, 2009; Puczko and Ratz, 2007; Lu, 2006). The resources must have symmetry of ownership and representation to provide grounds for sustainability and responsibility for maximizing welfare and overall development (Williams, 2002; Reid, 2003; Mowforth and Munt, 2003).It is possible when the experiences between locals and the visitors have the potential to augment responsible tourism practices (George and Booyens, 2014, Booyens, 2010, Booyens and Rogerson, 2015; Rofles et al., 2009; Frenzel et al., 2015; Koens and Thomas, 2016).

(I) Introduction of Comprehensive National Tourism Policy at all Levels

A Comprehensive National Tourism policy imbibes practices related to protection of environment, development of infrastructure, conservation of bio-diversity and growth in the local economy so that there is balanced improvement across all the domains (Marzuki, 2010). Moreover, it stimulates cultural exchange and ensures effective implementation of strategies (Mohamed, 2002). The social, cultural, environmental and institutional aspects are essential to be embedded while framing the Policies for the development of tourism (Johnsen et al. 2008; Masie and Bond, 2018; Engle, 2018).

(S) Stimulate the Active Involvement of all Stakeholders through Formal Education and Training Programmes

The stakeholders especially tourists are keen to find opportunities to connect with the traditions, cultures and values of the local community, which requires the adequate knowledge, skills and art to expose to the diversifications and transformations(Mckercher and DuCros, 2002; Smith, 2009; Florida, 2005). The active involvement of all the stakeholders is enhanced through interactive workshops and learning experiences in an informal wayto attain positive attitudes towards their responsibilities (Wurzburger et al., 2010; Hoy et al., 2011). Even there are initiatives to incorporate ethical education in the school curriculum to make the children aware about their responsibilities towards society and environment right from the beginning (Stronza and Hunt, 2012; Archer et al., 2005; Holden, 2003; Hughes, 2005; Kirande et al., 2002)

(S) Systematic Review and Audit of Environmental and Tourism Management System and Strategies

There is dire requisite oftransparent system to provide access to the interventions taken by the Government(Mazzanti, 2003; Poor and Smith, 2004). The constant monitoring and evaluation of strategies related to development of Responsible tourism is necessary to attain long-term development expectations (Johnsen et al. 2008). Lew (2017) has advocated the planned and arranged place making approach to keep the track of performance in shaping the visions into actions.

(A) Adequate Representation of Interests of all Stakeholders to avoid conflicts and complexities

The active participation of all the stakeholders with strong involvement is required to enhance the responsiveness towards environment and tourism service sector (Gossling, 2002; Difoggia and Lazzarotti, 2012). The stakeholders act as the pillars of Responsible tourism and are required to be bestowed with the opportunity to participate in the decision making process about development of tourism industry keeping an account of the environmental perspectives (Hall and Lew, 2009; Reid, 2003; Johnsen et al., 2008).

(T) Technological Innovativeness and Self Sufficiency in Tourism Sector

Government is required to dispose off funds to the public and the authorized agencies to stimulate the Research and development initiatives in tourism service sector to promote the Reusability, Renewability and Replenishment of environmental resources(Timothy, 2009; Hulbin et al., 2012). The entire process is to be designed in such a manner to improve the accessibility of research to pump the self-sufficiency among the concerned thespians (Hudson and Miller, 2005). Constant reshuffle and reinvention in the existing infrastructure is substantial to stimulate the self-sustaining system of the nation (Rogerson and Rogerson, 2014; Rogerson and Rogerson, 2017; Rogerson, 2018).

As mentioned above (Figure No.1), the PISSAT framework defines the (P) Proper implementation of Environmental and Social resources to upgrade the physical attributes and create more social as well as economic opportunities by creating awareness among people (Lew and Cheer, 2017; Richards and Wilson, 2006; Richards, 2011; Richards, 2014; Scheyvens, 2001). Government authorities must allow the private businesses to flourish on the solo basis by reconciling short and long span benefits (Morucci and Curcic, 1990). (I) stands for the Introduction of the National Tourism Policy at all the levels in the nations, as United Kingdom has devised the cost-effective and programme-based approach to reframe the Comprehensive and Integrated National Strategy of Tourism and translate into national and regional level development policy (Goodall, 1987).Both national and international Policy makers with creative ideology are required to strive industriously in order to revamp the tourism policies (Barnett, 2008; Hall and Brown, 2008). Government authoritiesmust maintain their higher level of involvement in the tourism as per security and safety perspective to combat the evils arisen out of global movers (O'Connor et al., 2008).

(S) stands for Stimulating the active involvement of all the stakeholder through Formal education and Training Programmes, as United States and Israel havemade tourism a wider platform asa means of environmental protection and preservation using special tourism programmes embedded in Secondary and University education (Gartner, 2002), with prime emphasis on conferences and discussions to raise the worldwide active involvement of all concerned stakeholdersto promote fair tourism practices(Richards, 2000).Tomljenovic et al., (2013) emphasized on the requisite of monitoring the ideologies of local stakeholders in order to ascertain the problems at the initial phase and concoct the suitable strategies to reduce the conflicts among them to make the destinations enchanting. Balancing the interests of all stakeholders must be worked out at all the levels to address and redress the challenges in context to the tourism development (Larderel, 2003). Byrd et al., (2008) supported the vision of involving Grass root governments to utilize the economic development funds for the environmental education programmes and protect the environment. The learning aspect should be engaged with tourist experience enabling the localities polish their interactive skills and professional status to act as bridge between the tourists and local area (Tomljenovic et al., 2013). They can enable the tourists to have wonderful experience of sight and knowledge about the destination as well as enable them to make contributions towards approaching value changes (Cohen, 1985). The integration of training programmes regarding to enhance sustainable practices in tourism with University education is need of the hour (Hall and Brown, 2008; Byrd et al., 2008).(S) depicts the Systematic Review and Audit of Environmental and Tourism Management system and strategies. Bruce et al., (2001) have advocated the standardization and Constant review of the Environmental policies in European Historic towns.(A) implies Adequate representation of interests of all stakeholders to avoid conflicts and complexities. Wilson et al (2001) and Byrd and Gustke (2007) have propagated the representation of interests of all the stakeholders to muster their support as foundation for assuring tourism development on sustainable and responsible grounds. Byrd et al., (2008) assured that the stakeholders'active participation in necessary for effective conscious decision making in context to tourism development. (T) mentions the technological innovations and self-sufficiency in tourism sector. Government could redesign the entire system of technology and reintroduce the system of self-sufficiency by facilitating the green investment among the potential seekers. Technology based tourism is to be promoted by creating linkages among local cultures, ecosystems and historical heritage.

Hence, The 'PISSAT' framework lays an overview of necessary interventions, which could act as foundation for the long term survival, environmental benefits, economic gains, social sustainability and innovativeness in the domain of tourism industry with mere introduction, acknowledgement and implementation of the 'Responsible' measures at all the levels and among all the stakeholders.

1.7 Discussions and Conclusion

The key insights of the study directs the developing nations about the significance of applying adequate interventions in terms of beingactively indulged and responsive towards the society and environment. Moreover, the Government and Non Government Organizations (NGOs) to enhance the service delivery among their staff members as well as the volunteers. Hence, this paper represents the findings of a well-systematized review that could be used to build as well as strengthen the role of multiple stakeholders, which can become a competitive advantage. The findings of the study reveal that the phenomenon regarding the Responsible tourism is evolving and the concerned stakeholders in the developing nations must leverage the information system sprouting out of the Responsible tourism adoption in order to disseminate the real time information, better knowledge of available resources, enhance the business metrics and develop the insights for future decision making. The findings of study contended the possibility of several prospects to explore and conceptualize the multivariate nature of Responsible tourism. It is also imperative to have an adaptable conceptual framework in order to generate and sustain the eco-friendly prospects in a systematic manner in this very research domain. Hence, it is corroborated that the future research could be able to create explanatory theoretical framework by encompassing all the related aspects for increase in knowledge in the very stream. To be more specific, the future research could be exploring more topics like stakeholders perspectives towards Responsible tourism, Environmental values, Relationship between Responsible tourism and Economic aspects, which have a significant effect on the implementation of steps related to Responsible tourism.

The review and framework proposed in the present research would offer a magnificent and fruitful beginning point for the development of enhanced insight into the aspects relating to emerging research in the field of Responsible tourism. The lessons learnt from the application of various strategies in the Developed nations can not only apply to the tourism service sector, but also to the other domains of service industry to architect the ways and means suitable enough to collaboratively respond to the requirements of Environment and Economy. The Definitional aspects and the findings of the study could be used as a research agenda for the future in the evolving domain. The study is accompanied by the suggestive insights provided by the eminent scholars required to be undertaken some suitable measures to implement the various strategies related to Responsible tourism across the Developing nations (Tomljenovic et al., 2013; Larderel 2003; Barnett, 2008; Hall and Brown, 2008; Byrd et al., 2008; Morucci and Curcic, 1990; Cohen, 1985).

1.8 Practical Implications

The information provided by the study on certain aspects related to Responsible tourism would stand as significant understanding for the practitioners and educators in the tourism industry (Billington et al., 2008). The research would also enable the community decision makers, authorized officials and other stakeholders to have constructive dialogues and better interface over Environmental and Social aspects in collaboration with the Tourism concerns (Miocic, 2014).The results of the study would be helpful for the industrial practitioners to encounter the challenges faced by them in uplifting the Responsible practices in tourism sector and promote ethical decision making (Hudson and Miller, 2005; Hughes, 2005). The researchers would have an idea of ethical decision-making and frame dialogues while conducting research in the various domains in the service sector about representation of interests of various stakeholders (Archer et al., 2005; Holden, 2003). The study of responsible tourism would also allow the readers to have visual research about different aspects of tourism promotion in highly eco-friendly scenario (Rouff, 2019).

1.9 Limitations and Future Scope

Prior to the presentation of future scope for research of the present study, we are required to acknowledge certain limitations that study possesses. Firstly, a limited number of the databases was used for the research. Only the articles in English were chosen for the literature review. Future literature review on Responsible tourism related topic could engross more databases both English and non-English. Secondly, although the study used a systematic approach during the review of literature, but the selection of the papers related to the Responsible tourism was purely based on the subjective judgment. It would be more interesting to replicate our affirmations in future research.

We stress the significance of 'Responsible tourism' orientations and associated strategical issues as a domain in which further research is required on urgent grounds. The application of the suggestive interventions could ensure to replicate the sustenance in competitive environment and attain long term Environmental, Economic and Social benefits. The study would lay foundation for the research possibilities for academicians, environmental and social scientists to rediscover the models to ensure adaptability for transformations in tourism indices.

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ONE STOP CENTRE SCHEME: A STEP TOWARDS HOLISTIC WOMEN EMPOWERMENT

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ABSTRACT

Women Empowerment is a critical aspect in achieving gender equality, where both men and women have equal power and opportunities for education, healthcare, economic participation and personal development. Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world.Women's sense of self-worth, their ability to determine their own choices, and their right to influence social change for themselves and others connotes Women Empowerment. There has been progress over the last decades where more girls are going to school, fewer girls are forced into early marriage, more women are serving in Parliament and positions of leadership, and laws are being reformed to advance gender equality.However, despite a great deal of progress, women and girls continue to face discrimination and violence in every part of the world and India is no exception. India's journey towards Women Empowerment has its share of highs and lows. It has made gains by ratifying international conventions and formulating domestic policies intended to end gender inequality. The government has created the space for international agencies to work with state governments, local non-government organisations and private corporations on a plethora of projects/schemes to support women from different socio-economic backgrounds. One such schemeis called the OSC Scheme, that aims towards the all-rounddevelopment of the women. The present paper will discuss the significance of OSC scheme in detail.

Keywords: *Women Empowerment, gender equality, personal development, discrimination, domestic policies, projects/schemes.*

Introduction

Women empowerment in India is dependent up to a great extent on numerous different variables that encompass geographical setting (urban/rural), social status (caste and class), educational status, and age factor. Actions on the women empowerment exist at the state, local (panchayat), and national levels. However, women encounter differentiation in most sectors like education, economic opportunities, health and medical assistance, and political participation, which demonstrates that there are substantial gaps between strategy advancements and real exercise at the communitylevel.[i]

Women comprise around half of the country's population, and a bulk of them stays economically dependent on each other without employment. In the age of feminism, a small portion of women in India are freed and can employ their free will and are permitted to carve out their lives the way they want. But there is a considerable division of the women in this nation who require optimistic support. In most Indian villages and semi-urban cities, women are still denied fundamental education and are never authorized to continue higher education despite amassing the understanding required.

Women are known for delivering multiple roles effortlessly per day, and thus, they are considered the backbone of every society. Living in male-dominating societies, women play a wide range of roles, such as caring mothers, loving daughters, and capable colleagues. The best part is that they fit the bill perfectly in every role. Nonetheless, they've also stood as a neglected bunch of society indifferent parts of the world.[ii]

Women Empowerment is the ability of women to exercise full control over their actions. This means control over material assets, intellectual resources and even over their ideologies. It involves, at the psychological level, women's ability to assert them which has, so far, been constricted by the 'gender roles' assigned to them especially in a culture like India which resists changes.[iii]

Gender-Based Violence is a global issue that transcends class, geography, age, culture, religion and race to affect every country and community in the world. There are several forms of gender-based violence in India, including acid attacks, rape, dowry, child marriage, witch hunting, honour killing, child sexual abuse, sexual harassment, etc.[iv]

Women Empowerment Schemes in India

The following schemes have beenprovided by the Government of India for the safety and upliftment of Women:

1. Beti Bachao Beti Padhao Scheme.
2. One Stop Centre Scheme
3. Women Helpline Scheme.
4. UJJAWALA : A Comprehensive Scheme for Prevention of trafficking and Rescue, Rehabilitation and Re-integration of Victims of Trafficking and Commercial Sexual Exploitation.
5. Working Women Hostel.
6. Ministry approves new projects under Ujjawala Scheme and continues existing projects.
7. SWADHAR Greh (A Scheme for Women in Difficult Circumstances).
8. Support to Training and Employment Programme for Women (STEP).
9. NARI SHAKTI PURASKAR.
10. Awardees of Stree Shakti Puruskar, 2014 and Awardees of Nari Shakti Puruskar.
11. Awardees of Rajya Mahila Samman & Zila Mahila Samman.
12. Mahila Shakti Kendras (MSK).
13. NIRBHAYA.
14. Mahila police Volunteers.
15. Mahila E-Haat. [v]

A Brief Background to the Evolution of One Stop Centre Scheme:

1. One-Stop Crisis Centres were recommended to be established by the 12th Plan Working Group on Women's Agency and Empowerment.
2. In 2013, Usha Mehra Commission submitted a report stating the need for a One-Stop Centre at a notified hospital to help a victim of sexual assault.
3. In 2015, the One-Stop Centre scheme was implemented.
4. One-Stop Centres have been established across the country in a phased manner:
   - Phase I – 1 One Stop Centre per state/UT
   - Phase II – 150 additional One Stop Centres in 2016-17
5. As of July 2019 data, 462 one-stop centers have been set up:
   - The highest number of one-stop centre – Uttar Pradesh (75), followed by
   - Madhya Pradesh – 51 latest
6. A fund of Rs.74 crores has also been announced by the government under the Nirbhaya fund for rape victims who are minors
7. Administration of the Scheme:
   - At the national level, Ministry of Women and Child Development would be responsible for budgetary regulation and administration
   - At the State level, the Department of Women and Child Development will be responsible for the overall direction and implementation of the scheme.[vi]

Need of One Stop Centre Scheme

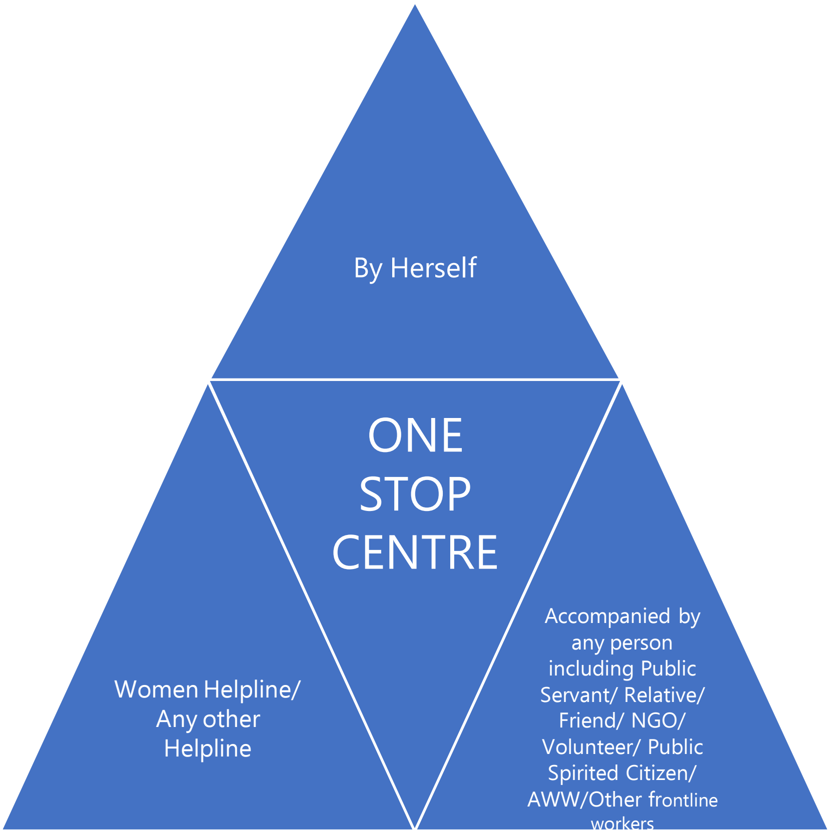
The OSC will support all women including girls below 18 years of age affected by violence, irrespective of caste, class, religion, region, sexual orientation or marital status. For girls below 18 years of age, institutions, and authorities established under the Juvenile Justice (Care and Protection of Children) Act, 2000 and the Protection of Children from Sexual Offences Act, 2012 will be linked with the OSC.[vii]

The scheme is also popularly known as ***Sakhi.***

- It is a sub scheme of umbrella scheme for National Mission for Empowerment of Women including Indira Gandhi Mattritav Sahyaog Yojana.
- One stop centre, will be established across the country to provide integrated support and assistance under one roof to women affected by violence, both in private and public spaces.
- **Funding**: The scheme is funded through Nirbhaya Fund and the central government provides 100 per cent financial assistance to the state governments /Union Territories administrations.
- **Auditing**: Audit will be done as per Comptroller and Auditor General of India norms and social audit will also be undertaken by civil society groups.[viii]
- **Services**: One stop centres will be integrated with women helplines to provide following services:

S.no	Type of Service	Description
1	Emergency response and rescue services	OSC will provide rescue and referral services to the women affected by violence. For this, linkages will be developed with existing mechanisms such as National Health Mission (NHM), 108 service, police (PCR Van) so that the woman affected by violence can either be rescued from the location and referred to the nearest medical facility (Public/ Private) or shelter home
2	Medical assistance	Women affected by violence would be referred to the nearest Hospital for medical aid/examination which would be undertaken as per the guidelines and protocols developed by the Ministry of Health and Family Welfare
3	Assistance to women in lodging the FIR/NCR/DIR	The OSC will facilitate the lodging of FIR/NCR/DIR.
4	Psycho-social support and counselling.	A skilled counsellor providing psycho-social counselling services would be available on call. This counselling process will give women confidence and support to address violence or to seek justice for the violence perpetuated. Counsellors shall follow a prescribed code of ethics, guidelines and protocols in providing counselling services.
5	Legal aid and counselling	To facilitate access to justice for women affected by violence, legal aid and counselling would be provided at OSC through empanelled Lawyers or National/State/District Legal Service Authority. The aggrieved woman would be provided with an advocate of her choice in case she wants to engage the same to assist the State Prosecutors in trying her case. It would be the responsibility of the Lawyer/Prosecutor to simplify legal procedures for the aggrieved woman and advocate for her exemption from court hearings. In case the trial or inquiry relates to an offence of rape as defined under section 376, 376A-D IPC, it would be the duty of the Prosecutors trying the case to complete the inquiry or trial as far as possible within a period of two months from the date of filing of charge sheet.
6	Shelter	The OSC will provide temporary shelter facility to aggrieved women. For long term shelter requirements, arrangements will be made with Swadhar Greh/Short Stay Homes (managed/affiliated with government/NGO). Women affected by violence along with their children (girls of all ages and boys up till 8 years of age) can avail temporary shelter at the OSC for a maximum period of 5 days. The admissibility of any woman to the temporary shelter would be at the discretion of Centre Administrator.
7	Video conferencing facility.	To facilitate speedy and hassle free police and court proceedings the OSC will provide video conferencing facility (through Skype, Google Conferencing etc.). Through this facility if the aggrieved woman wants, she can record her statement for police/ courts from OSC itself using audio-video electronic means as prescribed under sections 161(3), 164(1) and 275(1) of the Code of Criminal Procedure and section 231(1) in line with Order XVIII Rule 4 of the Code of Civil Procedure. This facility will be provided only after consultation among Superintendent of Police, District and Sessions Judge of the concerned district (place of incident).

***Source: OSC guidelines* Accessing One Stop Centre**



A woman affected by violence can access OSC in the following manner:

- By herself; or
- Through any person including any public spirited citizen, public servant (as defined under section 21 of Indian Penal Code, 1860), relative, friend, NGO, volunteer, etc., or
- Through Women Helpline integrated with police, ambulance and other emergency response helplines.

As soon as the complaint is registered a text message (SMS/Internet) would be sent to the DPO/PO/CDPO/ SHO/ DM/ SP/ DYSP/CMO/PO of the district/area as required. When an aggrieved woman approaches the OSC for help either in person or if anybody approaches on her behalf, the case details will be fed into a system as per the prescribed format and a Unique ID Number will be generated.[ix]

Objectives of the Scheme are:

(i) To provide integrated support and assistance to women affected by violence, both in private and public spaces under one roof.

ii) To facilitate immediate emergency and non-emergency access to arrange ofservices including medical, legal, psychological and counselling support under one roof to fight against any forms of violence against women.

Location of One Stop Centre

For establishing a Centre, the first preference would be to consider proposals where suitable and adequate accommodation with separate access having at least 5 rooms and carpet area of 132 sq.m. within a hospital / medical facility, that is prominently visible and easily accessible to the women affected by violence is available. For this purpose the staff quarters within or outside the premises of the hospital may also be used.

If it is not possible to locate accommodation within a hospital or medical facility, then an existing Government/Semi Government institutions/ Women Institutions/Swadhar Grehs/Working Women Hostels located within 2 km radius of the hospital/medical facility in the district headquarter having adequate accommodation with separate access may be preferred for operating the Centre.

If it is not feasible to locate the Centre in the existing accommodation, the Centre may be constructed on adequate land either within hospital/medical facility or within 2 km radius of the hospital/medical facility. The requirement for construction of building of Centres will be assessed, after taking into account of non-availability of existing accommodation. The Centres may be constructed on suitable land having at least an area of 300 sq.m. as identified by the State Government.

Only when Government buildings are not available and land is made available by the State Government, permanent OSC may be constructed. The OSC, MSK, Women Helpline, etc., are to be co-located as far as possible to enable coordination, convergence and cost efficiency.

The States that opt for OSC construction are required to make the OSC operational in Temporary Locations within three months from the release of the funds for the OSC in the respective District. States opting for construction will not be given the grant for refurbishment of existing building. For temporarily setting up OSC Rs.1.00 Lakhs of non-recurring contingency grant shall be used for refurbishment of the temporary accommodation.

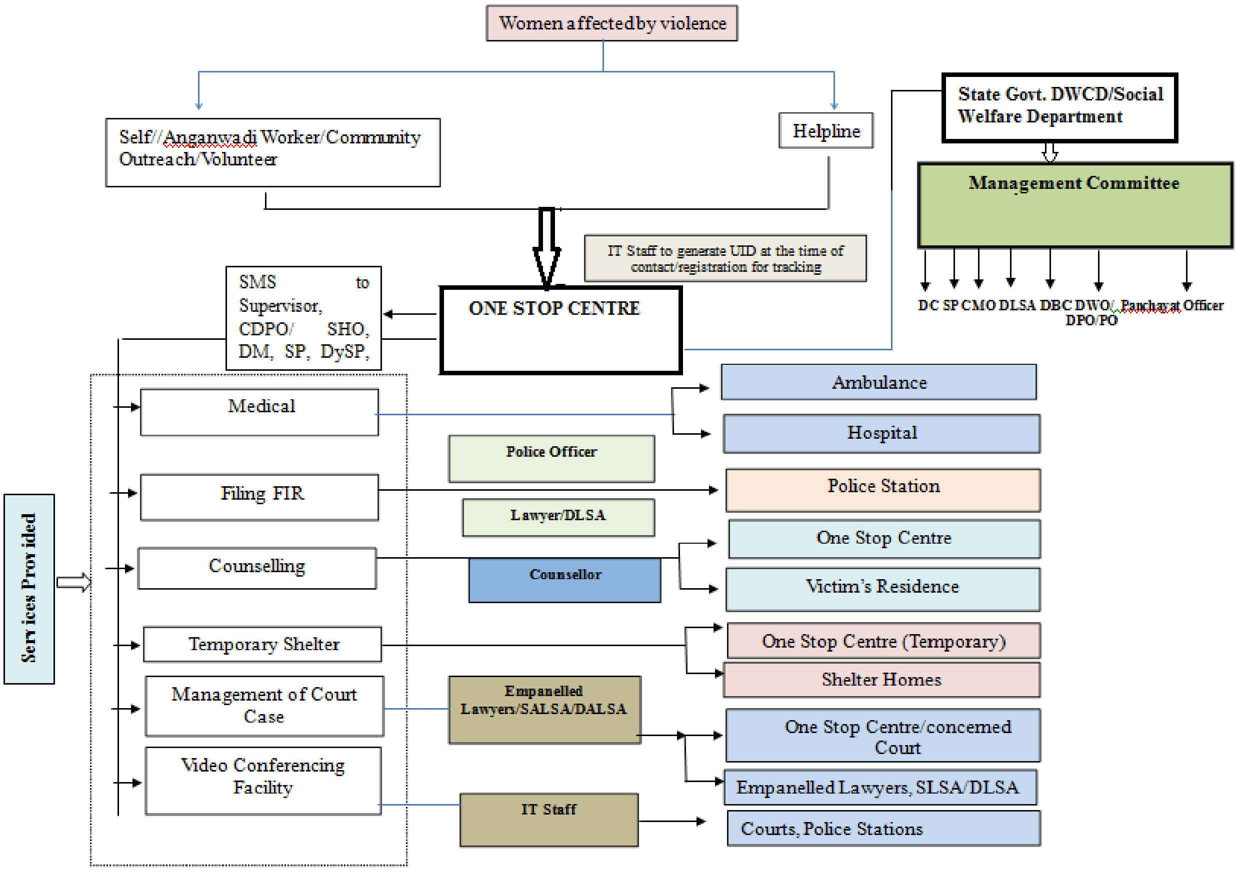
Training and Capacity-building

For implementation of the scheme, the National Institute of Public Cooperation and Child Development (NIPCCD) is organizing training programmes for Master Trainers at its Regional Centre who will further train other functionaries. Further, the National Institute of Public Cooperation and Child Development (NIPCCD) has developed a module for Master Trainers and functionaries associated with One Stop Centre to equip the master trainers with necessary skills to further train other functionaries by providing step-by-step guidance on assisting the women affected by violence.

The States/UTs may request NIPCCD to provide induction training to all the personnel involved in the functioning of OSC in the respective State/UTs. Towards fulfilling this objective, the State will coordinate with its various departments so that people providing services at OSC and those belonging to various departments can be sensitized and trained in handling the issues related to violence against women.

The District Collector/District Magistrate will provide induction training to all the personnel involved in the functioning of OSC. Towards fulfilling this objective, the District Collector/District Magistrate will coordinate with its various departments sothat people providing services at OSC and those belonging to various departments could be sensitized and trained in handling the issues related to violence against women. District Collector/District Magistrate will involve agencies, civil society groups, Mahila Police Volunteers (wherever available), Village Convergence and Facilitation Service (wherever available), community based groups, institutions or resource persons for imparting education of the services mentioned above and for training the staff. These will be selected by the States/UTs in consultation with MC based on the accessibility and availability of these organizations at the field level. Besides, Gender Cells, Women's Studies Centres in Universities could also be involved to provide technical inputs in terms of training and capacity building for women affected by violence. [x]

Diagrammatic Overview of One Stop Centre: Human Resource And Services



Source: OSC guidelines

Latest News on OSC Scheme

The Ministry of Women and Child Development (WCD) announced on 25th May 2021 that it will set up One-Stop Centres (OSC) — the Ministry's scheme aimed at supporting women affected by violence in public and private spaces — in foreign missions in collaboration with the Ministry of External Affairs. The first 10 OSCs will be introduced in Australia, Canada, Singapore, Bahrain, Kuwait, Oman, Qatar, UAE, and Saudi Arabia.

Senior officials in the ministry pointed out that the countries have been identified by the MEA based on the Indian diaspora population and that these centres will be run by the MEA, though they will be funded by the WCD Ministry.

"This is to help women overseas, who are victims of violence or are simply stuck due to particular situations. They can now approach these centres for immediate as well as non-immediate support including legal aid, medical support and counselling," said a senior official.[xi]

Conclusion

Thus One Stop Centre Scheme is a comprehensive scheme of the Central government which is intended to support women affected by violence, in private and public spaces, within the family, community and at the workplace. Women facing physical, sexual, emotional, psychological and economic abuse, irrespective of age, class, caste, education status, marital status, race and culture will be facilitated with support and redressal. Aggrieved women facing any kind of violence due to attempted sexual harassment, sexual assault, domestic violence, trafficking, honour related crimes, acid attacks or witch-hunting who have reached out or been referred to the OSC will be provided with specialized services. Therefore, it is a step towards stopping harassment of women and providing better disposal of their complaints at the earliest and in a most effective manner.[xii]

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vi https://byjus.com/free-ias-prep/one-stop-centre-scheme/

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viii https://www.drishtiias.com/daily-updates/daily-news-analysis/one-stop-centre scheme

ix Ibid.

x OSC guidelines

xi https://indianexpress.com/article/india/to-help-women-hit-by-violence-centre-plans-one-stop-centres-in-9-countries-7330319/

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ENHANCING PARTICIPATION IN PERMISSION MARKETING

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ABSTRACT

Permission marketing is getting permission from consumers to send promotional messages and their participation. The research focuses on the participation of consumers towards permission marketing and that is very much in practice in developed countries. Mass advertising to attract customers can be cluttered by this approach and marketers also go by the core principal of marketing,"targeting the right customer". This is easier because of technology support. The success of participation in permission marketing depends on customers' computer self-efficacy, risk taking attitude, attitude towards e-mail, promotional mails, risk perception on web etc.

Keywords: *Computer self-efficacy, Attitude towards e-mail, Attitude towards promotional mail, Usefulness of web, Risk taking, Risk perception, Message relevance, Compensation, Privacy.*

Introduction

Godin and Seth (1999) came out with a new idea of consumers providing permission to receive promotional messages and there by mass advertising can be cluttered and reach the target customer suitably and make the e-advertisement more effective. Interest of customers is collected by requesting to fill questionnaire when they register for a service. Through permission marketing the core principal of marketing – targeting the right customers can be easily enabled (Smith 1956). Permission marketing mainly depends on Internet because the cost of marketer-to-consumer communication is low and a rapid feedback mechanism is feasible. High degree of connectivity between a company and its customers, suppliers and channel partners facilitated by the Internet may be an indication of networked business model. Permission marketing is based on consumers' computer self-efficacy, attitude towards e-mail, attitude to promotional material, perceived usefulness of web, risk taking attitude, risk perception on web, message relevance impact, compensation, privacy, message processing and personal information entry and modification.

Need for the Study

Privacy is one that important for most of the individuals. The e-information simplifies the process of search. Some consumers feel such information are waste for them. The information seeking site also makes customers to participate in marketing programmes even sometimes with incentives. This paper brings out a permission marketing model explaining how various Web characteristics influence respondents to participate in permission marketing programmes. This area is still unfolding, and so, there is need for this study.

Problem Statement

Marketing information providers presently post information without focus. This approach is not effective. In India also, future will be on permission marketing and where the information providers target specific people, motivate them to participate. Based on this there will be effective by them and only interested will support in sharing information and this will be highly useful for the marketers. Marketers may not be aware of what sort of people will be interested in this exercises and hence this attempt to have the framework for Indian scenario.

Review of Literature

Godin Seth (1997) claims that no longer advertising work as it used to. In the new world of clutter with 100 TV channels, 1 million Web sites and 3,000 marketing messages per day per consumer and the rules have changed dramatically. Consumers are far more likely to purposely ignore your message than remember it. Nagaraj (2003), mentioned that web bloggling is a social activity of discussing on the topic of interest, criticize, comment each other, organize virtual conference which popularizes the less known people, etc. Company can create a community around the

Blog which help in creating a good chance to create good word of mouth communication. Moreover, Miline (2000) found that there is recognition to improve direct marketing relationships is not just a reduction of privacy concerns of individuals, but rather an improvement in the consumer's trust of the marketer. Permission Marketing (1999) has the five levels of permission. The goal of the Permission Marketer is to move consumers up the permission ladder, moving them from strangers to friends to customers. And from customers to loyal customers. At every step up the ladder, trust grows, responsibility grows, and profits grow. The Five Levels of Permission are Intravenous (and "purchase-on-approval" model), Points (liability model and chance model), Personal relationships, Brand trust and Situation.

Objectives

The objective of the study is;
To figure out the influence of computer self-efficacy, Attitude towards e-mail, Attitude to promotional material, perceived usefulness of web, risk taking attitude, risk perception on web, message relevance impact, compensation, attitude towards privacy, impact of message processing and personal information entry and modification on permission marketing participation.

Hypothesis: This study has above listed eleven independent variables and the dependent variable being participation in permission marketing.

H0: There is no influence of the eleven independent variables on the dependent variable.

Research Methodology

This is a descriptive research explaining the influence of the net based attitude of respondents towards their willingness to participate in permission marketing. This is cross-sectional because, the data was collected once only from a set of respondents. Pre test was executed to identify the related variables; for this purpose thirteen variables were considered and eleven were significantly found to be related. The two variables which were not contributing significantly were omitted for final study. They are: Adoption behavior towards e-mail and privacy under various situations. A pilot study was conducted to validate the tool and also to ensure the reliability. There is no specific guideline to select the sample size in structural equation modeling. Hayduk recommends sample size between 50 and 500 to test the model. Large sample size tends to inflate the value of thus rejecting an otherwise acceptable model. Anderson and Gerbing recommend minimum sample size of 150 for models that include 3-4 indicators per variable. The
sample size was decided to be 275. The tool for data collection was described below;

S. No.	Variable Name	Author
1.	Computer Self-efficacy (CSE)	Compeau et al (1995)
2.	Attitude Towards e-mail (ATE)	Kay (1993)
3.	Attitude to Promotional Material (APM)	Eric (1998)
4.	Perceived Usefulness of web (PUW)	Agarwal and Prasad (1997)
5.	Risk Taking Attitude (RTA)	Self Developed
6.	Risk Perception on Web (RPW)	Gerbing & Anderson (1998)
7.	Message Relevance Impact (MRI)	Self Developed
8.	Compensation (COM)	Self Developed
9.	Attitude Towards Privacy (ATP)	Kim Partel (2002)
10.	Impact of Message Processing (IMP)	Self Developed
11.	Personal Information Entry & Modification (PIE)	Self Developed
12	Permission Marketing Participation (PMP)	Self Developed

Most of the tools were adopted and this being standardized and hence, reliability and validity got ensured. For self developed tools, the reliability and validity are given below:

S. No.	Variable	α value	CVR
1.	Risk Taking Attitude (RTA)	0.89	1.00
2.	Message Relevance Impact (MRI)	0.81	0.75
3.	Compensation (COM)	0.88	1.00
4.	Impact of Message Processing (IMP)	0.84	0.75
5.	Personal Information Entry & Modification (PIE)	0.91	0.75
6.	Permission Marketing Participation (PMP)	0.92	1.00

Findings

Discriminant analysis was applied using SPSS to find out the consumers' possibility of participating in the permission Marketing. The models capability in predicting the consumers' participation is in the table 1.

Table I Permission Marketing Classification

	Permission participation	Predicted		Total
		Participate	Hesitate	
Observed	Participate	158	26	184
	Hesitate	5	86	91

Source: Primary data computed

Among the total sample of 275, (26+5) were not fit in this prediction because they were predicted to be hesitant but observed to be participating and otherwise. In this discriminant function, the remaining 244 respondents were fit into the model representing 88.73 per cent representing high level of prediction

Table 2 Test function - Wilks' Lambda

Test of Function(s)	Wilks' Lambda	p
1	.42721	.001

Source: Primary data computed

The statistical significance of the Discriminant function is made from the Wilkis' lambda Wilkis' lambda value ranges from 0 to 1 and in this case it is 0.427 and it is less than 0.5 and so this model ensures better discriminating power. The P-value indicated that the significance level is much less than 0.00 and acceptance level is 99.9 per cent.

Table 3 Canonical Discriminant Function Coefficients

Variables	Function
	1
Computer self efficacy	.012
Attitude towards e-mail	.005
Attitude to promotional materials thru e-mail	.004
Perceived usefulness of web	-.200
Risk taking attitude	-.253
Risk perception on web	-.097
Message relevance	.833
Compensation	.178
Privacy	.035
Message processing	-.257
Personal information entry and modification	.888
(Constant)	-14.402

Sig. at 1% level. Source: Primary data computed

From the above table it was observed that all the variables are significant at one per cent level. The highest predictor is personal information entry with the coefficient of 0.89 followed by message relevance by 0.83. Perceived usefulness of the web, risk taking attitude, risk perception on web and message processing are negatively related and these variables relationships are significant but, it is low because the coefficient values are around 0.2. Giving compensation motivates the respondents that found to have the coefficient of 0.18. Other variables such as computer self-efficacy, attitude towards e-mail, promotional material, and privacy are at the least level and their coefficient values are lesser than 0.1.

Table 4 Functions at Group Centroids

permission marketing participation	Function
	1
Participating	.322
Non-Participating	-.601

Source: Primary data computed

Classification of new consumers as Participating or non-participating can be made out by plotting on a line of scale from -0.601 to 0.322. If the discriminant score of a consumer falls to the left of the midpoint we can classify as participating and if it falls on the right he can be non-participating.

(PMP) Y = -14.402+0.888(PIE) - 0.257(IMP) + 0 .035 (ATP) + 0.178 (COM) + 0.097 (RPW) - 0.253(RTA) - 0.200 (PUW) + 0 .004 (APM) + 0 .005 (ATE) + 0.012 (CSE) + 0.833 (MRI)

Suggestion

To enable an individual to take part in permission marketing, the system should ensure easy personal information entry and modification and usefulness of the message. Apart, there is need to motivate them by making some compensation. Also, there is need to ensure that participation is not risky, message processing is at ease. A person with much risk taking attitude in general will be participative.

Conclusion

All the eleven variables are significantly contributing and most importantly personal information entry and usefulness of the message. There are few negatively impacting variables that are also significant. Compensation really motivates to enable the people to participate.

Managerial Implications

This will help in advancing theories of marketing to incorporate interactive medium in decision making, problem solving and information search models. Firms may design strategies to market to technology-savvy and technology averse consumers, deciding what payment mechanism can be incorporated in their marketing mix and what are the products that are most amenable to be sold on the Web through permission marketing. In total with this model a marketer can identify a person who will be interested to participate in permission marketing or not.

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EMERGING TRENDS IN E-BUSINESS

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ABSTRACT

In the last several years, e-business has seen a lot of transformations. Companies now have access to new markets and customers thanks to the Internet. Customers have found e-commerce to be a useful tool for researching and purchasing items and services. Since the inception of e-business, things have evolved dramatically and will continue to do so in the future. E-Business initiatives must be linked to the organization's overall business strategy and guided by a specific set of objectives and measurement criteria. The developing tendencies of e-business in numerous domains are discussed in this article. It also gives an outline of the advantages and pitfalls of doing business online.

Keywords: *Emerging Trends, E-Business, E-commerce, Emerging Trends*

I. Introduction

One of the major things that has grabbed the Indian business world by storm is e-commerce. It is spawning a brand-new economy with enormous potential that is radically altering the way enterprises are conducted. It benefits both buyers and sellers, and this win-win arrangement is at the heart of its meteoric ascent. Consumers across the country are finding online shopping more appealing and convenient as their earnings rise and the choice of goods and services available expands.

As part of the information technology revolution, electronic commerce (e-business) has become widely used in global trade in general and the Indian economy in particular. E-business represents the cutting edge of success in this digital age as a sign of globalisation, and it has transformed and continues to revolutionise the way business is conducted around the world.

The e-business paradigm, which combines the Internet with an organization's traditional information systems (Web & Information Technology), can improve fundamental business processes that are the foundation and soul of a company. Interactive, transaction-intensive, and allowing a resume of business into new markets are characteristics of applications based on e-business concepts.

II. Emerging Trends In E-Business

Traditional or brick-and-mortar firms are largely product-centric, with product differentiation and innovation typically serving as competitive advantages. E-businesses, on the other hand, place a strong emphasis on customers and take a customer-centric strategy. Companies used to make items and customers would buy them in the old manner of doing business. Customers, on the other hand, are now active participants in the product design process, often dictating terms to producers and deciding on product characteristics.

Organizations have been pushed to digitise their operations as the usage of electronic media for conducting commercial and government transactions has grown, as has the popularity of the Internet among individual customers. Emerging e-business and mobile technologies, as well as increased broadband telecommunications availability, have accelerated their transformation into e-enabled businesses. E-business has aided in the expansion of industries and telecommunications, allowing small enterprises to thrive and develop globally. This new mode of communication has spawned a slew of new trends, some of which are listed below:

Consumer Preferences:

Increase the speed with which services are delivered. (Customer service speed is measured by the number of times a customer is served in a certain amount of time , Customers despise delays, and time is money, What does this trend indicate for e-commerce?)

Empower your client. (The concept of intermediary is being challenged by self-service.Computer configuration, travel, and real estate)

Provide Integrated Solutions rather than Piecemeal Solutions. (Solution for selling a product
Combination of Products, Shopping in a single location , Why is there a delay?)
Consumers don't need another store or another electronic distribution channel; they need firms that provide comprehensive answers to their concerns in one place.

• *Service/Process Developments*

Integrate your sales and services. (Customization and integration are two of the most important aspects of the service. Recruiting, acquiring, using, and retaining talent , Revenue generation through cross-selling and up-selling ,Providing pre- and post-sale support , To close the gap between sales and services, a new e-business model should be devised.)
easiness of use(Ensure that client service is consistent and dependable , Time and service speed , Services that are friendly and simple to use , Part of the organisation are partners and vendors , Information about customers being shared)
Rather of focusing on departmental solutions, businesses should deploy integrated applications that address the complete client relationship.
Ensure that fulfilment is flexible (Service Delivery that is Convenient , Demands for a unique product , Delivery to your home and additional services , Getting the right products to the right people)
E-commerce has made supply chain management, software implementation, and inventory wastage a thing of the past.

• Organizational Developments (Manufacturing Under Contract , Invest in your brand rather than your wealth , to concentrate on their strengths , concentrating on new items , Brand management , increasing market share , To spread out the risk , Getting more with the bare minimum of assets , Technology is being used to divide marketing and production , Continually changing product offerings ,Keeping costs to a bare minimum)

Learn how to outsource. (The operation's complication,Market regulations and deregulation
The market's steady/rapid change,Constant expansion is a condition that necessitates core expertise in a large number of functional domains.)

• Business Technology Trends
Enterprise applications assist businesses in connecting disparate systems, increasing access to information, and connecting employees, partners, and customers more closely.

III. The Benefits Of E-Commerce

• Marketing at a Low Cost
All of your marketing efforts for an e-business are aimed at driving targeted traffic to your company's website. You may utilise numerous online marketing strategies, such as email marketing, article marketing, social media networking, and e-newsletters, because you have one single location to bring customers to your e-business website. Because the majority of these online marketing activities are low-cost or free, an e-business enables highly cost-effective marketing methods.

• Hours of operation that are flexible
According to e-Commerce Education, e-business eliminates the time constraints that location-based enterprises have. Your business never closes since the Internet is open 24 hours a day, seven days a week. An e-business can literally generate revenue while you are sleeping.

• Removes Geographical Barriers
You can also expand your reach with an e-business. Customers from the four corners of the globe can access an internet business. You may be able to reach and sell your product or service to visitors to your business website as long as they have an Internet connection.

• Lowers transaction costs
Because it takes less labour to perform an online transaction, running an online business lowers the cost per transaction. In comparison to a brick-and-mortar firm, an e-business transaction has a lower cost burden on the business, making each transaction more cost effective.

• Improves customer service efficiency
Customers want quick responses when they contact you. E-businesses can easily meet this

need thanks to email and live chat technologies. Furthermore, these flexible types of customer care might extend beyond the hours of operation of a physical store. E-commerce also provides the convenience of sending things directly to a customer's front door, eliminating the need to brave traffic.

• Lower Investment Requirements and Ease of Formation Unlike a long list of procedural procedures for starting a firm, starting an e-business is rather simple. The advantages of internet technology accrue to both large and small businesses.

IV. The Difficulties of Doing Business On The Internet

Several businesses have adopted e-commerce as a result of the quickly changing business environment. The way businesses operate has changed dramatically as a result of e-business. It also presents them with obstacles that they must overcome in order to realise the benefits of e-commerce. Businesses face a variety of obstacles, including technology issues, legal and regulatory issues, behavioural and educational issues, and other issues. The difficulty in regulating and enforcing standards due to a lack of clear rules and policies; customs and taxes uncertainty; and government interference are all challenges related with the legal and regulatory environment. Consumer sentiments shift, posing behavioural issues for firms. Customers' lack of trust and their concern of privacy invasion are among the issues that make them hesitant to engage in e-transactions. Furthermore, businesses face a problem due to widespread Internet fraud and a lack of understanding among clients about the availability of services. Other issues that have become a source of concern for organisations include channel conflict, the problem of acquiring and retaining a critical mass of customers, and the need to enhance the order fulfilment process. The following are some of the most significant e-business challenges:

• *Distribution models that are out of date*
Many companies still use an antiquated distribution mechanism. For online enterprises, traditional distribution approaches aren't always the ideal option; they require a flexible model with seamless technology integration. Integration is critical since it allows for accurate inventory management and high operational efficiency.

• *Inefficiency in the process*
It's all about smooth operations and a commitment to data analysis when it comes to efficiency. It's all about refining retail procedures to add value to customers. Stagnation and frustration are the results of inefficiencies. In B2B, merchants frequently struggle to let go of traditional processes such as paper purchase orders; we need to embrace new technologies.

• *Consumer choices that are ethical*
Consumers are returning to more local, real companies that provide a more genuine experience in the frantic age of automation and mass production. In the ideological war for the consumer, mission statements, values, corporate social responsibility, and cooperating with ethical suppliers will become increasingly crucial.

• *Not putting money towards the future now*
Following e-business is a thrilling journey filled with cutting-edge technologies. Brands that wish to endure the test of time must be prepared for the influence of technology on customer experience, marketing, and operations, among other things. Companies must invest in new methods of doing things in order to prepare for the paradigm change. Today's technology is tomorrow's tool.

V. Conclusion

From the standpoint of a business process, e-business is defined as the use of technology to automate company transactions and work flow. E-business is a new type of online commerce with no borders, a new approach to global clients, new business models, new tactics, and new payment mechanisms. If a firm wants to be profitable in new markets, its employees must be familiar with the procedures for implementing the necessary tools and technologies. As a result, all existing professionals should be capable of managing successful initiatives that adapt to market business needs.

E-business, on the other hand, is a sort of electronic trade and economic activity. A company with a network presence sells products or services on the Internet. The buyer normally pays with a credit card for a product that will be delivered to his door within a certain time frame. The term "e-business" refers to a procedure that includes web services and product promotion. Though e-business encompasses the complete firm, not simply e-commerce, it relies on the Internet to lower their entire value chain.

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AN OBSERVATIONAL STUDY ON GREEN MARKETING TRENDS IN CHENNAI CITY

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ABSTRACT

Green marketing is the marketing of products that are supposed to be environmentally safe. Marketing products and services built on environmental issues or awareness. Companies intricate in green marketing make decisions connecting to the entire course of the company's products, such as methods of processing, packaging and distribution. Green marketing can demand to a wide change of these issues: an item can save water, reduce greenhouse gas emissions, cut toxic pollution, clean indoor air and be easily recyclable. At the phase of competition, the more environmental marketing claims our product or service can make, the more likely it is the consumer will select it, provided the price point is not too much higher than the alternative. Studying the trends can give a guide to the manufacturer to concentrate on those areas to gain new consumers for their Green products. Making the right green product is not the end in itself it is to be informed through proper channel and using the right aid that may attract the consumers. The success of any Green product lies with this aspect. And finally the researcher has found the ways to improve the consumer appeal for Green products. Customer education and aggressive marketing is necessary. Green power marketers have offered a variety of products to appeal to customers with varying price sensitivities and resource preferences

Keywords: *Green Marketing, Toxic Pollution, Aggressive Marketing, Recyclable.*

Introduction

Market penetration rates beyond 10% are achievable if market conditions are fortunate to green power. Most markets, however, have experienced penetration rates of about 1% or less, similar to the United States. In general, green power markets are young and as is the case with most new markets, require time to develop. Based on our review, the following factors can aid in fostering the development of green power markets: violent and cooperative marketing efforts by utilities and competitive providers, incentives and other strategies that reduce the cost of renewable energy, reform rules that give priority to green power customers, market rules that enable competition to ensue, certification standards that encourage new renewable development, government purchases that stimulate demand, and consumer education that addresses the availability and benefits of green power options. Mother Earth speaks “I am now happy to see that some of my wise warriors have realized the effect of global warming and climate changes happening all around, causing distress in various ways, to you and me and are trying hard to make both of us clean and green.

Eco-Superior

Another consequence of the recession may be a decline in so-called “planned obsolescence” in certain types of consumer products. Clothing, appliances, tools and other products, that break down after just a few months or years of use not only cause frustration and aggravation, they are also hard on consumer's pocketbooks and with more consumers trying to cut back on unnecessary spending, expect to see more high quality, long- lasting products in stores. This won't just help consumers save money, it will also conserve resources and reduce waste, improving environmental sustainability. Many green businesses are already booming due to the rise in ethical consumerism around the world, and are well equipped to capitalize on this trend by developing innovative, “eco-superior” products that are not only greener than conventional alternatives, but also offer superior performance and durability.

Reduce, Reuse and Recycle

As concerns about waste and dwindling resources have grown, the three R's of green living have gained more attention from businesses that ever before and a grow, and a growing number of companies are developing creative solutions to reducing waste and resource consumption. One such is Recycle Match, which operates on the philosophy that one company's trash is another company's treasure. Recycle Match matches businesses that have waste products such as used vinyl billboards, polyester textile waste and salvaged building materials with businesses that need them. The business offering the waste materials has the opportunity to make money off something it would otherwise need to pay to dispose of the business receiving the waste materials get a lower price than it would if it sourced the product through traditional channels and both businesses are able to protect the environment by reducing resource consumption and waste. Founded in 2009, Recycle Match has already helped keep more than 3 million pounds of waste materials out of landfills. In addition to personalized recommendations from friends, many green consumers are increasingly savvy about "green washing" and seek out reliable Eco labeling information and similar resources to help them make informed decisions about green products and services. Although most eco labels are issued by nonprofit organizations, one way green businesses are capitalizing on the desire for reliable information is by turning retail stores into information resources that offer detailed information about the environmental impacts of particular products in the form of supplier scorecards or similar fact sheets.

Appealing To Green Consumers

Sensing the opportunity, many green products are now promoted with messages that lead "beyond green" and underscore such primary benefits as health, superior performance, good taste, cost effectiveness or convenience.

Organizations that Test and Structure Green Marketing

Thankfully, organizations such as the Federal Trade Commission (FTC) regulate some of the more popular green marketing claims in order to provide some way for consumers to compare apples to apples when considering one product against another. In addition to the FTC regulations, there are numerous third-party organizations and government bodies that serve to test and structure green marketing claims, including such things as the US National Organic Program, the Canadian Ecologo certification program, and the certified Vegan standard. The EcoLogo Program is a Type I eco-label, as defined by the International Organization for Standardization (ISO**).**

Strategy To Promote The Green Product

The impact of green power marketing on new renewable development has been limited so far. While price is not the only important driver of demand, companies offering lower priced products have generally obtained more customers. Retail competition can stimulate green power marketing activity. Many customers have purchased green power without switching suppliers. Certification and labeling programs can play an important role in shaping products. Government support can be an important facilitator of green power market development. DLF Global Forwarding and Emirates Sky Cargo has planned to partner to drive e-fright agenda across their networks which has the capability to save upto US $4.9 billion annually.

Objectives Of The Study

1. To study the marketers Responsibility with regard to Green Products
2. To analyze the respondent's response for goingGreen in day today life.
3. To study the important factors a marketing campaign should possess.
4. To analyze the degree of interest the manufacturers has in educating the consumers about Green Marketing.

Review of Literature

Number of researcher and study were done under Green Marketing and in a study by Accenture that polled people from Europe; Asia and North America; nearly nine out of 10 consumers were willing to pay more for green products (those that reduced green house gas emissions in particular). While the percentage of people willing to pay a premium for eco-friendly products will go up and down as times change. Environmental disasters increase awareness and interest in green products, for instance, while prosperous economic time's often dull interest in general, the market for green products and services is growing every year as people become more aware of the impact of their consumer choices.

Author**: Ina Landua in 2008** did a research on the topic "Gaining Competitive Advantage through Customer Satisfaction, Trust and Confidence in consideration of the Influence of Green Marketing" Research Question/Purpose: Due to ecological legislation, economic effects and increasing concern about the environment among the general public, today's businesses are becoming more committed to environmental issues. Some enterprises yet have implemented a green strategy. This thesis aims at identifying issues that determine the long term efficiency of green marketing and how confidence and trust plays a role in order to gain competitive advantage through customer satisfaction and customer retention. The common
denominator of both CRM and green marketing is the creation of confidence, trust and value for customers. So, focus is laid on actions that provide reliability to company's green marketing by interviewing experts and detecting their opinions about green marketing and eco-labelling.

Design/Methodology/Approach

Interviews conducted with company professionals from IKEA and KonsumGavleborg and a member of the municipality in Gavle, as well as findings from secondary sources of the company Nestle were used to investigate the company's ways to respond to environmental concern and how they deal with green issues and ecological responsibility. The interviews provide valuable insights of the success of green marketing depending on the confidence between company and customer.

Originality/Value

This work seeks to make a contribution towards bridging the ends of CRM and green marketing. It indicates a relationship between eco-orientation and company performance and implicates, on the basis of the theoretical and empirical findings, that integrating ecological features and good performance in a company is not impossible. Trust and confidence are as important concepts in green marketing as in CRM.

Pride and Ferrell (1993) Green marketing, also otherwise known as environmental marketing and sustainable marketing, refers to an organization's efforts at designing, promoting, pricing and distributing products that will not hurt the environment **Polonsky (1994)** defines green marketing as all activities intended to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these wants and desires happens, with nominal detrimental impact on the natural environment.

Kotler (2011) has also raised several important issues to explore in green marketing, such as factors leading companies to compete on the basis of sustainability, changes required in marketing practices and opportunities offered by the concept of sustainability, etc. Further, **Sharma et al. (2010)** has recognized that research on inclusion of active role of environmental is-sues in marketing is still in infant stage and the related discussions are limited to the disciplines of environment management, production, and supply chain, and thus in context of entire value chain. Hence, developing green marketing mix to examine the interface of marketing with other functions of management and business with their impact on the environment is the objective of the paper.

In contemporary business environment, marketing orientation is shifting to green marketing as firms' environmental actions and product offerings are now catering to eco-conscious consumers, and communicating their environmental actions to stakeholders and consumers **(Jones et al. 2008).**

Research Methodology

The sample size taken for the research is 50 and the random sampling method was used by the researcher. And the research design is descriptive research. The method of data collection is both the primary and the secondary data. Primary data collected through questionnaire. Secondary data includes books, magazines and internet. Quantitative methods were used for analysis of the data. The tools used for analysis includes percentage analysis, Chi-Square test and Weighted Average Method.

Marketing And The Natural Environment

Marketing is a broad term to represent the activi-ties facilitating exchanges between companies and consumers. It is described in terms of distinct organisational culture, and a fundamental set of shared beliefs and values that lead to consumer-centered corporate strategy and operations (**Deshpande and Webster, 1989). Esteban et al. (2002)**described marketing as "a set of attitude towards the market" that recommends distinct ways of thinking about the organisation, and its products and customers. Crane (1997) states that marketing comprises of content (what market-ing decisions are made and which marketing activities are undertaken) as well as process (how the decisions are reached, and how the activities come to take place).

Setting Future Research Agenda

Though green marketing is seen as an important sub-domain of marketing over the last five to six decades, only a handful number of studies are witnessed that focus upon developing green marketing strategies and motives of green marketing (i.e. perceived opportunities offered by green marketing to achieve organisationalobjectives, company's moral obligation, pressure from government bodies and competitors, cost saving, revenue generation and image building).Some of the studies evaluated green marketing strategies (Polonsky and Rosenberger III, 2001;Rivera-Camino, 2007) while others focused on relationship building with stakeholders and consumers (D'Souza et al. , 2006;Gurau and Ranchhod, 2005).

Gurau and Ranchhod (2005) compared Romanian and British eco-firms for their international green marketing strategies. Thus, the literature ad-dresses either theoretical development of green marketing or concentrated on stakeholders' perspective of green marketing.

Limitations Of The Study

1. Limited Number of samples used.
2. Time duration was less

Analysis and Interpretation

Awareness Level of Green Marketing

Particulars	No. of Respondents	Percentage
Yes	44	88
No	6	12
Total	50	100

Calculated Value < Table Value

Therefore, H0 is accepted

Inference: From the above table it is witnessed that88% of the respondent is aware of Green Marketing and 12% are not aware of the same.Occupation and their extent of support for GreenProducts.To find if there is any relationship between Occupation and their extent of support for Green Marketing.

Null Hypothesis: There is no betweenOccupation and their extent of support for Green
Marketing.

Alternative Hypothesis: There is relationship between Occupation and their extent of support for Green Marketing.

Level of interest to pay a little more for the Green Product Opinion about the following statement

Particulars	Accept	%	Reject	%
GM helps save money in the long run	42	84	8	16
GM helps companies to develop innovative products	38	76	12	24
GM gives the companies competitive advantage	40	80	10	20
Environmentally responsible Company	39	78	11	22

Inference: This table shows that 84% of the respondent believes that Green Marketing saves money in the long run and 16% do not believe in the same. 76% of the respondent believes that GM helps companies to develop innovative products and 24% does not believe. 80% of the respondents feel that GM gives the companies competitive advantage.

And 78% support with the statement that the employees and consumers feel proud to be associated with an environmentally responsible company.

Extent to which the manufacturers educate the consumers about their Green Products

Particulars	Number of Respondents	Percentages
Extremely good	10	20
Good	26	52
Average	11	22
Poor	3	6
Extremely Poor	0	0
Total	50	100

Inference: It is clear that 52% of the manufacturers put much effort to educate the consumers, 22% feels that it is extremely good and 6% says that the manufacturers are poor in educating consumers. Respondent's response for going Green in Office

While comparing the percentage scores of various responses, respondents give more importance to reducing water wastage, next priority is using CNG for cars and then reusing of energy saving bulbs. And least priority is given for reuse of paper

Suggestions

On the basis of the findings, the following suggestions are given to prop up Green products.

1. Even now there are people who are not aware of Green Marketing. It is the social responsibility of each manufacturer to make the people responsive to Green marketing and put in plain words their benefits in a way that attracts the customer. For this choosing the feel good marketing campaign is the crucial task.
2. Reprocessing the equipment is one of the primary aspects that are not conscious with most people. So the Government and the Manufacturers should put in effort to educate the people and thereby save our environment.
3. The important challenge with regard to Green Marketing is the lack of consensus by consumers, marketers and influential people. This setback occurs when the customers are not well-versed concerning the product and products manufactured are without their appeal. The primary aspect of marketing being analyzing the market and knowing the customers obligation is necessary with regard to Green marketing as well.

Conclusion of The Study

Any small ways of contribution towards the greening of earth can ensure that it would provide a comfortable and happy place for our future generation to come." Despite some extended confusions that "green products don't work as well, many of today's green products actually work better than the alternatives they are designed to replace. Indeed, thanks to advances in technology and design, green is now becoming synonymous with quality and can often command premiums because of it. Consider that a compact fluorescent light bulbs not only save money, they are more convenient since the bulbs don't have to be replaced as often. "Organic" is the new gourmet. By 2050, cities all over the world will face potential meltdown, unless we make drastic improvements in energy generation, food and water supply, transport systems, waste disposal and building decision.

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E-LEARNING: GLOBALIZATION OF EDUCATION

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ABSTRACT

The research was narrowly focused on the current eLearning Globalization is a growing trend. in Education. The tremendous advancement in information technology and worldwide networking is linked to the globalisation of society. It gave birth to e-learning, which broadened our horizons beyond traditional learning and provided opportunities for all teaching and learning participants In the digital age, a person's formal schooling knowledge becomes obsolete at a quick rate. E-learning is at the cutting edge of lifetime learning, and it gained traction in the 1990s in conjunction with multimedia and interactive presentations, as well as staff training. E-learning is based on the concept of creating a multimedia-rich collaborative virtual environment that offers benefits similar to face-to-face learning and teaching.. E-learning allows for just-in-time learning while keeping everyday work schedules intact. It also provides on-demand classes at the learner's convenience. It is flexible in the sense that the learner is not bothered by traditional limits of space and time. In light of educational reforms around the world, Technology has made a significant contribution to the improvement of teaching and learning. E-commerce, E-banking, and other 'E' words have appeared and grown in popularity around the world, with E-learning being one among them. As a result, E-learning can lower the cost of education per student while also improving the quality of education. It fulfils the aim of education, therefore globalisation of education through electronic media is both good and negative; it relies on the user's usage of it and the reason for which it is used. With their vast amounts of information and easy access to knowledge, ideas, and points of view, electronic media reduces the world or globalises the entire planet, in my opinion.

Keywords: *E-learning, Globalization*

Introduction

The tremendous advancement in information technology and worldwide networking is linked to the globalisation of society. It gave birth to e-learning, which expanded Our horizons were expanded beyond traditional learning and opportunities were provided for all participants in the teaching and learning process. The inexorable strength of globalisation, on the one hand, and the decisive effect of technology, on the other, have influenced government-inspired policy in the areas of information and communication technologies (ICTs) and education. As a result of both, e-acceptance learning's throughout the educational system appears to be unavoidable.

In the digital age, a person's formal schooling knowledge becomes obsolete at a quick rate. In today's quickly changing In today's world, lifelong learning is the only way to survive and thrive. E-learning is at the cutting edge of lifelong learning, and it gained traction in the 1990s alongside e-commerce as businesses began selling their products through the internet and using it for multimedia and interactive presentations as well as employee training. E-learning is founded on the idea of developing a multimedia-rich collaborative virtual environment that provides benefits similar to those Face-to-face learning and teaching are examples of this, E-learning allows for just-in-time education while keeping everyday work schedules intact. It also provides on-demand classes at the learner's convenience. It is flexible in the sense that the learner is not bothered by traditional limits of space and time.

Many educational institutions, including Stanford, Columbia, the University of Phoenix, and the University of Maryland are among the top universities in the country., are headed in this way. To access e-learning, all you need is a web browser and a modem connection. Additional advantages include speed and low cost. As a result, the e-learning market is set to explode. Intranets, the Internet, hardware, multimedia software, and videoconferencing have all become commonplace. all benefited from advances in information and communication technology (ICT), allowing for multisite course delivery and on-demand training at people's workplaces. Technology has the potential to make training more accessible to anybody, at any time. It also allows students to complete the course material at their own pace, convenience, and discretion. With a focus on personal knowledge, experience, and preference, there is a clear transition from homogeneity to heterogeneity. Broadcasting and narrowcasting, as well as spontaneous input through the web, are now feasible. The Internet has aided the transition from rigid to flexible learning methods, as well as from intra-active to interactive learning. The spread of intranets and extranets facilitates e-learning even more. Apart from organisational learning, a variety of education portals offer distance learning programmes to students, teachers, and professionals in this media-rich environment.

The globalisation of knowledge and information is underway as computer and communication technologies merge. In other words, worldwide information searchers can access the resources and services of a single digital library over the Internet. It is transformed into a multimedia virtual library.when all of the digital libraries are available over the Internet. International collaboration is also now available via the Internet. By implementing appropriate policies and methods, partners can exchange Web-based resources and services. The success of e-learning and knowledge management is dependent on digital resources and services. As a result, efforts must be made to build digital libraries that span geographical boundaries.

Singh and Hardaker's first piece in the special edition looks at e-learning adoption and diffusion. Prior research have highlighted the relevance of individual characteristics driving e-learning adoption, and the underlying message It has been discovered that if strategic managers recognised the social aspects of e-learning innovation, e-learning adoption levels would be higher. The idea is that present e-learning is aimed toward technically "literate" and inventive employees, and that this strategy limits the possibility of traditional professors adopting instructional technology for their own teaching. McGregor, Shaw, Sinclair, Sutherland, Munro, and Ross look into the development and implementation of a national online learning initiative for a cancer treatment system, focusing on the rigorous approach taken to provide a high-quality, evidence-based resource for the professional development of all cancer-care providers. The study discovered that time constraints for health professionals continue to be a major impediment to long-term online learning engagement. Leeds' research examines how technology has impacted the temporal culture of e-learning by looking at the experiences of e-learners in regard to their time preferences. When e-learners begin studying online for the first time, they may face temporal culture shock, according to the study. It emphasises the need of determining an individual's preferred time frame and taking into account the e-learning program's temporal culture. Dickfos, Cameron, and Hodgson present the growth of a blended learning technique in an accounting students' business law course and assess its impact on assessment and self-reflection. The research looks at the benefits of using blended learning technology to teach and assess oral communication skills, as well as the challenges that educators may face. By reporting on the novel use of video cameras in evaluating elevator pitches, the study contributes to pedagogy. It also adds to the body of knowledge about video presentations in higher education, particularly their favourable impact on student self-reflection. The paper by Lean, Moizer, and Newbery describes how to use the critical incident method to create an effective framework for reflective learning in the context of an online business simulation game.

Through structured reflection, the study presents a blended learning strategy for educators to use in order to improve the impact of e-learning. Smith and Barrett's research investigates how small business owners can use an informal online discussion forum (ODF) to encourage voluntary participation and foster double-loop learning (SBOs).This study showed that an ODF for SBOs could enable double loop deep learning, despite the fact that participation could not be inferred based on the discussion resource's online availability. Wong, Tatnall, and Burgess' the ninth and final paper in this special issue investigates a blended learning framework for evaluating the readiness, intensity of adoption, and impact of blended learning systems.

Conclusion

The papers received indicate that e-learning systems are having a significant impact on adult education and training. E-learning systems have a variety of implications and deployments, according to an assessment of the papers included in the special issues. The effectiveness of both full e-learning systems and hybrid blended learning programmes was assessed. Virtual learning environments are being used to supplement and enhance the student experience in blended learning systems, which are becoming more common in educational settings. Furthermore, in fields like business simulation and plagiarism detection, such systems are frequently employed by the teaching community to assist and enhance their instructional practises and evaluation procedures. Traditional and part-time students, medical professionals in cancer care, and small business owners were all impacted and supported effectively by this special issue, Learning styles, time management concerns, self-reflection, and dissertation completion were all taken into account. The future of e-learning, particularly in the university sector, is bright, with rising sophistication of provision and larger deployment of mobile learning technology to deliver customised individual learning solutions.

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ANALYSIS OF MANAGING HUMAN RESOURCES

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ABSTRACT

The discipline-based research on human resources (HR) management has evolved considerably over the past decade. During this time period, researchers have taken an increasingly closer look at each of the major HR functions to learn more about the ways in which specific types of HR policies, practices and procedures may influence a wide array of individual and firm-level outcomes. In addition, there has been a growing interest in the use of strategic lenses to learn more about the ways in which HR systems may be leveraged to achieve key business objectives. New and more comprehensive frameworks have been presented, and the respective empirical findings have generated numerous insights about the nature of HR systems and how they can be designed and implemented to help companies improve their competitive position.

Keywords: *Hospitality, Staffing, Human resources, Performance appraisal, Training and development, Compensation and benefits.*

Introduction

Similar trends have emerged in the HR research that has been published in hospitality-specific outlets. Indeed, considerable attention has been given to the ways in which each of the primary functional practices, as well as the HR system as a whole, can be leveraged to promote more effective work settings. Many of the hospitality-specific HR studies have been conducted – either explicitly or implicitly – to determine the extent to which the findings from the general domain apply to hospitality contexts. While the contributions of this type of study are generally quite modest, the results have been helpful in assessing the applicability of the more general frameworks that have been used as a basis for inquiry. However, there appears to be a growing interest among hospitality HR scholars to examine variables and relationships that may be uniquely relevant for labor-intensive, service-focused settings. These types of studies are quite compelling, as they not only provide a basis for examining the extent to which the findings from the general HR domain may extend to hospitality settings but also offer a foundation for developing new models that account for the idiosyncratic nature of hospitality contexts.

In light of these developments, the purpose of this paper is to present a comprehensive review and comparison of the research that been published in the general and industry-specific HR domains over the past ten years. This article will discuss the key topics that have been examined across five major HR functions, highlight the general findings and identify the primary implications for future hospitality research. The paper will begin by presenting an overview and analysis of the recent HR research that has been published in discipline-based outlets, followed by an overview and analysis of the HR studies that have appeared in hospitality-specific outlets. A comparison of the topics and findings provides a basis for identifying research priorities that may have the greatest impact for advancing our understanding about HR issues that are particularly germane to the hospitality industry

This review focuses of 5 key HR functions:

- Strategic HR
- Staffing
- Training
- Performance and Appraisal
- Compensation and Benefits

Multiple databases and key word searches were used to source articles for this review. For example, terms such as "recruitment", "recruiting", "job advertisements", "selection"', "hiring", "interviewing", "employment testing" and so on were used for finding articles that addressed staffing issues. In addition, topics such as employment law and labor relations were not included in this review, primarily because the results have comparatively limited applicability (e.g. the implications of employment laws are generally limited to specific locales, regions or countries). Only peer-reviewed articles were considered, and the referenced work is intended to be representative, but not all-inclusive, of the HR research that has been conducted over the past ten years.

Findings from the general HR literature

Strategic HR

Much of the strategic HR research has focused on the relationship between HR systems and firm performance, with growing attention on variables and conditions that may be critical for achieving a wide array of organizational performance outcomes. There is a large body of evidence which shows there is a positive relationship between various measures of a firm's HR system (e.g. high performance work practices) and various operational, customer-related and financial outcomes. However, we know much less about the mechanisms by which HR systems may influence key business objectives. Current conceptualizations remain fragmented, but there have been seral efforts to clarify and elaborate ways of HR systems.

Additional efforts have been taken to more fully account for factors outside the organizational context that may affect various linkages embedded within the HR-firm performance relationship. Past researchers offered a model that accounts for the dynamic qualities associated with the firm's competitive environment and the relevance of flexible, adaptive HR systems for responding to external forces. These and related efforts have added additional depth to explanations about the nature of HR systems and how this function may influence key indicators of firm effectiveness.

In terms of the empirical findings, there is substantial support for models thatarticulate direct and indirect links between a firm's HR system and various measures of firm performance. For example, a recent meta-analysis examined the findings from 116 studies and showed that three general dimensions of an HR system – skills-enhancing, motivation-enhancing and opportunity-enhancing practices – were directly related to a composite measure of financial performance (e.g. return on assets, return on equity, sales growth, etc.). In addition, these authors found that the relationship between these three HR dimensions and financial outcomes were mediated by:

- composite measures of human capital (e.g. employee capabilities, level of education, etc.);
- employee motivation (e.g. collective job satisfaction, organizational commitment, perceived organizational support, etc.);
- voluntary turnover (i.e. percentage of employees who quit or voluntarily left); and
- other operational outcomes (e.g. productivity, service quality, innovation, etc.).

Staffing

Within the staffing domain, some attention has been given to the job analysis and competency assessment processes, particularly data collection procedures). However, the majority of recent staffing research has focused on recruitment and selection topics. In terms of recruitment, continued attention has been given to the factors that may influence not only the number and types of individuals who apply for positions but also the extent to which those factors may influence whether job offers are accepted. For example, a recent meta-analysis of 232 studies showed that characteristics associated with the job, organization, recruitment process, recruiter behaviors and applicant expectancies were significantly related to applicant perceptions of attraction, but the magnitude of the relationships varied at different stages of the recruitment process. The results also showed that perceptions about fit (i.e. person-organization and person-job fit) were a strong predictor of applicant attraction throughout the recruitment process, but that the impact of recruiter behaviors declined at the later stages of recruitment. These findings provide insights regarding the relative importance of factors that may affect applicant attitudes and behaviors.

Another growing area of recruitment research has integrated findings from the marketing domain and examined the ways in which a company's image, brand and reputation may influence attitudes and behaviors of job applicants. For example, showed that low-involvement recruitment practices (e.g. general banner advertisements on Web sites that contain relatively little specific information) were more effective in firms that had a less positive/weaker reputation, whereas high-involvement recruitment practices (e.g. direct mailings that include details about job openings and the focal company) were more effective for firms with a more positive/ stronger reputation. Recruitment scholars have also responded to the growing importance of technology and have examined the roles and impact of web-based recruitment practices, including the use of social media. These findings have been instrumental in not only identifying the utility of specific recruiting procedures but also demonstrate the broader implications of these efforts for enhancing a company's competitive position.

Training and development

In terms of the training content, some attention has been given to new employee programs, particularly the adjustment process. Further, in response to changing workforce dynamics, there has been a growing focus on diversity, including older workers, as well as various management and leadership development challenges. However, substantively much more attention has been given to the impact of instructional design and facilitation, particularly the roles and impact of technology-enabled learning systems. For example, meta-analysis of 96 studies showed that a blended approach to training, in which web-based instruction was used as a supplement to classroom instruction, was significantly more effective than classroom instruction only for facilitating job-specific knowledge and skills. In addition, important insights about the learning process have been generated from studies that have examined behavioral modeling and error management methods, as well as procedures beyond the learning context (e.g. post-training feedback and self-coaching activities that may be integrated into the training design process to facilitate additional learning and the application of new knowledge and skills on the job. The results demonstrate the need for broader and more integrative approaches to designing, implementing and assessing training and development programs.

Performance and appraisal

In terms of performance appraisal, scholars have continued to examine the use and utility of multi-source feedback. For example, meta-analysis of 24 longitudinal studies showed that feedback from three primary sources – direct reports, peer reports and supervisor reports – had positive but very small effects on performance improvement. Finally, there is new evidence regarding the impact of individual characteristics on performance appraisal ratings, such as rater goals and employee loyalty, as well as the influence of the work context of the appraisal process.

Compensation and benefits

By comparison, research on compensation and benefits has received much less attention than other HR functions. Most of the studies in this domain have examined the impact of specific program components on individual outcomes. For example, studies have linked factors such as financial rewards and communication about pay with numerous employee attitudes, behaviors and performance. However, most of findings demonstrate that a contingency approach is needed to explain how incentive and reward systems may influence employee outcomes. For example, found that the link between pay secrecy and employee task performance was mediated by perceptions about fairness (e.g. informational and procedural) and performance-pay instrumentality, and moderated by an individual's tolerance for inequity (i.e. pay secrecy may have a negative influence on performance among individuals who are more sensitive to pay inequity). Thus, it appears that more attention is needed to the process by which pay and benefits may influence desired outcomes.

Findings

Using the same structure for reviewing the general HR research literature, I will now present an overview of the hospitality-specific studies that have examined each of the primary HR topics. As discussed in more detail below, there are several similarities in the general and industry-focused HR research literature regarding the relative amount and types of functional topics that have been published. In particular, hospitality scholars have not only validated the findings from studies conducted in non-hospitality settings but have also extended discipline-based models and generated important insights about the ways in which hospitality-focused HR systems may influence a broad array of individual-, unit- and firm-level outcomes. The table presents a comparison of the topics and findings for each of the primary HR topics.

Hospitality strategic HR

Two key trends have emerged from the recent strategic HR research that is specific to the hospitality industry. First, hospitality scholars who have examined various linkages that are embedded in the HR-firm performance relationship have not only confirmed but also extended the findings that have been published in the general HR domain. For example, a recent study by examined the links between a set of high-performance work practices and unit-level turnover and productivity (operationalized as sales per employee). Using data from a sample of 161 Taiwanese restaurants and hotels, the results showed that the high-performance work practices were significantly related to the two key indicators of unit performance, and that the unit's "employment mode", operationalized as a ratio of full-time versus part-time employees, appears to mediate the focal HR-firm performance relationship.

related trend in the hospitality HR research literature is reflected by efforts to provide more detail regarding industry-specific HR profiles that may be applicable to a wide array of hospitality settings. Several case studies have identified numerous HR practices, policies and systems that may have, particularly, utility in labor-intensive, service-focused work settings

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Key HR functions	General HR research–topics and findings	Hospitality HR research–topics and findings
Strategic HR	Most of the studies focus on "bundles" of HR practices, some of which may be widely generalizable, but others may be more context-specific; growing area of research. Empirical findings demonstrate support for the direct and indirect influence of HR on a wide array of financial and non- financial indices of firm performance; growing attention on mediators and moderators of the HR–firm performance relationship; consideration to global applications	Similar areas of focus; substantive attention to industry "best practices"
Staffing	Most of the studies focus on recruitment and selection topics; substantial emphasis on: individual, job-related and organizational factors that may influence a candidate's willingness to apply and accept a position; the roles of technology for sourcing and screening job candidates; improvements and enhancements to traditional selection tools, especially interviewing and psychological testing Empirical findings generally show positive relationships among the focal recruiting and selection practices and candidate attitudes, motivations and/or job	Results confirm general findings, but also suggest that some factors which influence the HR–firm performance relationship may be particularly relevant in hospitality contexts (e.g. employee status [full- vs part-time], national culture, etc.) Similar areas of focus; comparatively more attention to industry and/or segment-specific competencies (e.g. hotel general manager) and the influences that stem from increasingly diverse and competitive labor market conditions
Training	Some focus on diversity and leadership topics; significant emphasis on instructional design and facilitation, particularly the use and utility of technology-enable learning systems; ongoing attention to individual and contextual factors that may influence pre- and post-training attitudes and behaviors Empirical findings support the use of "integrated" learning systems that utilize a blend of instructional approaches and facilitation techniques to achieve desired learning and program objectives	Results confirm general findings and demonstrate the need to account for individual (e.g. customer service capabilities) and contextual factors (e.g. demographic diversity) that have salience in many hospitality settings Similar areas of focus; substantial consideration to content that is specifically relevant for hospitality settings (e.g. food safety, customer service skills, etc.), as well as contextual factors that may influence pre-training preparation and post- training transfer Results confirm general findings;

		findings also demonstrate the need to examine additional content areas that are particularly important in service-intensive contexts (e.g. capabilities required to anticipate guest needs)
Performance appraisal	On-going attention to the use and utility of multi-source feedback; consideration has also been given to the measurement of performance over time, as well as individual characteristics that may influence performance ratings Empirical findings extend our understanding about the use and utility of complementary sources of performance data, and the need to account for individual and contextual factors that may influence the assessment proces	Similar but narrower areas of focus Results confirm general findings; results suggest that additional consideration to process-related factors is warranted, especially the nature of and procedures related to performance feedback for increasingly diverse employee groups Similar but narrower areas of focus
Compensation and benefits	By comparison, one of the least researched topics; most studies focus on the impact of program design or structure on individual outcomes Empirical findings have shown both direct and indirect relationships among various financial and non-financial program features and relevant individual attitudes, motivations and behaviors	Results confirm general findings; some efforts to account for segment-specific influences (e.g. lodging vs food and beverage) and demonstrate organization-level impact

Hospitality staffing

Similar to the strategic HR research, there was a considerable overlap in hospitality-specific staffing research and that which appeared in the broader HR literature. For example, a great deal of attention has been given to individual skills and competencies. However, rather than focusing on measurement challenges, hospitality scholars have spent considerable attention on developing skill and competency profiles that may be useful in a wide range of hospitality settings. These findings are particularly noteworthy and reinforce the need for multi-disciplinary frameworks to explain the roles and impact of hospitality recruiting systems.

In terms of selection research, hospitality scholars have focused on many of the same topics as discipline-oriented scholars. Substantive attention has been given to the impact of various individual characteristics, including biodata, general mental ability and personality, integrity and physical appearance.

These findings are particularly important in that they demonstrate the importance of accounting for external factors – in general, as well as the impact of external factors on specific HR practices. For example, when economic conditions are positive, the demand for labor generally increases. Under these conditions, hospitality firms may need to dedicate more resources on recruitment and retention practices to find individuals who can help the organization achieve its growth objectives. However, when labor market conditions loosen and demand goes down, training and development practices may have more relevance for achieving key business objectives – this type of situation provides an opportunity for employers to upgrade or enhance employee skills that are critical for achieving a number of important operational and customer-related outcomes.

Hospitality training

There are several noticeable similarities when comparing the topics that have been examined in the general training research literature and that which has been published in hospitality-specific outlets. First, several studies have been conducted to examine the nature and impact of specific types of training, and, as would be expected, the content reflects topics that are particularly relevant for hospitality settings. In addition to diversity, studies have examined food safety and customer service as well as environmental knowledge and face recognition abilities. These studies provide important details about the individual qualities that may be essential for some types of hospitality jobs and work settings, and thus should be accounted for and incorporated into training programs that support the focal positions.

Hospitality performance appraisal

In comparison to the other functional topics, the research on hospitality performance appraisal was rather limited. There were two primary trends that emerged in this research domain. First, and consistent with the general performance appraisal research, scholars have continued to examine the use and utility of feedback from multiple sources.

Hospitality compensation and benefits

Similar to the research on performance appraisal and evaluation, the research on hospitality compensation and benefits has received comparatively limited attention. The few studies in this domain have addressed one of two areas of inquiry. These findings clearly demonstrate the need for additional research that considers the unique contextual challenges tha may influence thestrategic and operational impact of various compensation and benefit practices.

General implications for future research

In addition to the suggestions offered throughout the preceding review and comparison, there are at least two broader and potentially fruitful areas for future hospitality research. First, the vast majority of the empirical findings have shown that each of the major facets of a firm's HR system can have a direct impact on numerous individual and organizational performance outcomes. However, while these results have generated a great deal of new knowledge about the nature and influence of HR systems, additional consideration should be given to contextual factors that may mitigate or enhance the impact and relevance of HR systems and the component practices.

A related implication is that some of the linkages and contextual variables that have been examined in previous studies are likely to be more relevant in hospitality settings when compared to other types of businesses. For example, the findings from general and hospitality-specific training studies have demonstrated the importance of managerial support for the learning process. However, this type of support may have a much more pronounced influence in many hospitality settings because of the close working relationships between managers and front-line staff that are evident in many operational settings.

However, while HR is clearly an important function in all types of work settings, emerging evidence suggests that some aspects of a firm's HR system may be more relevant for hospitality companies compared to other types of firms. The intangible nature of services, seasonality and demand fluctuations, and the reliance on low-wage / low-skill workers, high fixed costs, and related industry characteristics present several unique challenges from an HR standpoint. As such, hospitality HR scholars need to take a closer look at the characteristics that are particularly salient in labor-intensive, service-focused settings and determine which HR polices, practices and systems may have the most utility and impact. Doing so will enhance our conceptual understanding about effective hospitality HR systems and provide a basis for developing more actionable guidelines for practice.

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ARTIFICIAL INTELLIGENCE IN PROJECT MANAGEMENT: A LITERATURE REVIEW

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ABSTRACT

Artificial Intelligence (AI) is emerging as most researched and developed technologies and the popularity of artificial intelligence (AI) techniques will only continue to rise in coming years. Project management is like managing three balls simultaneously i.e. time, budget and quality and the problem of time and cost over-runs remains a common pain area in various types of projects. Applications in the project management practices are currently growing, both in academic research and in industry onto the connection of AI methods in project management to improve uncertainty during execution of the projects. Artificial Intelligence may completely transform the Project Management in coming years and has effectively created a more comprehensive and competent way of fulfilling the various project management functions. This paper brings out the literature review of 10 papers to understand the changes that can be brought by the use of Artificial Intelligence in the various functions of Project Management.

Keywords: *Artificial Intelligence, Machine learning, Project Management.*

Introduction

A project is a unique activity which is undertaken to achieve required objectivesdefined in terms of outputs, outcomes or benefits.

A project is deemed to be a success if the required objectives according to acceptance criteria,agreed time-scale and budget are achieved.

Project management is the systematic application of the processes, knowledge, skills and gained experience to meet the project objectives.

AI application in Project Management is a system that can apply to the different projects without many resources.

Artificial Intelligence (AI) is the most deeply researched and emerging technologies in recent years. like smart personal assistants ,self-driving vehicles etc. Artificially intelligent systems have made impact into real world applications and will continue to do so with an exponential speed.

As AI systems, robots and cognitive tools are becoming more sophisticated with every job being reinvented followed by the augmented workforce. These fast movingdevelopments are leading to a enormous change in the working culture due to expectations arising from the future workforce.

At present lot of hype, concerns around AIare being created like how AI can impact the workforce, whether re-skilling or workforce transition is required. Developmentsof the project managers are also a matter of great concern to adopt the AI future.

No doubt that AI will help the project managers to add required value in various phases during execution of the complex projects within all sectors.

Machine learning usage in project management landscape will aid the project managers to forecast Stakeholder behaviours, cost and risks based on past data of the organization.

Implementation and maturity of a project management with AI platform successfully solely depends on organization ability to capture rrequired data at various stages of the project and itsmethods to capture the experience of its workforce.

With the boom of AI applications during execution of the projects, reinforcement of the project managers in coming days in the field of the project management has to berevisit as their span of activities and work along with computers and algorithms will exponentially increased.

Literature Review

In order to carry out this literature review search was carried out to find different approaches and utilisation of artificial intelligence in project management. The keywords used for this search have been: “AI in Project Management”, Project Management”, “Artificial Intelligence” etc.

Based on the search results, 10 papers was selected for review and conclusions from the papers / authors view has been summarized.

(Johnsonbabu, 2017) in his paper brought out that Artificial intelligent will help project managers to increase value addition in project by optimizing their effort in maximizing project success and freeing up from repetitive operational activities. Project manager would be able to work towards establishing Project goals, improve product quality, Optimize cost, align seamlessly with Project team, vendor pools, and geographical locations. However Human intuition, feelings, ideas, emotions and passion cannot be replaced by AI, thus a project manager will be needed in future. Project manager in the near future need to adopt in this paradigm shift of understanding and using the cognitive intelligence to their advantage.

(Munir, 2019)in his paper concluded that this is the era of technological advancements and more of the technological advancements have been made within every field that has changed the lives of individuals. Now-a-days, the big data and data science are very common terms. Both of these involve the use of AI, so basically AI provides the backend. Artificial intelligence is basically a device that helps to make some perception related to the environment and it assists in taking such actions that can lead to the attainment of actual goals. The artificial intelligence is now used within various fields. Its applications are not confined to only one particular field. However, within the field of project management, there is broader use of AI. The Project management AI is basically a system that helps in doing the administration of different projects. It helps to handle various projects and through using the available resources. Project management AI helps in fostering a safer environment. Along with it, the use of project management AI is done for developing an eco-system that basically helps in doing the management of knowledge. AI provides greater assistance to project managers in different ways. It helps in doing different tasks using different tools available for the project managers like Chatbots, Strategjos, ZiveBox, Rescoper, ClickUp, Clarizen and Polydone.

Chatbots help in identifying urgent tasks and the tasks that needs to be done currently and such other things. Straegios helps in developing agile models.

Zivebox helps in identifying that in what particular time period, the task will get completed.

The tool Rescoper helps the project managers to handle the tedious management parts. It also gives system alerts to the project managers and identify for if the project will be done within the given deadline or not.

Clickup tool helps in predicting the total number of team members appropriate for the given project. Polyden tool helps in managing the time and budget of projects.

The tool Clarizen allows easier sharing and tracking of data.

The project managers have got more support, accuracy, insight and strategy by making the use of AI for projects. Moreover, it has also increased the productivity of project managers at individual levels. As the AI tools have assisted the project managers to become more emotionally intelligence, creative and to eliminate information bias. However, there are also some of the risks associated with it, as because of the incremented use of AI within the field of project management, there will be a time where there will be no need of project managers and machines will replace it. In the future research, these risks will be analysed.

(Alneyadi & Ali, 2014) brought out that most of Information Technology (IT) projects do not succeed and reach their objectives andthis is due to the challenging nature of IT project management. IT project management suffers from high complexity, uncertainty and non-linearity. This research of author is concerned about the uncertainty of time management, the complexity of cost management and the non-linearity that is increasing in time and cost management at times when multiple projects are executed. To overcome these issues, this research proposed to use of Artificial Intelligence (AI) because of its ability to handle complex non-linear problems. Two AI techniques are the focus of new methodology.

These techniques were Fuzzy Inference and Artificial Neural Network to cover time and cost management.

(A. BUTT, 2018)has made conclusion that the results from the mixed-method research approach allowed the identification of the project management areas like Project Planning, Resource Management, Budgeting, Quality Management and Change Management which hold the most potential for AI system support. Additionally through his research, author also identified the key issues like Manual & Repetitive Tasks, Constant Tracking & Changes, Prioritizing Between Multiple Tasks & Projects, Inefficient Internal Systems & Process Flows which project managers face frequently.

Author also brought out through his findings that there are several areas of opportunities within project management where AI systems could be developed to support project managers. An existing project management AI solution for risk analysis and risk management were also found and can ultimately be used to strengthen the business case in support for the development and use of AI in other project management elements.

Several key insights about the views and knowledge of project managers regarding AI systems were also established during the course of this study. One significant finding is that the project managers in this study have a highly positive inclination towards using AI systems in their daily work. The business demand, therefore, is quite high. Another finding relates to the lack of awareness concerning AI systems within the project management community which could significantly inhibit the systematic AI utilization for this specific function in the future. It is crucial for organizations to tackle this by educating project managers about AI as well as by employing AI scientists who can drive the organization's technological strategies to ensure positive growth in the upcoming digital era for project management.

In order for organizations to successfully implement AI-based solutions and ensure efficient human-machine collaboration in the future, it is vital to develop and implement strategies specifically designed for enabling the digitalization of workplaces. The existing project management AI solutions in this regard form a good starting point for building scalable models for the future. The future workplace will inevitably involve humans and machines working side by side and the survival of organizations relies on embracing this heavily changing environment as early as possible to manage it effectively.

(Magaña Martínez & Fernandez-Rodriguez, 2015)brought out that the possibility of project success prediction or identifying critical success factors in advance is a field of research where researchers have been working intensively for project management purposes. Initially approaches were based on statistical models which werenot able to answer to project Management requirements. In artificial intelligence authors have found that AI algorithms and tools deal better with project uncertainty and in the complex environments.

Author brought out that algorithms like Neural Networks, Fuzzy Cognitive Maps, Genetic Algorithms, Bayesian Model, K-Means Clusteringetcare better for Critical success factors and Project success prediction:

(Bob, 2019)has touched upon some of the considerations and implications from accelerating deployment of AI in project industries, especially engineering and construction. Some of the considerations highlighted in the paper are:-

- Accuracy and qquality of results
- Emerging legal and liability issues
- Impact assessment of ethicalAI issues
- Non seen biases
- Quality and limits of training data
- Lack of verifiability
- Diagnosis of errors
- Access to sufficient data including relevant dark data
- Uncertainty around compliance with existing regulations developed pre-AI
- Data integrity
- Adequacy of interoperability
- Assumption tracking and linkage to AI use cases
- Constraint awareness and tracking as it relates to the AI we deploy
- Insight into AI optimization parameters

(S. Elrajoubi, 2019)in his paper concluded that big data has involved in the use of AI, so

AI provides the backend. Artificial intelligence is a tool which aids for perception pertaining to the project environment and helps in taking decisions that can help for achieving the specific goals. AI applications are not applicable to one specific field; however within the area of project managementuse of AI is extensive. AI in Project management is a system that helps in the management of various projects and helps to tackle different projects using the available resources. Project management AI helps in bringing up a safer environment. In addition to the use of project management AI is used for developing a platform that helps in the management of knowledge in different industry sectors. AI provides aid to all project managers in various tasks using different material to make daily tasks easier and effective.

Project managers nowadays have more assistance, insight, accuracy and strategy in project management which has increased the productivity of them at various capacities as the AI tools have helped them to be more creative andemotionally intelligent. However one myth is emerging that increased usage of the AI in the field of project managementthat computers and machines may replace humans in the coming years.

Notwithstanding all factors, AI will play important role for success of the project maintaining the company's competitiveness and increase financial targets. With increase in the efficiency of the project team due to AI tools, Project managers should update themselves with AI technologies to apply it in their daily activities work.

The SWOT matrix can be applied to project management as a function to investigate the potential opportunities and threats for the future under the microscope of artificial intelligence systems.

(M. U. S. Kunnathur, 2020)brought out in his thesis that even with all the limitations, basic methodology (for future) and advantage of AI will be:

- Collecting real project data
- The data will be organized (structured like a database)
- Python will generally used
- If there are lots of data or more accuracy is needed, then using a cloud service such as Amazon Web Services will be better
- The computer will analyse all the data and will finds patterns which will help to make a more accurate prediction
- In AI the machine basically will learn from its mistake so if the prediction is wrong, it will only get more accurate in the future.
- Will reduce delays due to human error
- AI in project management will not replace humans. The project managers will be important, however it can be a powerful tool for a project manager which can increase productivity

(Adel Belharet, 2020)have brought out that Artificial Iintelligence has aextensive range of business applications, however Impact of same is is being seen in project activities. In his report, author has share findings to aid in understanding the impacts of Artificial Intelligence during projects executionwhich will reshape project management in the coming days based on AI learning’s.

It has also brought out the details of the findings on impacts of AI on the PMO. A brief summary of the various categories of emerging PMO models are brought outstressing on potential impacts of AI. Project Management Office has to amalgamate into function concerned with change, strategy, product evolution and organizational governance assmart machines will assume and absorb functioning of PMO. This trend can be extrapolated as being a start of the massive digital transformation that project management professionals may face in the coming years.

(El Khatib & Al Falasi, 2021)brought out that AI is playing a vital role in the data management and arriving at the key decisions. The AI had played a key role in the UAE particularly in project management in the area ofmanaging and collecting data due to high accuracy of data as one of the major attributes. AI has made positive impact onthe quality decision as AI had significantly manage enormous data than any other previous source used by organizations. Citing the

AI as complicated subject, few organizations are hesitant to use AI. Lack of leadership and interpersonal skillsis one of the key reasons within the organizations to implement AI for project managementt. Most of the organizations has overcome this hurdle and are being shifting towards AI model for the organization growth and to sustain competitiveness.

Conclusion

Main conclusion from the reviewed papers is that inclusion of AI with project management practices has proven to be beneficial for increasing success of the project. Although AI technologies lack emotional and cognitive capabilities but at the same time it possesses powerful tools for analysing and predicting project management success or fate.

However there are certain challenges such as high skills, maintenance, high cost which needs to be look upon before implementing AI in any organisation. To conclude, AI can be seen as a optimistic opportunity in project management as it aids various project management activities for project success and AI tools will be really helpful for the project manager to control and monitor the project.

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STUDY ON THE USE OF INFORMATION COMMUNICATION TECHNOLOGY (ICT) TOOLS BY SECONDARY SCHOOL TEACHERS OF PUNE DISTRICT, MAHARASHTRA

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ABSTRACT

Information Communication Technology (ICT) develops pedagogical skills, for bringing innovations in teaching-learning process. It improves the perception and understanding of the world of the student to the teacher. ICTs are potentially powerful tools for extending educational opportunities; it brings more materials and resources for classroom interaction. Quality assurance and enhancement in all educational endeavours can be reassured with ICT. ICT as a knowledge resource provides access to different sources of information to teacher and student the key component of education system. Teaching -learning process is made interactive by integrating information and communication technology. Integrating ICT with the modern pedagogical approaches cognitivism and constructivism redefines established teacher-learner relationship and teaching learning process. The purpose of the study is to evaluate abilities of secondary school teachers to use Information and Communication Technology (ICT) and availability in school. Questionnaires are used for data collection. Total 236questionnaires were distributed to secondary school teachers, in which all of them were completed and returned. Collected data was analyzed and presented in percentage and also in tabular form for better understanding. Result was deduced and conclusion was interpreted after the analysis of data. The study report that use of computer and internet exist between the teachers of different age groups, various backgrounds and different areas in the district. The overall finding of the study reports that teachers are quite aware of ICT tools but moderately using ICT for professional purposes. The study also revealed some challenge facing ICT in secondary school as, irregular power supply: inadequate computer literate teachers: high cost purchasing computers in schools: insufficient facilities to support full application of the ICT and lack of fund.

Keywords: *Use, Information and Communication Technology – ICT, Secondary Schools.*

Introduction

Information and Communication Technology (ICT) can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration. It is the cause for the change from teacher-centered education system to learner centered education. Information and Communication Technology (ICT) has influenced all aspects of life. Information and Communication Technology as tools within the school environment include use for school administration and management, teaching and learning of ICT related skills for enhancing the presentation of classroom work, teaching/learning, thinking and problem solving skills, stimulating creativity and imagination, for research by teachers and students and as communication tool by teachers and students (Collis and Moonen, 2001, Derbyshire, 2003; Moursund and Bielefeldt, 1999). According to Bandele (2006) ICT is a revolution that involves the use of computers, internet and other communication technology in every aspect of human efforts. The author advice that ICT is a simply about sharing and having access to data with comfort. It is the super highway through which formation is transmitted and shared by people all over the world. Organizations like UNESCO take a holistic and comprehensive approach to promoting ICT in education.

Teaching and learning has gone beyond the teacher standing in front of a group of pupils and disseminating information to them without the students' adequate participation (Ajayi, 2008). The author advice that with ICT aids, teachers can take students beyond traditional limits, ensure their adequate participation in teaching and learning process and create vital environments to experiment and explore. Any classroom teacher with adequate and professional skills in ICT utilization will definitely have his students perform better in classroom learning. The use of these facilities, involves various method which include systematized feedback system computer-based operation/network, video conferencing and audio conferencing, internet/ worldwide websites and computer assisted instruction. It must however be stressed that the effective use of the various method of the ICT in teaching leaning depends on the availability of these facilities and teachers' competence in using them. Observation has shown that there are no functional internet facilities in most of the secondary schools of rural area. This appears to hinder the limit of teachers' exposure to the use of ICT in teaching. Teachers as well as students not to aware the proper knowledge of use of ICT because they had not taken the official training in the school.

In India, the Information and Communication Technology (ICT) scheme was introduced to schools in December 2004. The objective of the scheme was to "develop the ICT skills of students to face various economic and social challenges". Teachers need efficiency for classroom teaching. Since its introduction it brought new possibilities into the classroom. The face of the classroom is changed a lot demanding on teacher to prepare to keep up with technology utility into classroom. The integration of ICTs in teaching is the need of the day. Successful integration of ICT in the school system depends largely on the availability and competence and the attitude of teachers towards the role of modern technologies in teaching and learning. Various studies have shown the multifaceted problems militating against the effective use of ICT in the teaching learning process in schools, the most serious problems among all is the inadequate computer literate teachers due to which they are unable to use available ICTs properly in classroom teaching. Situation become worst since the use of basic educational ICT is the part of every teacher training course in India.

In Maharashtra, Technology should be used in the social sector such as health and education to accelerate the achievement of education and health objectives for India. Technology as a tool has found its application in all the sectors. In education it can act as an aid for education management of resources such as school information database to deliver informed decisions. Government of Maharashtra vision is to empower the students with knowledge, by going beyond installation of hardware and software peripherals in schools. Government is in the process of developing their website to be a one-stop on all information relating to education in the state.This study intends to evaluate the availability of ICT tools in secondary school and level of knowledge possessed by teachers in some selected secondary schools in Pune district of Maharashtra.

Research Methods

Data Collected from the study were analyzed using descriptive statistics of frequency counts and Simple Percentage. The population for the study consisted of all the teachers of the secondary schools in Pune District. The sample for the study is made up of 236 teachers. Here secondary school means educational institution where second / third stage of schooling takes place that is after primary education; usually it indicates class 8th to 10th. Schools were selected randomly, it's important to include both types of school in the sample this makes result more comprehensive and applicable. Information and communication technology was the independent variable while use by teachers was the dependent variable. A self-prepared questionnaire was used to collect the data for the study, prepared after an extensive study of several ICT related magazines, internet, books and related researches. The questionnaire consists of 72 questions, participant can response in quantity, yes or no, agree or disagree, Satisfied or not etc. Questions were related to those ICT tools which were normally available in secondary schools of Pune District like computer, internet connection, printer, Projector and various multimedia devices. Selected schools were visited and questionnaire was distributed among specified subjects like Mathematics, Science, Language and Social Science teachers on the basis of their readiness to participate in the study. Response sheet was collected from teachers after successful completion of questionnaire. Collected data was analyzed and presented in percentage and also in tabular form for better understanding. Result was deduced and conclusion was interpreted after the analysis of data.

Results

Sr. No.	Survey Data Statements	Yes	No
1	There are enough computers in school	20%	80%
2	There are printers available in school	89%	11%
3	Multimedia Facilities are available for teaching like Television, Audio Visual aids	15%	85%
4	Dark room is available in school	9%	91%
5	Internet facilities available for teachers	25%	75%
6	Inverter or Generator facilities are available	69%	31%
7	Computer lab for children is available	38%	62%
8	Projector is available in all classrooms	10%	90%
9	Computer programs / Software are used in regular teaching	9%	91%

Table 1: Availability of ICT Facilities in Schools

Source: Primary Survey

Results showed that ICT facilities are not readily available; with item 1-9, it is 80% teachers responded that they do not have enough computers in their school, 89% respondent that they do have printers available in their schools. Only 9% respondents that dark room is available in their schools, multimedia facilities like Television, audio visual aids is available in only 15% of teacher's school,25% responded that internet available in their schools, 69% responded that their schools is equipped with inverter or generator, only 38% responded that computer lab is available for student in their school, projector in all classroom is rarely available as only 10% responded its availability in their schools, only 9% responded that they are using software for teaching and its availability in school.

Table 2: Usage of ICT Facilities by Teachers

Sr. No.	Survey Data Statements	Yes	No
1	Are you comfortable in using computers	78%	22%
2	Do you use computer everyday	69%	31%
3	Do you use computer in teaching	19%	81%
4	Do you use computer to maintain school records	45%	55%
5	Do you use Microsoft word or any such computer programs in typing any document	48%	62%
6	Do you use excel to prepare results and other records	23%	77%
7	Do you use power point presentations in teaching	25%	75%
8	Can you operate printer connected to computer	81%	19%
9	Do you use internet frequently and can use educational material from it	55%	45%
10	Do you have an email account	91%	9%

Source: Primary Survey

Result showed that teachers teaching in secondary schools are not able to easily use of computers with its facility. With item 1-10, its 31% of total teachers who do not use computers every day, only 45% of teachers use computers to maintain school records, 62% of total teachers do not use MS word in typing documents, only 23% teachers use excel to prepare results, only 25% use Power Point Presentation application in teaching, 19% of teachers can't operate printer, only 55% of total teachers use internet frequently and browse educational material on internet, 9% teachers do not have email account, only 19% teachers use computer in teaching, and 22% of teachers still not comfortable with computers.

Discussion

The purpose was to study on the use of Information and Communication Technology (ICT) by secondary school teachers of Pune District, Maharashtra. The result showed that ICT facilities are not easily available in schools, they do not have enough computers available for teachers and students; projectors, darkrooms and multimedia media facilities like audio visual aids, televisions are rarely available. There unavailability of generator and inverter in schools. Less than one fourth of schoolsare connected to internet. Computer labs are available only in few schools. Thus it can be said that school management is not serious in providing ICT facilities, or there is lack of funding, irregular power supply, inadequate computer literate teachers, high cost purchasing computers in schools. insufficient facilities to support full application of the ICT and other problems.

The study showed that most teachers teaching in various secondary schools of Pune District, do not use ICT in teaching; nor for administrative purpose and neither for their personal purpose. It observed that most of these teachers lack the knowledge, competence to use ICT to facilitate teaching-learning process. Non-availability of these facilities greatly obstruct access and inadequate training of teachers on the use and application of the computer.

Recommendations

There is a need for in-service training related to Information and Communication Technologies, and their classroom usage. Government and school management should organize related workshops and ensure the availability of ICTs in school. Government or school managementhave set up computer labs in schools to help students familiarize with technology, along with prescribed curriculum and syllabus for each class. Similarly for teachers, conduct regular training programmes on subject studies and pedagogy to understand and effectively adopt IT in their respective subjects.

Conclusion

Information and Communication Technology (ICT) is changing ways of teaching and learning. ICT is making education more participating, interesting, easy to access, creative and productive. ICT based teaching is the demand of the modern education system which is gone beyond chalk and talk, reaching new heights of innovation. ICT is enhancing the outcome of education. Since ICT facilities is not readily available in schools hence there must be proper and adequate funding and financing of education, government should ensure that ICT facilities should be provided in schools. Teachers at secondary school levels are not comfortable in using computer and other ICT tools hence they should be trained on the use of ICT facilities through regular training programs ,seminars and computer literacy workshops organized by government and school management.

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A STUDY AUGMENTING BUSINESS DECISION MAKING THROUGH THE SUPPORT OF ARTIFICIAL INTELLIGENCE TECHNOLOGY WITH RESPECT TO MUMBAI REGION

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ABSTRACT

A competitive edge in organisations today makes them stay agile and workfaster, contributing to real-time services to customers, clients, and partners. Making effective decisions concerning business and its positioning during times of challenge is a challenge. We need to describe how business management is coping with technology in decision-making today. In the 21st century, technologies are moving at the speed of light. Infinite breakthroughs in the fields of deep learning and machine learning have allowed machines to process and analyse information in ways that we could never have imagined. The role of artificial intelligence (ai) is noteworthy in this regard. Stanford defines artificial intelligence (AI) as "the science and engineering of creating intelligent machines, particularly intelligent computer programs." makes it a powerful tool which, when used the right way, can radicalise decision-making and completely change the way we do business. This article discusses how AI achieves that.

Keywords: *Artificial Intelligence, Business Decision, Deep learning, Machine Learning, Data analysis, Business decision framework.*

Introduction

Throughout the long term, innovation has been key in a wide scope of directions. obligations in business. The artificial insight innovation design alludes to Machine insight or a machine's capacity to duplicate the intellectual elements of a person. It can learn and take care of issues.

Profound learning has paved the way for changing examinations and empowering viable candidates.

utilisation of AI.

Arising artificial knowledge framework might execute errands normally.

Those are identified with human insight. It utilises the calculation for directions to achieve the positions, These calculations assist the PCs with interfacing to see how to do things that humans consider.

The intricacies of any business choice are developing step by step. This incorporates

Understanding client needs and wants and adjusting items to those requirements is

wants. The framework utilises master thinking cycles to give information, which incorporates

evaluation and recommendations for business decision-making issues.

What is artificial intelligence (AI)?

It is a part of computer science that seeks to make computers or machines as wise as people.

It is the science and design of making wise machines, particularly clever PC programs.

It is related to the comparable task of utilising PCs to comprehend human knowledge, but AI does not.

It does not need to limit itself to strategies that are organically discernible.

Artificial intelligence is the investigation of how to cause PCs to get things done, which, at the Second, individuals improve.

As indicated by the father of artificial intelligence, John McCarthy, it is "the science and making perceptive machines, particularly astute PC programs"

Man-made consciousness is a method of making a PC, a PC-controlled robot, or a Programmers think introspectively, in the way that wise people think.

Simulated intelligence is refined by concentrating on how the human cerebrum thinks and how people learn, choose, and work while attempting to tackle an issue, and afterward, utilising the results of this review as a premise of creating canny programming and frameworks.

It has acquired an unmistakable quality as of late due, to a limited extent, to the volume of information, or the speed of information, size and An assortment of organisations are currently gathering information. Simulated intelligence can perform assignments like recognising designs.

information more productively than people, empowering organisations to acquire knowledge out of their information.

From a business point of view, AI is a bunch of extremely integral assets and systems for utilising them.Use those apparatuses to tackle business issues.

From a programming point of view, AI incorporates the investigation of emblematic programming issues.

tackle, and search. Simulated intelligence vocabulary Knowledge identifies with errands, including higher mental cycles, for example, imagination, tackling issues, Design acknowledgment, characterization, learning, enlistment, derivation, building analogies, improvement, language handling, information and some more. Insight is the computational a portion of the capability to achieve goals

Wise conduct is portrayed by seeing one's current circumstances, acting in complex conditions, taking in and comprehending for a fact, considering how to deal with problems in addition locating tucked-away information, effectively applying information in new circumstances, and thinking conceptually, utilising analogies, speaking with others, and that's only the tip of the iceberg.

Study Importance

Business Decisions and the Factor of Impact

There are times when you need to understand why business decisions are made at higher levels of management.

impact

• Constant learning is required to make sound business decisions.

• Organizational priorities have shifted.

• Enthusiasm for the company's goal

• You might not have a good team that can provide adequate input.

•There are no alarming methods that can be used to take precautionary measures.

measures

Research Objective

To study and build a framework for enhanced Business Decision making using

technology.

• In this section, we will look at the management business decision-making approaches of small and medium-sized businesses. Medium enterprises.

• To evaluate the develop model framework by implementing in suitable small and medium organizations with two groups. One test group and the other control group

• To identify and create weather small and medium-sized businesses use technology to make business decisions.

Research Methodology

• To find innovative ways to manage enterprises' technology

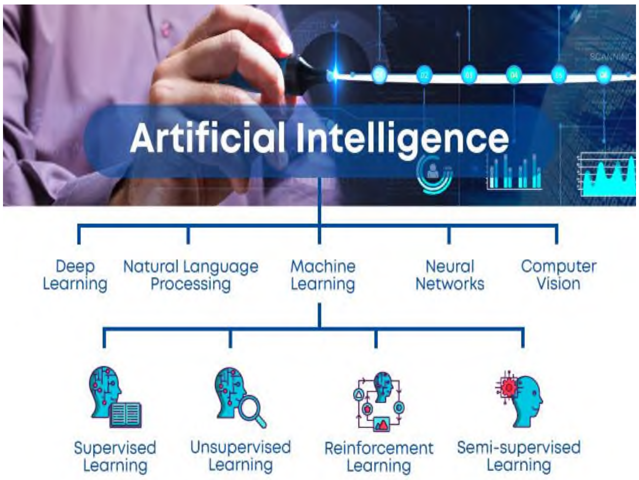
transformation.

• It aims to record interactions with small and medium-sized businesses all over the world.

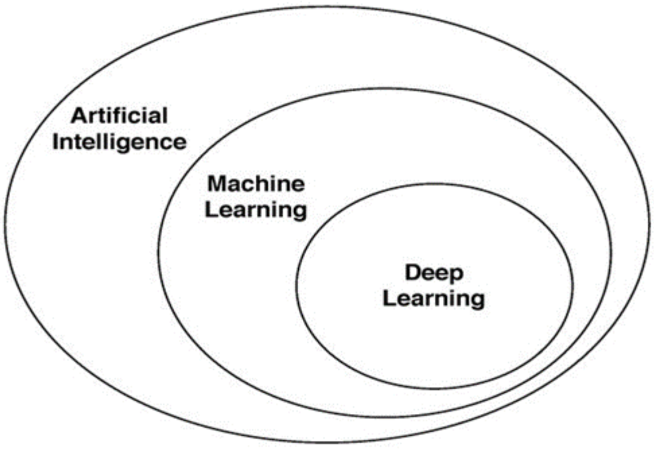
various domains to find their challenges.

• Previous research papers on the subject

• Method for collecting qualitative data



Branches of AI: A listing of branches of AI is given below. However, a few branches are honestly missing due to the fact that no one has diagnosed them yet. A number of these could also be considered to be standards or topics in preference to complete branches. Logical ai generally represents the statistics of the unique state of affairs within which it should act and its dreams are all represented by way of sentences in a few mathematical logical languages. The programme comes to a decision on what to try to do by way of inferring that certain movements are suitable for achieving its desires. 5 search—ai programmes regularly have a look at large numbers of possibilities—as an example, moves in a totally chess application and inferences via a theorem proving application. Discoveries are frequently made in roughly the right way to do this more correctly in a variety of domain names. Sample reputation: while a programme makes observations of some type, it's regularly planned to test what it sees with a sample. For example, a vision programme may additionally try to healthy a pattern of eyes and a nostril in a real scene with the purpose of trying to find out a face. Extra complex styles can be found in a linguistic conversation text, a chess role, or in the records of an event. These more complex patterns necessitate far more unique strategies than the smooth styles, which are the most commonly studied.languages of logical gadgets are used to represent information about the planet. Inference: others could be inferred from some information. Mathematical logical deduction is sufficient for a few purposes; however, since the 1970s, new methods of non-monotonic inference have been introduced to good judgment.The best non-monotonic reasoning is default reasoning, within which an end is to be inferred by using default. However, if there is evidence of the divergence, the conclusion may be withdrawn.For instance, once we listen to a hen, we infer that it could fly, but this conclusion could be reversed as soon as we hear that it is a penguin. It is the probability that a conclusion may also be withdrawn that constitutes the non-monotonic character of the reasoning. Normal logical reasoning is monotonic. In this case, the set of conclusions is drawn from a group of premises, i.e., the monotonic growing function of the premises. Circumscription is another sort of non-monotonic reasoning. Sense understanding and reasoning — this can be the world in which ai is farthest from the human stage, despite the very fact that it has been a vigorous research area since the 1950s. Even as there has been extensive progress in growing systems of non-monotonic reasoning and theories of action, more new ideas are wanted. Learning from enjoyment — there are a few policies expressed in common sense for learning. Applications can most effectively analyse what statistics or behaviour their formalisms can represent, and unfortunately, gaining knowledge of systems can only support very limited competencies in representing information. Planning: making plans starts with well-known information about the globe (especially records about the results of actions), records about the actual state of affairs, and a press release of an aim. From these, planning programmes generate a method for attaining the goal. In the commonest cases, the method is in reality a chain of movements. This can be an examination of the types of information that are required for solving problems in the world. Ontology is the study of the different types of things that exist.In Ai, the programmes and sentences pander to numerous types of gadgets, and it is important that we have a look at what these types are and what their basic homes are. Ontology assumed importance in the 1990s. A heuristic could be a manner of trying to find something or a concept embedded in the course of an application. The term is hired variously in AI. Heuristic functions are employed in a few tactics to go looking or to live how a long way a node at some point of a search tree seems to be from a purpose. Heuristic predicates that evaluate nodes throughout a search tree to see if one is healthier than the opposite, i.e., one that constitutes an improvement towards the aim and must be more beneficial. Genetic programming (GP) is an automatic method for growing running laptop software from an excessive-degree of hassle declaration of a difficulty. Genetic programming starts with a high-level assertion of "what needs to be done" and generates software to solve it automatically.



To higher admire how ai's propagation has affected people's lives, consider the subsequent examples. Each time someone visits a internet site, a network of algorithms jogging within the history processes the data of the user's on line conduct: analysing the surfing history and collapsing heaps of statistics points into an sensible bet on which products would trap the person, all to be able to determine which classified ads to show. From the clever keyboards on smartphones, which reduce a user's typing burden with the aid of anticipating the subsequent words, to the voice-activated assistants in drugs and computers, capable of following voice instructions and completing follow-on duties, the machines in users' instant personal area have grow to be a ways more smart than is normally found out. Whilst there is a substantive frame of literature on latest advances in ai and the ensuing implications for jobs, capabilities, and society at large, few analyses have examined the unique effect of ai on india's emerging economic system. The indian government is aggressively looking to increase human capital on a country wide scale, with a selected emphasis on its younger population via the ability india initiative, even as looking for to draw worldwide manufacturing to india through its make in india application. The opposite part of this modernising triad is the virtual india initiative: a determined push to make bigger virtual access national. Ai may have an instantaneous impact on every of these flagship initiatives of prime minister narendramodi inside the instant destiny, making it all of the greater urgent for policymakers in india to take significantly ai's ability for countrywide techniques and to be at the front line in growing ai generation. For india to maximally benefit from the ai revolution, it ought to undertake a deliberate policy to pressure ai innovation, adaptation, and proliferation in sectors beyond merely customer items and information era (it) services. Ai's speedy diffusion begets precise opportunities and demanding situations for india: setting up policies especially designed for the fast time period and tailoring the modi policies to contain and emphasise ai, in addition to for the medium and lengthy terms, will permit india to realise the era's complete capability. While india has absolutely been a benefactor of ai's fast ascent, ai has yet to capture the imagination of the us of a's policymakers. In foregoing the possibility to inaugurate countrywide strategies concerning ai, india runs the risk of falling at the back of the united states and china. Ai technology has sizable potential to shape india's financial and national security future; in the absence of a selected policy regime, however, india will find it hard to realise the overall power of ai even as probably falling prey to the damaging effects of ai proliferation. The usa's intellectual property rights business enterprise pioneered the combination and innovation of ai in the public quarter in its trial of and collaboration with ibm's watson.19 public investment for ai has even transcended borders: the malaysian government's strategic investment fund recently invested in an augmented fact/visible reputation startup based by using an indian-beginning entrepreneur with places of work in silicon valley.20 privately funded research in ai in india is enormously novel in evaluation.21 infosys, as an example, currently introduced its decision to help ai studies efforts at the indraprastha institute of statistics technology, delhi, other than its dedication to open-supply ai studies effortsled with the aid of spacex founder and tesla vehicles ceoelon musk (and others) beneath the openai task.22 with arya.Ai and just a handful of other indian ai startups starting to make their mark regionally,23 india has yet to look its private region make a vast international impact in ai.24 in current years, the indian institutes of era (iit) have in large part completed publicly funded research in synthetic intelligence. The maximum comprehensive insight into the state of ai research in india comes from a 2012 paper for ai mag by using deepakkhemani, a professor of laptop technological know-how at iit madras.25 in step with khemani, ai research in india has been restricted to a handful of passionate researchers and for that reason has notably lagged behind the united states and europe. Listing the few labs devoted to ai at diverse public institutions of higher schooling and studies, khemani underscores the restricted recognition of ai research in india on what he calls societal needs. He argues that due to india's great linguistic variety, most research attempt has been applied closer to gadget translation, herbal language, and textual content- and speech-associated packages. Indian ai research in protection is housed underneath the defence studies and development enterprise, particularly inside the middle for synthetic intelligence and robotics (cair).26 cair lists artificial neural networks, pc vision, and situational consciousness as its regions of primary focus, citing two other merchandise which can be under improvement for network-centric operations and decisionmaking the usage of a widespread expertise base of battlefield methods records. Cair also lists civilian packages consisting of experimental robots, together with a device which can play chess via leveraging an ai-primarily based choice engine.

Strong and Weak Artificial Intelligence

Extensive research in Artificial Intelligence also divides it into two more categories, namely Strong Artificial Intelligence and Weak Artificial Intelligence. The terms were coined by John Searle in order to differentiate the performance levels in different kinds of AI machines. Here are some of the core differences between them.

Weak AI	Strong AI
It is a narrow application with a limited scope.	It is a wider application with a more vast scope.
This application is good at specific tasks.	This application has an incredible human-level intelligence.
It uses supervised and unsupervised learning to process data.	It uses clustering and association to process data.
Example: Siri, Alexa.	Example: Advanced Robotics

Difference between Augmentation and AI

Artificial Intelligence	Augmented Intelligence
AI replaces humans and operates with high accuracy.	Augmentation does not replace people but creates systems that help in manufacturing.
Replaces human decision making	Augments human decision making
Robots/Industrial IoT: Robots will replace all humans on the factory floor.	Robots/Industrial IoT: Collaborative robots work along with humans to handle tasks that are hard and repetitive.
Real-Time Applications of AI in Customer Success 1. Automated Customer Support and Chatbots 2. Virtual Assistants Automated Workflows	Real-Time Applications of IA in Customer Success 1. IA-enabled customer analytics 2. Discover high risk/high potential customers 3. Forecasts Sales

Conclusion

For numerous reasons, human-concentrated system learning (HCML) is an emerging discipline of studies parallel to the exponential growth of deep learning (DL) studies. Some of the explanations are the common software of computer technology (AI) models in the globe, increasing interactions among humans and AI, specialists' issues concerning the black-box nature of DL, and questions about the reliability of the AI fashions in vital application scenarios. While HCML may be a nascent field, its beginning dates back a long time, and consequently, the exact term itself is over a decade old. However, with the advancement of AI in the early 2010s and the addition of deep learning techniques, HCML re-emerged with unique and current concerns.The ones that are frequently usability and adoption-related issues, such as user enjoyment, explainability, understandability, interpretability, privacy, security, equity, and dependability.

Many study groups started out running around HCML with special interpretations of the time period. As a result, we present a running definition for HCML based on an analysis of the single interpretations in this work.We observed a systematic literature evaluation technique to form the literature's seekable repeatable and extend its search base. We categorised 162 HCML courses we selected in terms of contribution kind, software domain, the "human" in the middle, and additionally, the models’ features. Our search and also the evaluation of previous work enabled us to understand the spectrum of HCML whilst identifying the confusion, study gaps, and possible study instructions. In the end, HCML is an emerging but rapidly developing area, in a situation where the inspiration subject—AI—is snowballing. HCML has sub-studies fields that stand independently, therefore lowering the principle consciousness of the middle standards of HCML. Given the primary level of the sphere, there are confusions, troubles, and opportunities for improvement, which we discussed at some stage in these paintings. Deep gaining knowledge is coming to the limit of cutting-edge hardware’s capabilities at the same time as person-issue investigations are lagging. It would be a game changer if the field of HCML could bridge the critical divide between model performance and consumer adoption. Given those remarkable possibilities, we agree that this is frequently the best time to investigate HCML.

Here is a list of AI applications that you may use in everyday life:
Online shopping: Artificial intelligence is used in online shopping to provide personalised recommendations to users based on their previous searches and purchases.
Smartphones use artificial intelligence (AI) to provide personalised services. AI assistants can answer questions and help users organise their daily routines without a hassle.
Machine translations: AI-based language translation software provides translations, subtitling, and language detection, which can help users understand other languages.
Cybersecurity: AI systems can help recognise and fight cyberattacks based on recognising patterns and backtracking the attacks.
Artificial intelligence against COVID-19: In the case of COVID-19, AI has been used in identifying outbreaks, processing healthcare claims, and tracking the spread of the disease.
Top Used Applications in Artificial Intelligence
Google's AI-powered predictions (E.g.: Google Maps)
Ride-sharing applications (E.g.: Uber, Lyft)
AI Autopilot in Commercial Flights
Spam filters on emails
Plagiarism checkers and tools
Facial Recognition
Search recommendations
Voice-to-text features
Smart personal assistants (E.g.: Siri, Alexa)
Fraud protection and prevention

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ANTIMICROBIAL ACTIVITY OF COMMERCIALLY AVAILABLE DIFFERENT COLGATE AND PEPSODENT TOOTHPASTES ON ORAL FLORA OF LACTOBACILLUS ACIDOPHILUS, BACILLUS SUBTILIS, AND ESCHERICHIA COLI - A COMPARATIVE STUDY

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ABSTRACT

The present study was conducted to evaluate the efficiency of commercially available Colgate and Pepsodent toothpaste against the Lactobacillus acidophilus, Bacillus subtilis and Escherichia coli. The gradually antimicrobial activity evaluation was performed by using disc diffusion method. Water was used as a control. Disc impregnated with Colgate and Pepsodent toothpastes were placed in Petri dishes containing culture media inoculated suspension of Lactobacillus acidophilus, Bacillus subtilis and Escherichia coli by the spread plate method. The diameters of the zone of inhibition were measured in millimeters and recorded after 24 hours incubation at 37^{o}C for each Colgate and Pepsodent toothpaste and result were obtained. Antimicrobial activity of all Colgate and Pepsodent toothpaste on bacterial types were approach one another.

Keywords: *Oral, Lactobacillus acidophilus, Bacillus subtilis, Escherichia coli, antimicrobial activity, Colgate & Pepsodent*

1. Introduction

In India, and in other developing countries, a very significant proportion of dental problems are due to microbial infections. Dental problems are of three types, formation of dental plaques, dental caries and periodontal diseases. Dental caries is a localized, transmissible infectious process that ends up in the destruction of hard dental tissue. It results from accumulation of plaque on the surface of the teeth and biochemical activities of complex micro-communities. *Escherichia coli* is one of the main opportunistic pathogens of dental caries, which plays a central role in fermenting carbohydrates resulting in acid production and leading to the demineralization of the tooth enamel. In addition, other microflora like *Bacillus subtilis* and *Lactobacillus acidophilus* also associated with active caries lesions (Manupati Prasanth 2011). Poor oral hygiene in one of the reasons for accumulation of these microbes and their harmful activities. In many individuals, the customary oral hygiene method of tooth brushing is by itself usually insufficient over a long period of to provide a level of plaque control consistent with oral health. Consequently, the incorporation of chemical agents with anti-plaque or antimicrobial activity into dental products has been as a potential prophylactic method of reducing plaque mediated disease.

The use of antimicrobial chemotherapeutic agent has been proposed as a means of reducing the levels of oral bacteria, especially in *Escherichia coli*, *Bacillus subtilis* and *Lactobacillus acidophilus*. Recently Triclosan, a low toxicity, non-ionic phenolic derivative with a wide spectrum of antimicrobial activity has been successfully incorporated into toothpaste, resulting in moderate but distinct positive effects on dental biofilm. There is evidence indicating that the ingredients in the formula of triclosan containing mouth washes including vehicle and other active substance may influence its antimicrobial activity and consequently clinical efficiency (Andiara De Rossi et. al., (2014); Manupati Prasanth (2011); J. Okpalugo et. al. (2009).

Recently, Mamdapure and Shete (2019) explained that the antimicrobial agents to conventional toothpaste increases effectiveness in the control or elimination of microorganisms involved in a wide variety of microbial infections in the human mouth, such as *Lactobacillus acidophilus*, *Bacillus subtilis* and *Escherichia coli* which caries primary etiological agent. Dean (1998) explained that most toothpaste contain trace amounts of chemicals that may be toxic when ingested.

The bacteria in the mouth are mainly present in the saliva and at the tooth surface. Prestone (1998) explained that the oral cavity is also where food digestion starts such as protein, vitamin, carbohydrate, fats and oil and also glucose digestion takes place in the oral cavity (tongue). Bacteria help to break down carbohydrate in the mouth to produce acids. Bacteria also feed on leftover food to create particles called volatile sulfur molecules. Health Promotion Board (2006), acids feed into the enamel, as this happen, the bacterial build up coating film on the teeth thereby encouraging more harmful bacterial activities, if the plaque is not carefully brushed out.

Table 1. Colgate and Pepsodent toothpastes evaluated in the study, their respective compositions.

Sr. No.	Toothpaste	Composition listed on Packages
1	Colgate MaxFresh	Sodium chloride 0.24 %, Sorbitol, Water, Hydrated silica, Polyethylene glycol, Sodium Lauryl sulphate, flavour, Cellulose gum, Tetrasodium pyrophosphate, Cocamidopropyl Betaine, Sodium saccharin, Methyl cellulose
2	Colgate cibaca	Sodium Monofluorophosphate, Sodium carboxymethyl cellulose, White film, Sorbitol, Silica, Sodium Beurylsulphate, Flavour
3	Colgate triple action	Sorbitol, Water, Hydrated silica, Sodium lauryl sulphate, Flavour, Polyethylene glycol, Tetrasodium pyrophosphate, Cocamidopropyl Betaine, Cellulose gum, Sodium saccharin, Sodium fluoride, Xanthan gum, Titanium dioxide, Pigment green, Pigment blue
4	Colgate total whitening	Sodium fluoride 0.24%, Water, Hydrated silica, Glycerine, Sorbitol, Sodium lauryl sulphate, flavour, Cellulose gum, Sodium hydroxide, Propylene glycol, Carrageenan, Sodium saccharin, Titanium dioxide, PVM/ MA copolymer
5	Colgate Visible white toothpaste	Silica, Sorbitol, Glycerine, Polyethylene glycol, Sodium triphosphate, Tetra potassium, Pyrophosphate, Sodium lauryl sulphate, flavour, Cocamido propyl betadine, Sodium carboxymethyl cellulose, Sodium saccharin, Sodium fluoride, Xanthan, Sodium hydroxide, Blue poly 50, Titanium dioxide in aqueous base
6	Colgate maximum cavity protection	Sodium fluoride 0.24%, Sorbitol, Water, hydrated silica, Polyethylene glycol, Cellulose gum, Sodium lauryl sulphate, Flavour, Sodium saccharin, Mica, Titanium dioxide
7	Colgate optic white	Calcium pyrophosphate, Propylene glycol, Polyethylene glycol, Copolymer, Polyethylene glycol, Glycerine, Flavour, PVR, Sodium lauryl sulphate, Tetrasodium pyrophosphate, Silica, Hydrogen peroxide, Sodium saccharin, Phosphoric acid, Sucralose, Butylated, Hydroxytoluene, Water
8	Colgate Max white	Sorbitol, Hydrated silica, Sodium lauryl sulphate, Aroma, Polyethylene glycol, Tetrasodium pyrophosphate, Cellulose gum, Cocamidopropyl Betaine, Sodium saccharin, Sodium fluoride, Hydroxypropyl methylcellulose, Limonene
9	Colgate cavity protection	Sodium monofluorophosphate 0.76%, Calcium phosphate, Dehydrate, Water, Glycerine, Sodium lauryl sulphate, Cellulose gum, flavour, Tetrasodium, Pyrophosphate, Sodium saccharin
10	Colgate total advanced health	Water, Hydrated silica, Glycerine, Sorbitol, PVM/MA copolymer, Sodium lauryl sulphate, flavour, Cellulose gum, Sodium hydroxide, Propylene glycol, Carrageenan, Sodium saccharin, Titanium
11	Pepsodent whitening	Calcium carbonate, water, Sorbitol, hydrated silica, sodium lauryl sulphate, potassium nitrate, flavour, cellulose gum, sodium silicate, Benzyl alcohol, sodium saccharin, perlite, sodium monofluorophosphate.
12	Pepsodent Germi check+	Calcium carbonate, water, Sorbitol, hydrated silica, sodium lauryl sulphate, flavour, sodium monofluorophosphate, cellulose gum, potassium nitrite, Benzyl alcohol, sodium silicate, Triclosan, Sodium saccharin, Cl 45 430, Limonene, Linalool.
13	Pepsodent clove salt	Calcium carbonate, water, Sorbitol, sodium lauryl sulphate, hydrated silicakaolin, flavour, sodium monofluorophosphate, Potassium Nitrate, Benzyl alcohol, sodium chloride, sodium saccharin, Eugenia caryophyllusleaf oil, Cetylpyridinium chloride, Limonene, Cl 74160,

		Cl 12490, Cl77891.
14	Pepsodent super salt	Calcium carbonate, water, Sorbitol, hydrated silica, sodium lauryl sulphate, Sodium silicate, sodium monofluorophosphate, cellulose gum, Benzyl alcohol, potassium nitrate, sodium saccharin, sodium chloride, CI 74260.
15	Pepsodent complete care	Sodium chloride (0.2 4%), Sorbitol, water, hydrated silica, polyethylene glycol 32, sodium lauryl sulphate, SD alcohol 38- B, flavour, cellulose gum, sodium saccharin, Titanium dioxide.
16	Pepsodent expert protection	Water, Sorbitol, hydrated silica, sodium lauryl sulphate, polyethylene glycol 32, zinc citrate, flavour, cellulose gum, Triclosan, sodium saccharin, sodium fluoride, Cl 74260, Cl 74160.
17	Pepsodent charcoal white	Aqua, Sorbitol, hydrated silica, sodium lauryl sulphate, poly ethylene glycol 32, flavour, cellulose gum, Trisodium phosphate, methyl paraben, propyl paraben, sodium saccharin, zinc citrate, sodium chloride, CI 77891.
18	Pepsodent gum care	Aqua, Sorbitol, hydrated silica, sodium lauryl sulphate, poly ethylene glycol 32, flavour, cellulose gum, Trisodium phosphate, methyl paraben, Propyl paraben, sodium saccharin, zinc citrate, triclosan, sodium Fluoride, CI 77891.
19	Pepsodent triple protection	Calcium carbonate, water, Sorbitol, hydrated silica, sodium lauryl sulphate, sodium monofluorophosphate, flavour, perlite, cellulose gum, potassium citrate, sodium silicate, sodium saccharin, Benzyl alcohol, CI 74160, CI 74260, glycerol, Limonene

2. Materials and methods:

2.1 Microorganisms:

Lactobacillus acidophilus, *Bacillus subtilis*, and *Escherichia coli* were obtained from the culture collection of Department of Microbiology, Maharashtra Udayagiri Mahavidyalaya Udgir district Latur (MH). The stock cultures were streaked on to individual Agar plates and incubated at 37° C for 24 hours after 24 hrs of incubation cultures were transferred to nutrient broth and incubated at 37° C for 24 hrs.

2.2 Antimicrobial activity:

The antimicrobial properties of Colgate and pepsodent were studied by disc diffusion method.

2.3 Disc diffusion method:

The selected bacterial strains were inoculated into 10 ml of sterile nutrient broth and incubated at 37° C for 24 hrs. Using a sterile cotton swab, the nutrients broth cultures was swabbed on the surface of sterile Agar plates.
Filter paper discs (Whatman No. 1) of 6 mm diameter were prepared and sterilized. Using an ethanol dipped and flamed forceps these discs were aseptically placed over nutrient plates. 100 micro L of different Colgate and Pepsodent toothpastes was aseptically transferred to these discs. The plates were incubated in an upright position at 37^{o}C for 24 hrs. The diameters of inhibition zone (in mm) were measured.

2.4 Morphological identification:

Lactobacillus acidophilus species are creamy white color, Gram positive, rod shaped, fermentative, organotrophs, non motile, grow readily at low pH values i.e. below pH 5.0 and it has optimum growth temperature is 37^{o}C. Its size range between 0.5 to 0.8 micrometer.
Bacillus subtilis is Gram Positive bacteria, rod shaped, motile and is above 4 to 10 micrometer long and 0.25 to 1.0 micrometer in diameter. *Bacillus subtilis* is a facultative anaerobe and heavily flagellated.
Escherichia coli is Gram negative, short rod shaped, motile and is above 1.0 to 2.0 micrometer long. *Escherichia coli* is facultative anaerobic and flagellated.

2.5 Biochemical characteristics identification:

Main biochemical index of isolated *lactobacillus acidophilus*, *Bacillus subtilis*, and *Escherichia coli* were determined by via the biochemical identifications by Indole production test, Methyl red (MR) test, Voges-Proskaeur (VP) test, Citrate utilisation test, Catalase test, Oxidase test, Urea hydrolysis, Nitrate reduction and triple sugar iron test. Strains cultured overnight at 37^{o}C were inoculated into the biochemical identification tube via the sterile inoculating loop. Every strain inoculating was triplicated. Negative control tubes were void of bacteria results were read within 24 to 48 hours.

Table 2. Biochemical Characterization of the isolated organisms

Sr. No.	Test	Results		
		L. acidophilus	*B. subtilis*	*E. coli*
1.	Indol production	-	-	+
2.	Methyl red	-	-	+
3.	Voges-Proskaeur	-	+	-
4.	Citrate Utilization	-	+	-
5.	Catalase	-	+	+
6.	Oxidase	-	+	-
7.	Nitrate Reduction	-	+	+
8.	Urea hydrolysis	-	-	-
9.	Hydrogen sulphide production	-	-	-

3. Result and discussion:

The antimicrobial activity of the Colgate and Pepsodent toothpaste was determined by the Disk diffusion method using standard diffusion techniques. The results of the present investigation showed that the bio efficiency of Colgate maximum cavity protection, Colgate Max white, Colgate cavity protection, Colgate total advanced health, Pepsodent expert protection are highest among all the toothpaste against the test organism. The zone of inhibition were average range in Colgate cibaca, Colgate triple action, Colgarte total whitening, Colgate visible white toothpaste, Pepsodent whitening. The zone of inhibition were less in Colgate max fresh, Pepsodent germi check+, Pepsodent clove salt, Pepsodent super salt, Pepsodent charcoal white, Pepsodent gum care, Pepsodent triple protection. Since Escherichia coli is very susceptible to the Colgate and Pepsodent toothpaste.

The main objective of the study was to evaluate the antimicrobial efficiency of commercially available toothpaste. *Lactobacillus acidophilus*, *Bacillus subtilis*, *Escherichia coli* was chosen as the test organism on the basis that in the oral cavity, they are almost the predominant colonizers of the oral cavity. Oral diseases seem appear after and imbalance among the indigenous microbiota, leading to the emergence of potentially pathogenic bacteria.

The results obtained in this study suggest differences among the tested dentifrices regarding antimicrobial properties. Each and every test comparing other toothpaste which gives zone of inhibition amongst the oral bacteria especially called *lactobacillus acidophilus*, *Bacillus subtilis*, *Escherichia coli*. The reason for this could be attributed to the differences in interactions between the bacteria and different Colgate and Pepsodent.

When compared to water and conventional toothpaste, all Colgate and Pepsodent toothpaste containing antimicrobial agents showed antimicrobial activity with significant differences. The addition of antimicrobial agents to conventional toothpaste to increase effectiveness in the control or elimination of microorganisms involved in a wide variety of microbial infections in the human mouth, such as *lactobacillus acidophilus*, *Bacillus subtilis*, *Escherichia coli* the primary etiological agents of dental caries. Thus, the objective of the study was evaluated commercially available Colgate and Pepsodent toothpaste that include the most widely used and most studied antimicrobial agents in the composition. Water was used as a control like in other studies to confirm the microbial growth around the well.

Table 3. Zone of Inhibition in different Colgate and Pepsodent toothpaste

Sr. No.	Name of Toothpastes	Zone of Inhibition (in mm)		
		L. acidophilus	*B. subtilis*	*E. coli*
1.	Colgate MaxFresh	21	23	32
2.	Colgate cibaca	20	24	34
3.	Colgate triple action	28	29	39
4.	Colgate total whitening	27	29	39
5.	Colgate Visible white toothpaste	25	26	36
6.	Colgate maximum cavity protection	29	34	45
7.	Colgate optic white	22	28	38
8.	Colgate Max white	30	35	42
9.	Colgate cavity protection	26	32	45
10.	Colgate total advanced health	29	31	43
11.	Pepsodent whitening	26	24	38
12.	Pepsodent Germicheck+	25	28	30
13.	Pepsodent clove salt	14	16	24
14.	Pepsodent super salt	14	16	25
15.	Pepsodent complete care	21	28	36
16.	Pepsodent expert protection	28	31	42
17.	Pepsodent charcoal white	15	18	26
18.	Pepsodent gum care	14	16	27
19.	Pepsodent triple protection	20	23	29

Oral hygiene is the practice of keeping one's mouth clean and free of disease and other problems by regular brushing of the teeth and cleaning between the teeth. It is important that oral hygiene be carried out on a regular basis to enable prevention of dental disease and bad breath. The most common types of dental disease are tooth decay and gum diseases including gingivitis and periodontitis. Toothpaste (dentifrice) with fluoride is an important tool to readily used when tooth brushing. The fluoride in the dentifrice is an important protective factor against caries, and an important supplement needed to remineralize already affected enamel. However, in terms of preventing gum disease, the use of toothpaste does not increase the effectiveness of the activity with respect to the amount of plaque removed.

Conclusion

The present study was based on in-vitro experiments. Results from this study have shown that toothpaste formulation containing natural antimicrobial agents were more effective in controlling the oral microflora compared to toothpastes containing synthetic antimicrobial agents like triclosan. It cannot be assumed that the results of antimicrobial efficacy could be proportional or transferable to the oral cavity and translated into clinical effectiveness. This was an in-vitro study therefore it is not necessary that the results that we obtained shows the same effects on in-vivo experiments hence it is needed to proceed this study under in-vivo conditions. The study can further be taken as an approach to evaluate the antimicrobial efficacy of various herbal toothpastes and compare them with conventional dentifrices of known antibacterial effect. HPLC technique can further be performed for extracting pure molecular form of antibacterial components to increase the efficacy of dentifrices. It has been concluded from our results that certain dentifrices has shown less zone of inhibition due to less solubility of antibacterial components. So, it is required to study further and perform certain experiments which could increase their solubility.

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NUTRITIONAL AND PHYSICO-CHEMICAL MEASUREMENT AND CHARACTERIZATION OF DIETETIC AMRAKHAND MANUFACTURED BY USING STEVIA LEAF EXTRACT POWDER

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ABSTRACT

Using stevia in place of sugar in sweetened dairy products may help people with diabetes, stabilize their blood glucose levels. There is currently no cure for diabetes but people can manage the condition with medications and lifestyle changes, stevia can help to support these lifestyle adoptions. Hence in present investigation attempt have been made to study the effect of stevia leaf extract powder on Physico-chemical and microbial quality of dietetic Amrakhand. Six different formulations as base mix of 100% chakka and 30% mango pulp added with proportion of Sugar and stevia leaf extract powder as 30: 70 (T1), 25: 75 (T2), 20: 80 (T3), 15: 85 (T4) and 10:90 (T5) and control sample 100: 0 (T0). Amrakhand prepared with different proportion of sugar and stevia leaf extract powder effects significantly on Physico-chemical quality. Moisture, fat, protein, Acidity content increases with concentration of stevia leaf extract powder increases. Carbohydrate content of treated product had significantly lower than that of all treated samples. Calorific value/100gm of all treated samples was decreased significantly. Amrakhand prepared with different levels of stevia extract powder results into considerable decreasing trend in carbohydrate as well as Calorific value.

Keywords: *Amrakhand, calorific value, Physico-chemical quality, stevia leaf extract powder.*

Introduction

Shrikhand is an integral part of a traditional Maharashtrian and Gujarati recipe. Apart from tasting yummy by itself, it can also be enjoyed as an accompaniment for roti and puris. Depending on what flavorings you add to the thick and creamy hung curd, you get different varieties of shrikhand. Because of the change in economic status and food habit of consumers the other varieties of shrikhand such as fruit shrikhand are also in great demand Singh (2007). Amrakhand is a variation of shrikhand in which Chakka (drained curd) is mixed with pureed mango, dry fruits, nuts and sugar. This is healthy as desert can get almost, yoghurt and fruit, what's bad about it, nothing except sugar. Sugar is called as white poison; it is a simple carbohydrate with zero nutritional value. On intake sugar will cause inflammation of the body which will last for many hours, it will spike your body sugar level and shut down the fat burning process. To live a healthy life try and cut sugar which from your diet. It requires a slow and deliberate attempt to do it as sugar is an issue, needs to find out an alternative to sugar. Until recently synthetic high potency sweetener were the only practical solution to the problem of removing sugar from food and drinks without loss of sweetness, people start searching other alternative that is of natural origin.

Stevia, a natural sweetener obtained from the leaf of *stevia rebaudiana* plant, is 130-300 times sweeter than sucrose Giri et.al. (2009). Stevia don't contain energy. Ozdemir et.al. (2015). Because of stevia has a negligible effect on blood glucose level, it is attractive to people on carbohydrate controlled diets. Khattab et al. (2015).

Due to the focus on stevia for people with diabetes, many people wonder if it can treat or cure the condition. There is currently no cure for diabetes, but people can manage the condition with medications and lifestyle changes, stevia can help to support these lifestyle adoptions. The stevia leaf contains number of very similar compounds or steviol glycosides that are all sweet, the best tasting of these is Rebaudioside A (stevia extract) is an all natural sweetening ingredient extracted from the stevia leaf that is used in powder or liquid form to heighten sweetening intensity and improve taste. They have been consumed for centuries in Central and South America, and are safe for consumers. In the United States, the Food and Drug Administration (FDA) categorize Steviol glycosides as "generally recognized as Safe," Or GRAS. As a result, many major food and beverage companies are looking ahead and aiming to reduce sugar / calories in various projects over the next few years in response to consumer demands worldwide. Hence attempts have been made to study the effect of stevia leaf extract powder on nutritional and Physico-chemical properties of dietetic Amrakhand.

Materials and Methods

Ingredients: Fresh buffalo milk, Good quality cane sugar and Alphonso mango pulp of 'Chitale' brand was purchased from local market. Refined Stevia leaf extract powder (containing 97% Rebaudioside A) was purchased from Stevia world Agro Tech. Pvt. Ltd. Bangalore, Karnataka, India.

Production of dietetic Amrakhand:

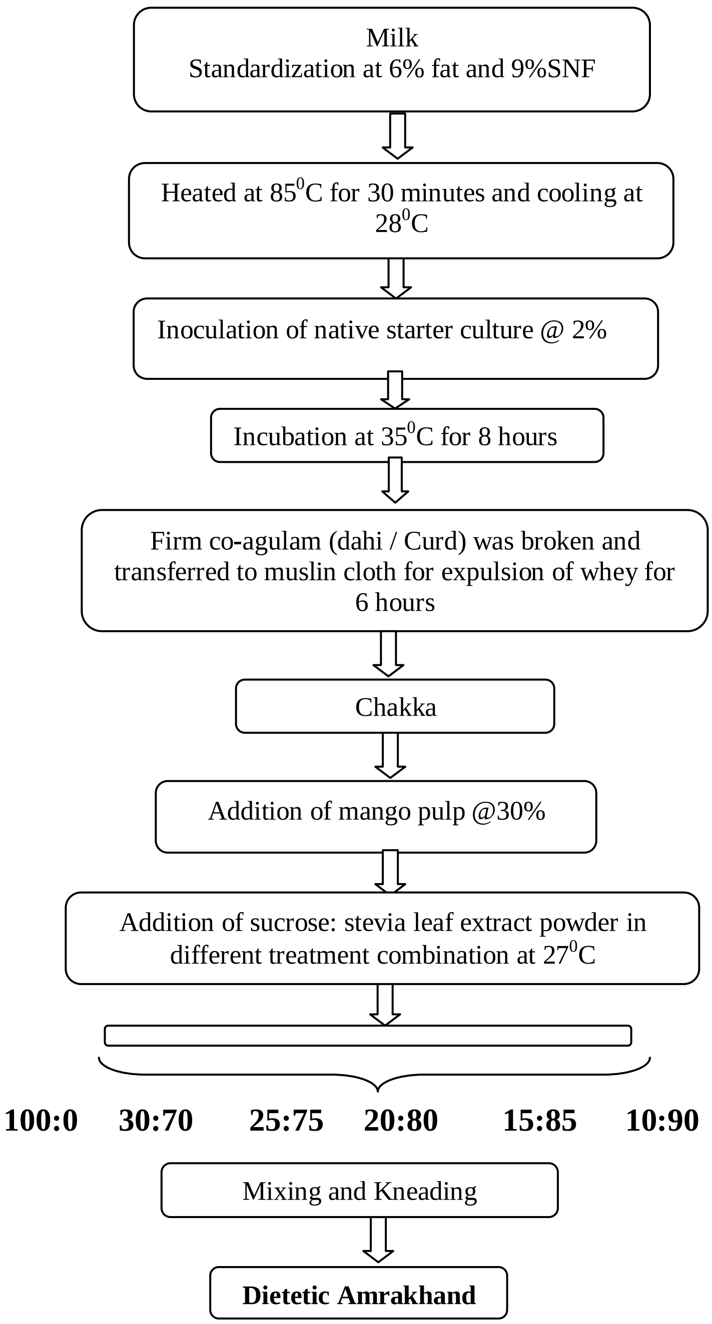
Treatment combinations of Sucrose and stevia leaf extract powder

Treatment Concentration of Sugar: stevia leaf extract powder

To - 100: 0
T1 - 30: 70
T2 - 25: 75
T3 - 20: 80
T4 - 15: 85
T5 - 10: 90

On the basis of manufacturer instruction, 1 gm of stevia leaf extracts powder is equals to 200 gm of cane sugar.

Flowchart for preparation of dietetic Amrakhand



Analytical methods

Fat content of Amrakhand was determined as per the modified Gerber fat test for Shrikhand Puntambekar (1968). Total protein of Amrakhand was determined by semi-kjeldahl method (IS: 1479-part-II, 1961), using kjel plus unit. Total sugar in the Amrakhand was determined by Lane-Eynon method as per (IS: 2802-1964). Carbohydrate content of sample was determined by difference method

%carbohydrate = 100-(%Moisture + %Fat + %Protein + %Ash)

Ash content was determined by procedure described in BIS (IS: 1547-1985). Energy value in terms of Total calorie content was measured as per Arbuckle (1986).

Total calorie content = (%carbohydrate × 3.87) + (%Fat×8.79) + (% Protein×4.27)

Titrable acidity of Amrakhand was determined by method described in BIS (IS: 1166-1968) for condensed milk. PH of sample was determined by using digital PH meter. Total solid content of Amrakhand determined by using gravimetric method as per the procedure described in IS: 12333-1977; ISO 6731-1989 and to analyze moisture content the total solids was subtracted from 100.

Colour indices of Amrakhand was measured by using bench top spectrophotometer colour measuring instrument (Konica Minolta / CM-5).The colour values of Amrakhand were expressed as L* lightness ranging from 0 (black) to 100 (white) a* redness ranging from +60 (red) to -60 (green) and b* yellowness ranging from +60 (yellow) to -60 (blue) as per the international colour system.

Statistical analysis

Data were evaluated by the analysis of variance (one way ANOVA) using WASP web based agricultural statistics software package developed by ICAR-Central Coastal Agricultural Research Institute, Goa.403402, India.

Results and Discussion

The Amrakhand samples were analyzed for the Physico-chemical qualities such as Moisture, fat, Protein, Carbohydrate, Energy (calorific value), Ash, Acidity (%LA), PH and Instrumental colour indices.

Nutritional analysis

Moisture: The moisture content of Control and treated samples were significantly differed with increasing the concentration level of stevia leaf extract powder. The mean values for moisture content of Control sample T_0 was 37.46 per cent against T1, T2, T3, T4 and T5 were 44.23 per cent, 45.24 per cent, 45.72 per cent, 46.56 per cent and 47.52 respectively (Table 1). The results are corroborated with Rolly et.al. (2014) prepared Shrikhand with different level of stevia and found that moisture content increased from 49.16 per cent to 56.72 per cent with 40% replacement of stevia leaf powder. The results were also in line with Giri & Rao (2014) prepared kulfi and found that the moisture content increased from 59.8 per cent to 67.0 per cent with 70 per cent sugar replacement with stevia.

Fat: The mean value for fat content of all the samples T0, T1, T2, T3, T4 and T5 were 6.63%, 8.00%, 8.09%, 8.71%, 9.18% and 9.30% respectively. Fat content of control and treated Amrakhand was significantly differed .However fat content of treated samples were increased with increasing concentration of stevia leaf extract powder.

Protein: The protein content of control and treated samples were differed significantly. The mean value for T1, T2, T3, T4, and T5 was 6.61%, 6.63%, 6.74%, 6.93% and 6.96% against control T0 was 5.71%. The protein content of treated samples was increased significantly compared to control sample.

Carbohydrate: The carbohydrate content of treated samples was significantly lowered with increasing the concentration of stevia leaf extract powder as compared to control sample (Fig.1) it is due to reduction in sugar level and increased level of zero-carb containing stevia leaf extract powder. The results are in line with Giri & Rao (2014) prepared kulfi and found decreased level of carbohydrate from 22.8% in control sample to 16.4% with 50% reduction in sugar level.

Ash: The Ash percentage in all control and treated samples significant difference were not observed. The mean value for Ash content of T0, T1, T2, T3, T4 and T5 were 0.66%, 0.66%, 0.67%, 0.67%, 0.68% and 0.70%.

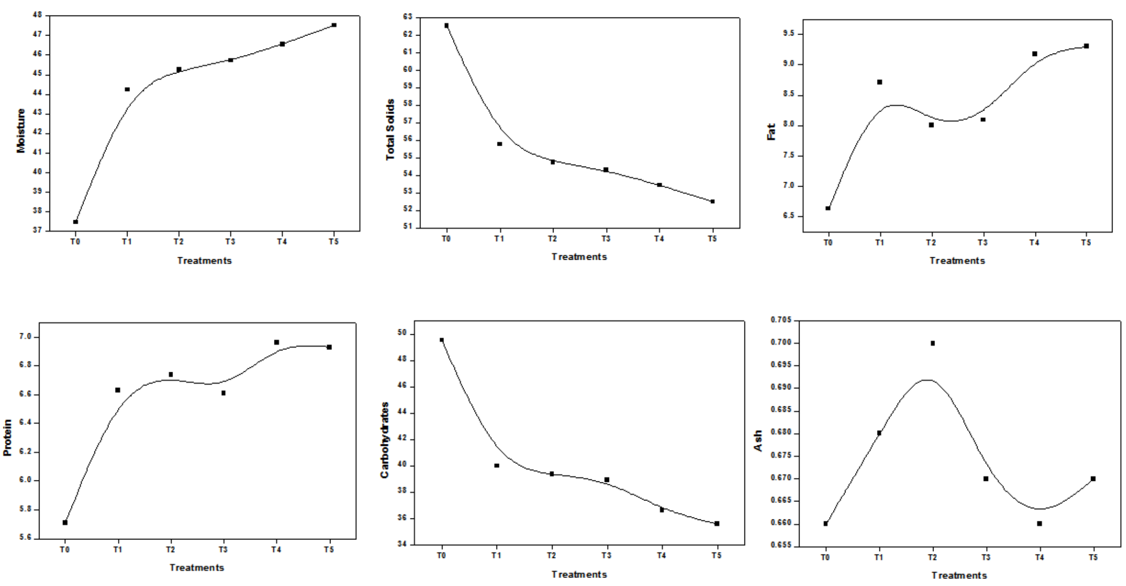


Figure 1: Effect of sugar replacement with stevia on Nutritional parameters of Dietetic Amrakhand

Energy: Energy in terms of calorific value/100 gm of treated samples was lowered significantly, it was noticed that calorific value of control T0 was 275.04 kcal against 261.09 kcal, 254.37 kcal, 252.25 kcal, 251.33 kcal and 249.65 kcal for T1, T2, T3, T4 and T5. However the calorific value of treated sample decreased with increased concentration level of Stevia leaf extract powder due to addition of non caloric stevia leaf extract powder. The results were corroborate with Salem & Massoud (2003) prepared frozen yoghurt and found that with replacing sugar with stevia lowers the calorific value of product about 33.86% when 75% sucrose was replaced. The results were also in line with Giri and Rao (2014) prepared kulfi in which they found that with 70% reduction in sucrose with 0.007% stevia lowers the calorific value from 203.7kcal to 180.6 kcal.

Table 1: Average data for different Nutritional parameters of control and experimental Amrakhand

Treatment	Level of replacement (%)	Constituents(%)					
		Moisture	Total solids	Fat	Protein	Carbohydrate	Ash
T_0	0	37.46 ± 0.83^{d}	62.53 ± 0.83^{a}	6.63 ± 0.23^{c}	5.71 ± 0.25^{b}	49.52 ± 0.45^{a}	0.66 ± 0.03^{a}
T_1	70	44.23 ± 0.22^{c}	55.76 ± 0.22^{b}	8.71 ± 0.45^{ab}	6.63 ± 0.22^{a}	39.97 ± 0.62^{b}	0.68 ± 0.00^{a}
T_2	75	45.24 ± 0.34^{bc}	54.75 ± 0.34^{bc}	8.00 ± 0.05^{b}	6.74 ± 0.11^{a}	39.33 ± 0.42^{b}	0.70 ± 0.01^{a}
T_3	80	45.72 ± 0.31^{b}	54.27 ± 0.31^{c}	8.09 ± 0.13^{b}	$6.61\pm.18^{a}$	38.90 ± 0.56^{b}	0.67 ± 0.02^{a}
T_4	85	46.56 ± 0.18^{ab}	53.43 ± 0.18^{cd}	9.18 ± 0.08^{a}	6.96 ± 0.02^{a}	36.61 ± 0.23^{c}	0.66 ± 0.01^{a}
T_5	90	47.52 ± 0.28^{a}	52.48 ± 0.28^{d}	9.30 ± 0.00^{a}	6.93 ± 0.04^{a}	35.56 ± 0.30^{c}	0.67 ± 0.01^{a}

Data is presented as mean ± SE (n=3)

^{abcd} Means with a different superscript within a column differ significantly ($P< 0.05$)

Physico-chemical analysis

Acidity: The acidity percentage of control sample T0 recorded was 0.89% as against 0.89%, 1.01%, 1.13%, 1.19% and 1.24% for T1, T2, T3, T4 and T5 respectively. The acidity percentage of treated samples were significantly increased compared to control sample and might be due to lower level of sugar.

pH: pH of treated samples was significantly different compared to control sample. The mean value for PH of treated samples 4.53, 4.40, 4.31, 4.27, 4.26 against 4.56 for control sample.

Table 2: Average data for physico-chemical parameters of control and experimental Amrakhand

Treatment	Acidity (%LA)	PH	Water activity
T_0	0.89±0.02^d	4.56±0.02^a	0.909±0.018^a
T_1	0.89±0.05^d	4.53±0.04^a	0.918±0.036^a
T_2	1.01±0.02^c	4.40±0.01^b	0.923±0.022^a
T_3	1.13±0.02^b	4.31±0.01^{bc}	0.932±0.025^a
T_4	1.19±0.00^{ab}	4.27±0.07^c	0.942±0.009^a
T_5	1.24±0.00^a	4.26±0.03^c	0.962±0.002^a

Data is presented as mean ± SE (n=3)

^{abcd} Means with a different superscript within a column differ significantly (P< 0.05)

Influence in PH of treated sample might be due to reduced level of sugar. It was found that acidity of treated samples increased results into reduced PH level.

Water activity: The water activity value of treated Amrakhand changed from 0.918 to 0.962, while for control product it was 0.909. The highest value (0.962) was obtained in sample containing 90% sugar replacement. There was a slight increase in water activity in treated Amrakhand compared to control. The water activity value of both treated as well as experimental product were not significantly (P< 0.05) different.

Colour analysis

Colour analysis of the control and experimental Amrakhand were presented in terms of L*, a* and b* values in the Table 3.The colour is important as it improves the virtual appeal of the food product to which it is added. (Meena 2013).

Table 3: Average data for Instrumental colour Indices of Control and Experimental Amrakhand

Treatment	Instrumental colour indices		
	L	a*	b*
T_0	79.67±0.004^f	8.22±0.013^a	47.51±0.014^a
T_1	81.99±0.002^d	7.68±0.004^c	43.53±0.022^c
T_2	81.77±0.005^e	7.99±0.006^b	43.85±0.007^b
T_3	82.77±0.003^c	6.65±0.005^f	42.01±0.007^e
T_4	82.92±0.002^b	6.86±0.004^d	42.13±0.013^d
T_5	83.00±0.004^a	6.73±0.004^e	41.21±0.010^f

Data is presented as mean ± SE (n=5)

^{abcdefg} Means with a different superscript within a column differ significantly (P< 0.05)

Conclusion

There is growing need for production of low calorie or zero calorie dairy products. Using stevia for people with diabetes and health cautious society can stabilize their blood glucose level. From the results it is concluded that use of stevia leaf extract powder in Amrakhand lowers the total calorie intake by reducing the total carbohydrate content and improves the nutritional value of finished product.

Acknowledgement

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EFFECT OF DETERGENT POLLUTION ON THE OXYGEN CONSUMPTION CAPACITY OF THE FISH LABEO-ROHITA

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ABSTRACT

Water the most important and precious natural resources and that are very essential for the sustenance of life. In the present study, Labeo-rohita a major freshwater carp has been selected to determine the effect of detergent pollution on the oxygen consumption capacity of the fish in four different concentrations of a Nirma, a popular brand of detergent. Among various forms of pollution in water bodies, detergent pollution has an immediate and detrimental effect on the aquatic fauna. The amount of dissolved oxygen consumed by fishes was determined using Winkler's method. This study demonstrates that the dissolved oxygen consumption in Labeo-rohita increases with an increase in the concentration of detergents. This is due to the stress caused by the detergent on the normal physiological activities of the fish. The study indicates that the draining out of domestic sewage containing detergents in to the water bodies, will adversely affect its aquatic fauna. There is an urgent need to provide environmental education among the common people to avoid water pollution.

Keyword: *Phosphates (detergents), dissolved oxygen, freshwater, Labeo-rohita.*

1. Introduction

Water is one of the most important gifts to mankind and is very essential of life. On a global scale, human activities have created several environmental problems of the hydrosphere. For agricultural purposes human uses chemical fertilizers, pesticides, insecticides which create great problem to the ecology and environment.

Detergents are used by the households for the purpose of washing in each and every home. Domestic sewage is dumped into nearby water bodies. Detergents are not fully degraded even after sewage treatment and their discharge into the river cause serious problems of pollution. Detergents can also be wetting agents which lower the surface tension of the water and act as clearing agents. It also affect on growth of floating aquatic weeds (eutrophication), temperature of water, PH of water, salinity of water, turbidity of water & dissolved oxygen of water. Labeo-rohita is a common freshwater fish, inhibit brackish & freshwater. The food of Labeo-rohita consists of plants (algae & macrophytes) and animal matter (protozoa, rotifers, cladocerans, copepods, molluses, annelids and insects) besides unidentified matter (UM) sand/ mud and detritus. The present study is an evaluation of the effect of different concentration of detergent on dissolved oxygen consumption by Labeo-rohita. Dissolved oxygen consumption increased when it was exposed to the water containing detergents with an increase in the concentration of the detergent, also the breathing rate increased and signs of stress were exhibited by the fish. This study is very important because domestic utilization of detergent pollutes our fresh water fauna.

Large number of brands of detergent powders and flakes are available in the market; the composition of a typical packaged detergenti.e. polyphosphate, sodium silicate and sodium sulphate [1]. Excessive amount of phosphate in detergents are responsible for eutrophication of natural waters and brunt the diversity of plankton [2].The toxic and median lethal levels of the detergents were 6 and 3 % respectively. They suggested that the detergent affects the feeding; growth metabolic rate and conversion efficiency were decreased with increasing concentrations of the detergent in the fish *Macropoduscupanus*. These detergents were found to interfere with the food utilization, growth and conversion of fishes [3]. Detergents also bring reduction in the biochemical contents in the tissues of aquatic animals. The 24hrs LC_{50} value of detergent to *Macrobranchiumlamarrei*was 0.5%, also investigated the reduction in glycogen, protein and lipid contents of tissues of prawn with increase in concentration and time of exposure [4]. With the various concentrations of detergents fishes shows various types of behavioral changes, like slow swimming movement, bleeding through the gills. They occurs loss of nervous control, fishes along lateral side of body. Body was slimy due to mucus secretion from epithelium of gills. Even at the low concentration fishes are died due bleeding through gills with both detergent powders [5].

The main aim to study and find the effect of pollution on fish due to addition of concentration of detergent in water which reflects information regarding dissolved oxygen consumption by the fish specially Labeo-rohita.

2. Materials and Methods

2.1 Materials

For the present study, fish samples were collected from Sai Dam near manjra river in the Latur District and the weight of the fish was recorded (200 to 250 gm). Water samles for the experiment were collected from aquarium tank. i.e. 100 p.p.m, 200 p.p.m, 300 p.p.m, 400 p.p.m of the popular brand of detergent Nirma were prepared in the sample water and were kept for one hour. Dissolved oxygen content of the sample water was estimated using Winkler’s method. The fishes are transferred into four jars. Similarly four control jars with 100 p.p.m, 200 p.p.m, 300 p.p.m& 400 p.p.m with different concentrations of detergents were kept. After one hour, water samples were collected and the content of dissolved oxygen (DO) is estimated by Winkler’s method. The difference between the amounts of DO in the samples with detergent and that of detergent & fish provides the amount of DO consumed by the fish for that particular concentration of detergent. Similarly DO consumed by fish in other water samples was calculated. All the experimental work was repeated thrice for accuracy and is reported in the Table 1& shown in Fig. 1.

2.2. Method to Estimate Dissolved Oxygen (DO)

Water sample for estimation after the experiment was taken in 250 ml bottles Taking care to reduce the contact of this water to air and not to induce any air bubble in the sample bottle. The bottle was closed with a stopper. 1 ml of manganous sulphate & 1 ml of alkaline Iodine were poured into the bottle using separate pipettes, shake well and allowed to settle down. Shake the bottle again and 2 ml of concentrated sulphuric acid was added to this mixture and shake vigorously to digest the precipitate. 50 ml these solutions were pipetted out in to a conical flask, add 5 drops of starch solution and then titrated against sodium this sulphate solution. The end point was marked by the first complete disappearance of blue color. Repeat the experiment 2 to 3 times to take mean reading to reduce the errors.

3. Results & Discussion

Dissolved oxygen in the water sample was estimated before adding the detergent or introducing the fishes and the values averaged at 9.52 mg/L. This reading was taken as the control. DO concentration near to 10 mg/L indicated that the water sample collected for the experiment is good for the survival of fishes.

Table1. Dissolved oxygen levels under different treatments.

Sr. No.	Concentration of Detergent	Dissolved Oxygen (mg/L) (Control)	DO (mg/L) Detergent & Fish	DO (mg/L) Consumed by Fish
1.	0.0 p.p.m	9.52	7.23	2.29
2.	100 p.p.m	9.2	6.1	3.1
3.	200 p.p.m	8.88	4.14	4.74
4.	300 p.p.m	7.85	2.7	5.15
5.	400 p.p.m	7.23	1.5	5.73

Sample water treated with 100 p.p.m of detergent for 1 hour showed a mean decrease in DO of 0.32. mg./L from the control. With increased concentration of detergents at 300 p.p.m for 1 hour, DO further decrease by 1.67 mg/L from the control. This trend continued also with the sample water treated with a detergent concentration of 400 p.p.m for 1 hour, DO further decreased by 2.29 mg / L from the control was noted as indicated in Fig.1. This decrease in DO content of sample water treated with detergents was due to the presence of phosphates in detergents which readily reacts with dissolved oxygen.

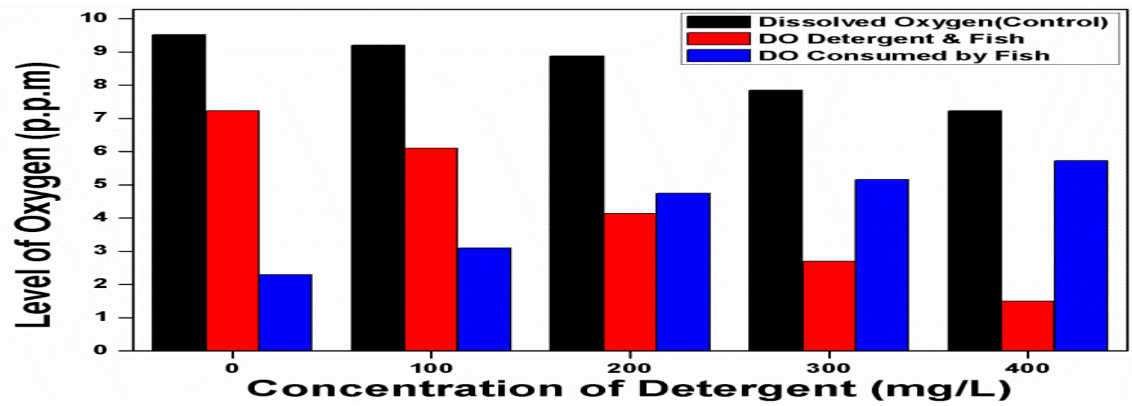

Fig. 1. Representation of dissolved oxygen levels with different treatments.

Fishes are introduced in to water containing 100 p.p.m of detergent; they started showing discomfort within 10 minutes and began to move around rapidly. With increased concentration of the detergents i.e. 200 p.p.m, 300 p.p.m& 400 p.p.m, the rapid movements reduced to around 5 to 6 min respectively. However, in all experiments, the fishes appeared inactive later and rested at the bottom of the aquarium. The experimental fishes continued to breathe rapidly and the mucous on the body surface started to come off. This phenomenon was more observed in the water with 400 p.p.m detergent. The DO consumed by the fishes showed an increasing trend with the increase in concentration of the detergent. Fishes used in control experiment (No detergent added) showed a DO consumption of 2.29 mg/L/hr. Fishes kept at 100 p.p.m of detergent concentration showed a mean consumption of 3.1 mg/L/hr with the detergent concentrations at 200 p.p.m, 300 p.p.m and 400 p.p.mThe mean DO consumption reached 4.74 mg/L/hr, 5.15 Mg/L./hr and 5.73 mg/L/hr respectively.

From this experiment it is observed that the detergent had a severe impact on the experimental fish. The fishes DO consumption increased when it was exposed to the water containing detergent. With increase in concentration of the detergent, increased breathing and signs of distress were exhibited by the fish.

4. Conclusion

Soaps and detergents are the main cleaning agents used in households. Most of the ingredients of soap are biodegradable, but that of detergent’s are not biodegradable. Hence detergents cause more water pollution than soap. From this experiment it is clear that the detergents had a severe impact on the experimental fish. (Labeo-rohita). With increasing concentration of detergent fish exhibited labored breathing and signs of distress. Above more concentration of detergents, slow swimming activities were observed. This study points out the fact that indiscriminate use of the detergents affects an aquatic life. People need to be made aware of the adverse effects of detergents on various forms of aquatic life. Sewage water generated from households should not be allowed to be discharged directly in to the water bodies, better sewage treatment facilities have to be looked in to for the protection of these water bodies.

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COMPARATIVE DIELECTRIC STUDY OF ACETONITRILE, CHLOROBENZENE AND XYLENE BINARY SOLUTIONS USING MICROWAVE TECHNIQUE

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ABSTRACT

Microwave dielectric characterization of different binary solutions has been studied using X-band technique at 301ºK, the heteromolecular interactions between different entities at 8.845 GHz frequency region explains the actual behavior of molecular structure in the binary solutions. The effect of microwave frequency on polarity of binary solutions has been studied with a comparative study and is explained thoroughly. Static dielectric constant, loss tangent, penetration depth, excess permittivity and Bruggeman factor has been studied comparatively.

Keywords- *Static dielectric constant, loss tangent, penetration depth, excess permittivity, Bruggeman factor and X-band technique*

1. Introduction

The information regarding frequency dependent dielectric properties of binary liquid solutions is significant both in dynamics and determination of structural variations and is identified by an efficient instrument such as X-band technique [1-5], to study these aspects X-band technique plays a significant role in perceptive of molecular assets and intermolecular exchanges in binary liquids [6]. It is the need to analyze the effect of microwaves on different aspects such as physical as well as chemical significance on the food products. Basically the frequency dependent dielectric behavior of liquid mixtures provides information regarding actual mechanisms of molecular processes. The dielectric properties of heterogeneous binary solutions under changing field or temperature with different composition is exceptionally important, as it helps in obtaining information regarding intermolecular interactions, bonding and cooperative nature between solute-solute, solute-solvent in the mixtures [7-15].

Acetonitrile is a simple organic colorless nitrile compound, has chemical formula as [CH_3CN]. It is a polar, aprotic solvent, miscible in water, has been used in purification of butadiene and is widely used in applications of battery because its dielectric constant value is large [16] and it can dissolve in electrolytes, also used as a solvent in production of pharmaceuticals and photographic films [17-19].

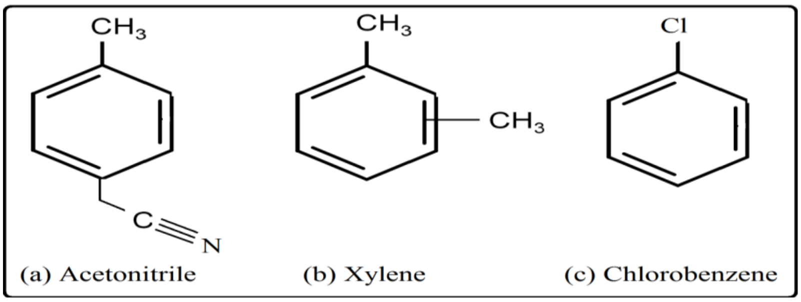


Fig. 1 Structure of ACN, Xylene and CBZ.

Xylene is an aromatic compound, colorless, flammable liquid mostly used as a solvent [20-21]. Chlorobenzene is a non-associative, colorless, flammable, aromatic organic compound liquid with chemical formula [C_6H_5Cl]. It is chlorine group molecule and used as an intermediate for production of commodities such that in herbicides, dyestuffs and rubber [22]. The structures of ACN, Xylene and CBZ are given in figure 1.

Dielectric relaxation of binary solutions of CBZ, ACN and Xylene at 301° K employing X-band microwave technique at 8.845 GHz of frequency is studied to reveal the associated information. It is exciting to study the outcome of nitrile, C-H and Chlorine group molecules in the binary systems with each other. Static dielectric permittivity, dielectric loss, penetration depth, loss tangent, excess permittivity and Bruggeman factor has been studied in comparison with each other.

2 Experimental details

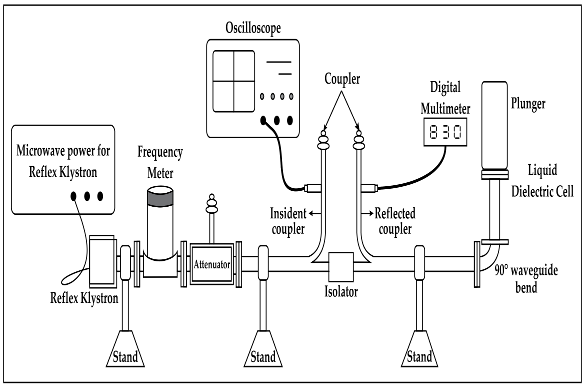
2.1 Materials

Acetonitrile (HPLC grade, Sai Pharma, Pune), Xylene (AR grade Himedia Laboratories Pvt. Ltd. Mumbai) and Chlorobenzene, (AR grade, s d fiNE-Chem Limited, Bombay) were used without further purification. The solutions were prepared at different volume fractions.

2.2 Measurements

The dielectric constant, dielectric loss and other parameters were obtained using an X-band microwave technique [1-5]. X-band setup consist of a klystron power supply, microwave bench (including microwave source), liquid dielectric cell with plunger having model no. X-910 and digital multi-meter for power output measurement. Beam voltage of 160 V with 15 mA of beam current is applied to reflex klystron. Repeller voltage of 70 V is recorded with 50 µA of incident current. The CRO and DMM are used to calibrate the input, output power. In this technique two couplers used are separated by an isolator for measurement of forward current (I_f) and reflected current (Ir) using detector mount, connected to DMM or CRO. Guided wavelength, wavelength in liquid dielectric cell and voltage standing wave ratio (VSWR) is measured using this setup. Further the values of VSWR, incident and reflected current were used to obtain dielectric parameters. The actual photograph and experimental setup of microwave bench along with liquid dielectric cell is shown in figure 2 (a) and (b) respectively.

(a)



(b)

Fig. 2 (a) Actual Photograph and **(b)** Experimental setup of X-Band microwave technique with liquid dielectric cell.

3. Results and Discussions

X-band microwave technique using liquid dielectric cell is used to find the static dielectric constant and other parameters. This method is the most suitable for accurate measurement of non-polar or weak polar or diluted polar liquids. The experimental values of forward and reflected current i.e., I_f and I_r are used to calculate ε' and ε" indirectly by using the following equation as [1],

$$\mathrm{VSWR} = \frac{(I_f + I_r) + 2\sqrt{I_f I_r}}{I_f - I_r} \qquad (1)$$

Reflected peak currents for Xylene, CBZ and ACN within the waveguide are shown in figure 3. With increase in the distance of plunger from surface of material medium, the waveforms gets flattened that is waves are damped such that maximum reflected waveforms are absorbed in the medium and maximum loss takes place as shown in figure3.

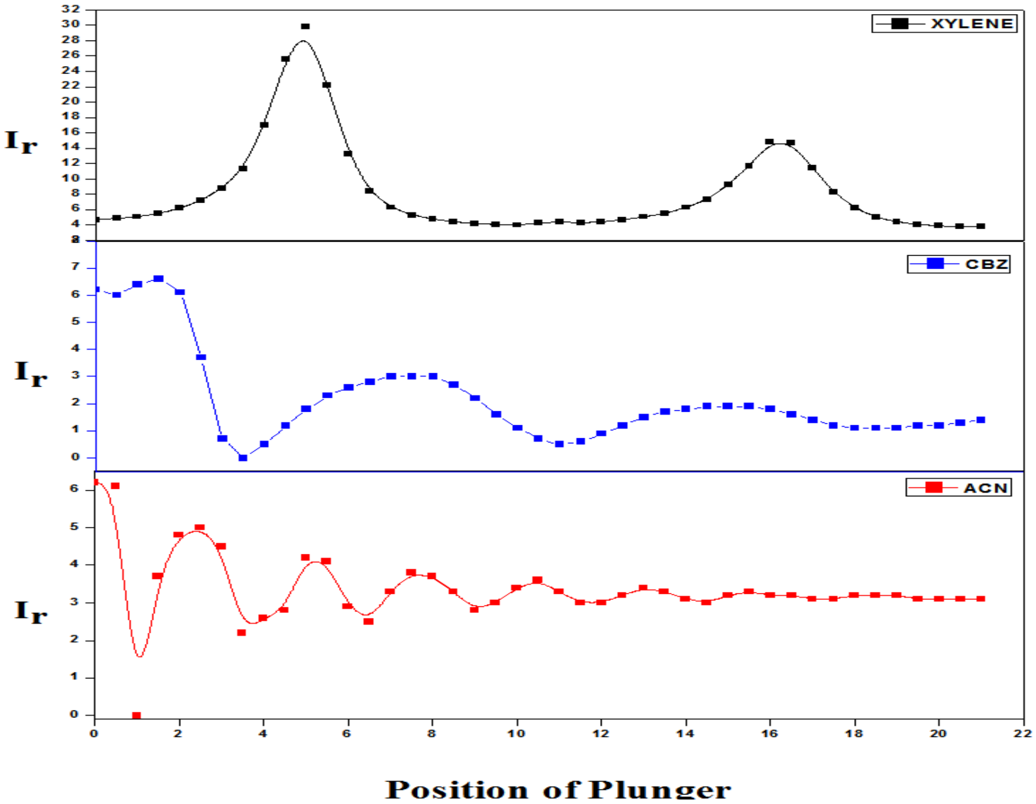


Fig. 3 Waveforms within waveguide for Xylene, CBZ and ACN respectively

Application of microwaves on first medium hit normally to the surface of second medium (dielectric material) and due to which some part of energy is reflected, other part is transmitted through surface while remaining part is absorbed by the liquid material and this energy is categorized into three parts, gives rise to the concept of dielectric permittivity of the material. The complex relative permittivity of the material is expressed as [1],

$$\varepsilon = \varepsilon' - j\varepsilon'' \qquad (2)$$

The static dielectric permittivity and loss is calculated by the following equations as [1-2, 4],

$$\varepsilon' = \left(\frac{\lambda_o}{\lambda_c}\right)^2 + \left(\frac{\lambda_o}{\lambda_d}\right)^2 \qquad (3)$$

$$\varepsilon'' = \frac{2}{\pi}\left(\frac{\lambda_o}{\lambda_d}\right)^2 + \left(\frac{\lambda_g}{\lambda_d}\right)^2 \frac{d\rho_{mean}}{dn} \qquad (4)$$

where, ε is the relative permittivity, ε' is the relative real permittivity or static dielectric constant and ε" is the relative imaginary part or dielectric loss, λ_o is the free space wavelength, λ_d is the wavelength in the dielectric cell, λ_c is the cut-off wavelength which is equal to 2a, as 'a' is the width of the waveguide. To eliminate the losses, a graph is plotted between several mean values of ρ_n versus n. The value of $\frac{d\rho_{mean}}{dn}$ is taken from the slope of this graph [23-24].

It is clear that variation of solute in the sovent causes change in static dielectric constant which is affected due to heterogeneous interactions [25-26] between Xylene + CBZ, ACN + CBZ and Xylene + ACN binary solutions which may create structural variations. Variation in these parameters are tabulated in Table 2. Excess permittivity values are positive as well as negative for Xylene + CBZ and for CBZ + ACN and Xylene + ACN all values are negative. Peak negative value for CBZ + ACN and Xylene + ACN is at 0.4 volume concenration of binary solutions.

Table 1. Dielectric parameters for ACN, CBZ and Xylene at 301° K.

Liquid	Experimental (This Work)		Literature Value [7,18]	
	ε'	g^{eff}	ε'	g^{eff}
Acetonitrile	33.549	0.76	33.08	0.88
CBZ	4.92	0.60	5.11	0.94
Xylene	2.64	2.97	2.23	-----

Table 2. Dielectric constant, loss and excess permittivity for different concentration of binary mixtures at 301° K.

V_X	Xylene+CBZ			CBZ+ACN			Xylene+ACN		
	ε'	ε''	ε'^E	ε'	ε''	ε'^E	ε'	ε''	ε'^E
0.0	2.642	0.185	0.000	4.924	1.068	0.000	2.642	0.038	0.000
0.2	3.401	0.868	0.174	9.552	2.637	0.442	7.425	0.533	-3.211
0.4	3.745	0.588	-0.017	16.109	3.332	-1.204	12.829	7.001	-5.077
0.6	3.940	0.044	0.189	20.894	8.264	-0.264	18.263	07.887	-4.522
0.8	4.642	0.254	0.302	28.267	5.495	-1.097	28.267	8.127	-3.587
1.0	4.924	1.069	0.000	33.549	30.669	0.000	33.549	30.676	0.000

Loss tangent is defined as the ratio of dielectric loss to the permittivity of material. Increase in dielectric loss and decrease in permittivity increases loss tangent. Loss tangent is calculated by the following equation [1, 27]

$$Tan\,\delta = \frac{\varepsilon'}{\varepsilon''} \quad (5)$$

Penetration depth is defined as the depth where the power gets reduced to 1/e of its surface value. The value of e = 2.7183, which is about 37 % of its value at material surface, the penetration depth is obtained using the following relation as [1, 27],

$$P_d = \frac{\lambda_o\sqrt{\varepsilon_r'}}{2\pi\varepsilon_r'} \quad (6)$$

where, ε' is the dielectric constant, ε'' is the dielectric loss, λ_o is the free space wavelength, λ_d is the wavelength in the dielectric cell, λ_c is the cut-off wavelength which is equal to 2a, as 'a' is the width of the waveguide, Tan δ is loss tangent, P_d is penetration depth, λ and ε_r' has their usual meanings.

In the present context, in all binary mixtures loss tangent is fluctuating and goes on increasing with increasing solute in solvent. Whereas in penetration depth, as the concentration of solute increases, the values of 'P_d' goes on decreasing as shown in figure 4 (b). CBZ + ACN and Xylene + ACN shows same kind of curve in which the penetration depth goes on decreasing with increase in acetonitrile in CBZ and Xylene respectively.

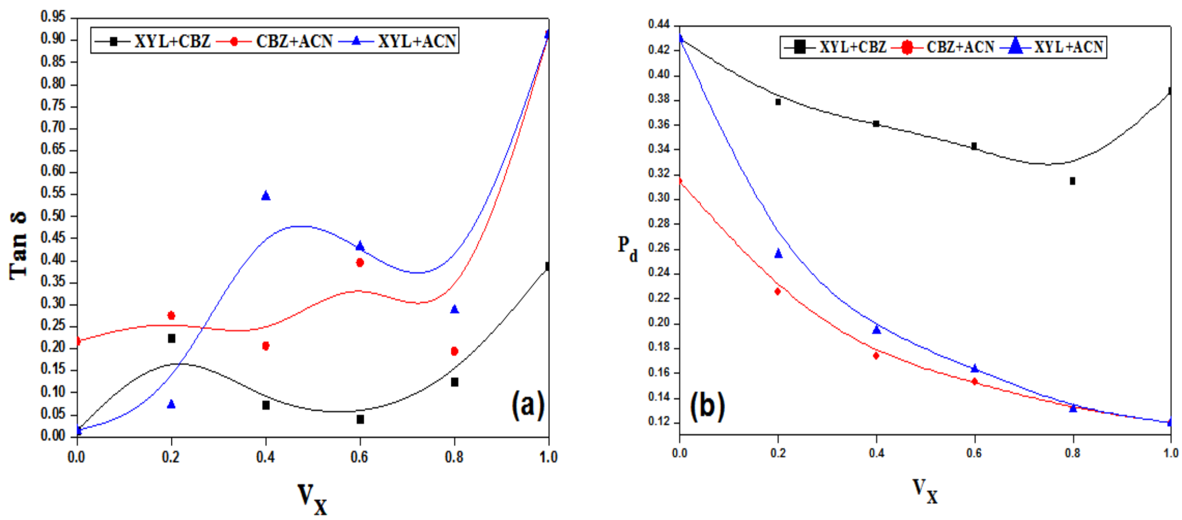


Fig. 4 Variation of **(a)** Loss tangent **(b)** Penetration depth with volume fraction of solute at 301° K.

But in case of Xylene + CBZ the penetration depth goes on decreasing up to volume concentration of 0.8 of solute and then it will increases for solvent value. The present experimental values and literature values as reported in Table 1 are closer to each other indicating the verification of the obtained data.

Information regarding the interaction [28] between constituents of mixture is explained by excess permittivity (ε'^E) and is given as [29],

$$\varepsilon'^E = (\varepsilon')_m - [(\varepsilon')_1 V_1 + (\varepsilon')_2(1 - V_1)] \quad (7)$$

where, the subscript m, 1 and 2 represent mixture, solute and solvent respectively and V_1 represent the volume fraction of solute in mixture. Excess permittivity gives information in order to acknowledge interaction between the elements of mixture. In present study, Xylene + CBZ has positive values of excess permittivity with weak intermolecular interactions and that for CBZ + ACN and Xylene + ACN has negative values of excess permittivity for all concentrations with strong intermolecular interactions as tabulated in table 2 [30-31].

Bruggeman gives the information regarding the static permittivity of the liquid and is given as [32],

$$f_B = \left[\frac{(\varepsilon'_m - \varepsilon'_1)}{(\varepsilon'_2 - \varepsilon'_1)}\right]\left[\frac{\varepsilon'_2}{\varepsilon'_m}\right]^{\frac{1}{3}} = 1 - V_2 \qquad (8)$$

The Bruggeman equation has been modified for binary liquid mixtures [32] as,

$$f_B = \left[\frac{(\varepsilon'_m - \varepsilon'_1)}{(\varepsilon'_2 - \varepsilon'_1)}\right]\left[\frac{\varepsilon'_2}{\varepsilon'_m}\right]^{\frac{1}{3}} = 1 - [a - (a-1)V_2]V_2 \qquad (9)$$

where, f_B is the Bruggeman factor, ε'_m, ε'_1 and ε'_2 are the static dielectric permittivity corresponding to the mixture, solute and solvent respectively and V_2 is the volume fraction of solvent. Parameter 'a' is nothing but interaction parameters and is sign of change in the orientation of molecules, experimentally calculated by least square fit method. Change in the value of 'a' is the determination of strength of intermolecular interaction between solute and solvent molecules, indicates deviation from ideal behavior of mixture [33].

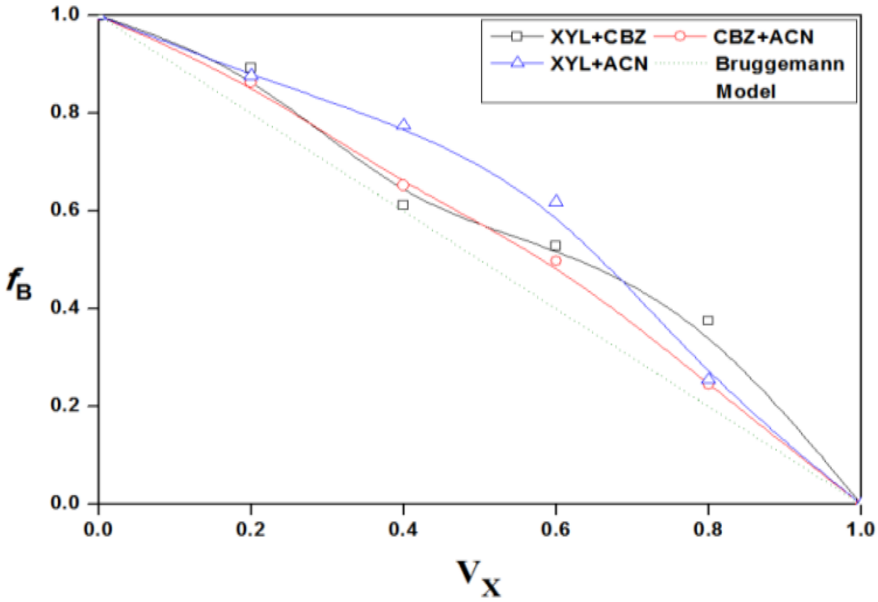


Fig. 5 Variation in Bruggeman factor with volume fraction of solute at 301° K.

Bruggeman factor for Xylene + ACN, Xylene + CBZ and ACN + CBZ is less than unity which indicates increased dipoles [34] with value of 'a' to become 0.72, 0.61 and 0.55 respectively.

4. Conclusion

The experimentally obtained values of all the binary solutions provide good qualitative information regarding static dielectric constant in comparison. Bruggeman values for all solutions are less than one which shows increased dipoles thereby confirming the change in molecular structure of molecules in mixture with different concentrations. In case of excess permittivity the values are positive as well as negative for Xylene CBZ and for CBZ + ACN and Xylene + ACN all values are negative.

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