A COMPARATIVE ANALYSIS OF THE IMPACT OF ROBOTICS AND ARTIFICIAL INTELLIGENCE ON BUSINESS MANAGEMENT AND ECONOMICS

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ABSTRACT

During the digitalisation, involvement of AI and robotics are one of the strategies in marketing and identification of the consumer's behaviour for economic development. Technological innovation or AI helped to perform multidimensional activities for decreasing time in organisational management. According to the LastWorld Economic Forum, the involvement of AI and robotics helped to increase the economic standard. Eventually, it helped to increase the GDP rate in India. The AI helped in the predictive analysis to make appropriate strategies for the management of the organisation's performances. It has decreased the taxation rate and training cost for the reinvention of effective business strategies for economic development. Apart from huge benefits, it has been detected that decreasing employment rate and increasing data insecurity and data breached makes a negative impact on AI and robotics. Implementation of the AI ethics and rules and better encryption process could be effective to decrease the negative impact of AI and robotics. The retail industry, aerospace, manufacturing industry and research institute is using AI for maintenance of the business productivity.

AI helped to improve the consumer's relationship, implementation of the strategic plan and mass production to increase interaction among the people. The development of AI platforms is equally important to eradicate the chances of the data being breached. Implementation of robotics helped to reduce training costs for the reinvention of the organisation's performances. Effective staff policies are important to develop for decreasing the turnover rate worldwide. The recommendation section has discussed some effective strategies to eradicate the limitation of using AI and robotics in business and economics.

Keywords: Artificial Intelligence, GDP, Robotics, employment ratio, economic, business development.

Introduction

The dramatic changes in digitalisation and technological innovation has promoted efficiency and developed labour productivity to make significant changes in business and economics. During this industrial age, most innovators are focusing on digitalisation or technological innovation for increasing organisational productivity. The evaluation of robotics and Artificial intelligence (AI), affected employment by increasing the demand of employees and displacing employees with robotics. The *e-government initiatives* helped to make huge transformation on the business, it has introduced with the e-signature, e-payment, e-commerce and mobile banking for minimisation of the work process. AI is enabled to increase near about **$450 to $500 bn** for increasing the Indian GDP rate near about **15% by 2025** [1]. It has been detected that the retail sector would be able to touch nearly **$1.4 trillion** by **2024**, with the help of AI. In addition to this, the AI helped in predictive analysis, return management and fraud detection to secure different sectors in India.

Different AI platforms, such as *AiKon, Mosaic AI and Infosys NIA* take the initiative for providing security to business management activities [2]. During the COVID situation, the Indian government is pushing the digitalisation or automation process for ensuring the organisation's productivity. Evaluation of the AI is beneficial to increase the value in three different sectors, such as finance and banking sectors, retail and goods and agricultural sectors [3]. Moreover, robotics and AI both are

significantly important to provide real-life benefits increasing productivity, decreasing product's costs, pushing innovation and decreasing products cost. The AI gave the opportunity to adopt innovative technologies, review the performance activities. AI is enabled to promote predictive analysis to make appropriate decisions for increasing the organisation's profitability. Besides, the uses of robotics or the automation process make huge changes in the business. The robotic transformation helped to promote the global economy.

Most multinational companies and research institutes increase the awareness of robotics for increasing the rate of productivity in India. India's aerospace and health care centres have developed the automation process for achieving competitive advantages. The development of the **3D printing model** helped to clarify the consumer's understanding level [4]. Apart from the numerous advantages, it has been detected that the implementation of AI and robotics makes a negative impact on the employment rate. The increasing jobless ratio due to AI and robotics has a negative impact on the organisation's performance. This research article will focus on the impact of AI and robotics to determine the significant changes in the organisation's productivity and economic development. The research article is aiming to focus on the economic and business management changes for ensuring the organisation's productiveness.

The Indian government authority has introduced different AI regulations to diminish the employment issues and cybercrime and maintenance of the data security for the maintenance of the efficiency in the adaptation of AI and robotics. This research article will comparatively analyse the significance of AI and robotics on business and economics.

Literature Review

Automation and productivity

The automation process helped to increase productivity in India, it is beneficial to the companies and employees to adopt problem-solving strategies for the betterment of the business performances. The automation process helped to decrease 45% of the repetitive work [5]. It helps to reduce the working periods which is significantly important for the reinvention of the organisation's productivity. According to the current record, it has been detected that from 1995 to 2018, the automation process has provided 327,000 jobs in the manufacturing sector [6]. It has been detected that the organisation's annual revenue has increased by about 60% [7]. Moreover, it has decreased the employment rate worldwide.

Impact of AI on business and economics

The AI process involves machine and human faculties to make decisions for better business performances. It involves cognition and calculation for economic development. In the case of robots, it does not require any people for the job performances.

The implementation of AI helped to enhance the economic stability in different sectors. AI implementation helped to explore innovative ideas, it enthusiast the labours for the implementation of digitalisation. It involves experts to enhance the technological skills for providing data security. It ensures maturity in the AI platform for promoting the organisation's performance. The agricultural sectors are using soil predicting and monitoring systems for crop cycle management. This process helped to enhance the GDP rate by about 17% in the agricultural sector. On the other hand, the retail industry is using AI to develop ML power for recommendations and customisations [8]. Moreover, the inventory management system was significantly important for the improvement of the customer's experiences. Besides these, the transport industry has developed a **traffic management system** and *semi-autonomous vehicle programme* with the help of AI decreasing labour cost and traffic congestion rates with more safety. It has been detected that the implementation of AI has increased 40% of the economic profitability. Nearly 90% of the

retailers have developed AI for economic development [9].

Table 2: Industrial robots

China	1,40,000
US	33,300
India	4,300
Germany	20,500

Method and materials

The research article has followed a secondary qualitative research method to collect authentic information on AI and robotics on the economic prosperity and business development process. The positivism research philosophy has been used to complete the research article. The explanatory research design has been used to justify the theory and key regulations of AI and robotics that are important in business development [14]. Authentic researched papers with peer-reviewed journals have been used for collecting information on the selected topic. All inclusion and exclusion criteria have been considered like publication date, authors, keywords, country-specific data to complete this research article.

Discussion

During the digitisation process, AI and robotics made huge advantages for increasing the organisation's productivity. According to the severe research, it has been detected that the involvement of AI is more beneficial than robotics. India is a developing country, increasing the unemployment rate is responsible for decreasing the country's economic development. AI involves machines and humans to ensure the productivity rate. Replacing humans with robots helps to maintain accuracy in organisational activities and reduces labour costs. On the other hand, increasing turnover rate makes a negative impact on the country's economic stability. It

is beneficial to consider the employment regulations and AI regulations for eradication of the increasing conflicts in business firms [15]. AI is significantly important for the embodiment, it helps to make combinations among the monitors, sensor and actuator. These are significantly beneficial to engage robotics for better collaboration. According to recent research, the use of small drones is helping for carrying packages and delivering medicines for decreasing time consumption.

Implementation of the AI helped to maintain the economic development in different sectors for enhancement of the organisation's productivity. Involvement of the AI is essential for the predictive analysis for detecting anomalies and consumer's feedback to make changes according to the organisation's performances. The AI process helped to increase the interaction among people by the involvement of different software for the business transformation in India.

Conclusion and Recommendations
Recommendations

During digitalisation, data breaching has significantly increased, the innovators need to be sure about data security. Uses of the encrypted data are essential for embedding AI and robotics for the business development

Encouraging people to use AI and robotics are essential. It has been detected that many employees are intended to follow the traditional method rather than technological innovation.

Another important strategy is to train employees to use AI for organisational innovation and increasing productivity[16]. This research paper has followed all ethical activities for further research on a similar topic.

Conclusion

During this digital age, the importance of AI and robotics has increased for ensuring organisational productivity and economic development. Maintenance of the data protection rule is essential to eradicate the possibility of data insecurity. Throughout this research article, a comparative analysis on digitalisation helped to enhance knowledge on economic stability and organisational activities. The introduction has given a general view of

the research topic. The literature review has provided authentic information for the justification of the research articles. The secondary and qualitative research method has been used to reach the conclusion. According to comparative analysis, AI is more effective than robotics in economic and business development.

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PERFORMANCE MANAGEMENT EVALUATION – A STUDY TO DETERMINE THE RELATIONSHIP BETWEEN EMPLOYER LOYALTY AND INCREASING ECONOMIC RESULTS

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ABSTRACT

To determine the relevance of employee loyalty in performance management and the viability of incorporating it into performance evaluations, this research was performed. The vast majority believe that their devotion should be recognized and rewarded. A study was performed utilizing an online question type and a questionnaire to obtain information regarding Employee Loyalty, relate it to Performance Of the organization, and solicit participants' opinions on its incorporation in Performance Evaluations. An investigation into employee loyalty and business performance was undertaken in order to determine how employee loyalty affects company performance. As a result of a variety of statistical analyses, it has been determined that employee loyalty has a positive impact on company performance. A sense of inferiority can emerge in employees when their bosses demand them to behave in a way that is in congruent with their self-images. The converse is also true. It would be almost impossible to translate staff dedication to client attention when there is such a mismatch. As a result, value congruence - the alignment of employee values with those of the business - is crucial. Affective commitment affects employee loyalty through work performance and pleasure. Consistent values have been proven to boost job satisfaction, which in turn leads to an increase in commitment and employee loyalty.

Keywords—Performance, management, Evaluation, Employee Loyalty, Organization, Commitment, Job satisfaction

I. INTRODUCTION

If an organization's performance is defined as the capacity to fulfill its objectives, then it's doing well. As a result, the business's objectives, business plans, and particular objectives, as well as the business 's performance, should be linked and interconnected. When it comes to complex organizations, performance measurement is a notion that permits the synchronization of component elements. When it comes to the management of strategies, technologies, and procedures, organizations that can use concepts and techniques for evaluating performance are going to have a competitive edge. Measuring firm performance implies having simpler sufficient knowledge and experience to create strategies and integrate management activities like main objective, decision-making, and performance evaluation. The appropriate selection of leading factors for performance assessment is a necessary requirement for achieving the objectives.

The subject is extremely significant for business organizations since employee loyalty is critical to the success of the business. Service businesses create revenue by delivering services and are dependent on human resources.

Employee loyalty is defined as employees' dedication to the achievement of the business and their belief that working for this business is their best alternative. Loyal workers are committed to the organization and strive to provide the finest service possible, which has an immediate and substantial impact on the service business's performance.

Positive results like as work satisfaction, affiliation with the firm, and organizational commitment result from value congruence. These good results are extremely important for both businesses and people. This person has a sense of fulfillment from their work and assists

the business in lowering costs, reduces turnover, and promoting extra role behavior, which eventually leads to a good mindset.

II. PERFORMANCE MANAGEMENT AND EVALUATION:

Performance management is a collaborative effort between an employee and his or her supervisors to improve performance, establish Effective feedback and communications, foster employee development and growth, and develop objectives that are aligned with department/college strategic goals [1].

In table1. We show Performance management includes performance evaluations. The key differences between the two are mentioned here.

Table 1 Performance management includes performance evaluations

Serial No	Performance Management	Performance Evaluation
1	Shown as a regular, continuous practice.	Considered as an annual event
2	Performance evaluation and employee development are the goals of procedures.	Surveys are used to evaluate employee performance and rate them according to their abilities.
3	There is a lot of positive and negative feedback that is given.	Evaluation/review discussions are where most feedback happens.
4	Ongoing discussions take place often, with official meetings at least 2 times a year.	Whenever a raise is granted or performance issues arise, there are discussions.
5	Training and development of employees are a priority	Focus it's all about the evaluation

III. 5 STEPS TO A PERFORMANCE EVALUATION SYSTEM

Developing a strong global workforce requires performance assessments, which allow employers to gauge their workers' contributions. Performance assessments are put on the back burner by some physicians and practice managers because of the time and difficulty in criticizing personnel with whom they work very closely [2]. The advantages of performance assessments, on the other hand, far outweigh the disadvantages of them. In conjunction with a basic evaluation form, basic performance measures, feedback rules, and disciplinary procedures, a performance evaluation can start enforcing acceptable performance boundaries, encourage employee's acknowledgement and communication skills, and

encourage people to do their better for themselves and for the practice as a whole.

Primary aims of a performance assessment system include providing a fair assessment of an employees who contribute to the workforce, truly deserve evaluation paperwork to protect both the employee and employer, as well as producing high-quality work. Follow these five steps to build a performance evaluation system in your practice:

1. Analyze performance indicators.
2. Make disciplinary and termination guidelines.
3. Establish a timetable for evaluations.
4. Create feedback guidelines.
5. Create an assessment form.

The final system should also be reviewed by an expert to discover any potential legal issues that need to be addressed.
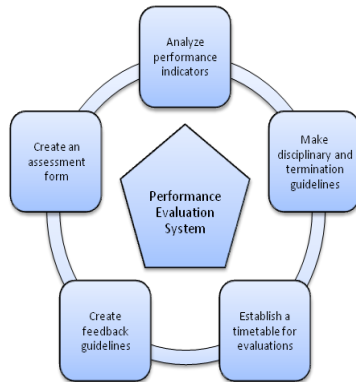

Fig 1. Performance Evaluation System

A. *Analyze performance indicators.*

You may save time and tension by utilizing standard performance metrics, which enable you to assess an employee's work performance objectively [3]. A performance evaluation program's most potent metric is the ones that take the most effort to design.

If you have existing job descriptions for each role in your practice, you've already made the first step towards developing standardized performance measures, which are basically defined quality and quantity targets associated with the activities mentioned in a job role. If you're analyzing whether an employee's abilities meet the criteria of the position, a job description alone might function as a measurement tool during an evaluation. However, typical performance measures go beyond the job description. One responsibility stated in a receptionist's job role may be inputting new and updated customer enrollment into the computer. The usual performance metric for that activity might be entering 6 to 12 submissions each day (quantity) with an error rate of less than 2%. (quality).

Standardized performance metrics can also be used to accurately gauge some of the more personal aspects of job performance, such as work ethics. For example, you may create an objective standard of attendance by specifying the number of times an employee can be late or absent within a given time period.

Standardized performance measurements, on the other hand, may not necessarily work for other personal domains, such as attitudes [4]. In these circumstances, it is still critical to be as accurate as possible in your assessment. Instead of attempting to define attitude, describe the employee's conduct, which communicates the attitude, and the implications of that behavior for the practice. For instance, this employee has not been supportive of her coworkers. Whenever another employee of their department is away, she declines to take on the extra responsibilities needed to process customers on time. This conduct creates a backlog of patients, exerts a strain on personnel, and frequency is set efficient cooperation.

Examine the job requirements for each role and pick the essential components of the work that may be precisely quantified to begin creating standardized performance metrics in your practice. Then, collaborate with workers in each position to collect quantitative data, analyses historical volume tendencies, and identify qualitative metrics that represent the organization's mission and aspirations. Based on the size of your practice and the number of jobs that require standardized performance metrics, you may wish to create a committee to design them. The managers should then manage them with the assistance of the employees in each position [5]. It is critical to keep job titles and standardized performance metrics as up to date as feasible. However, if an employee fails to meet your goals, you won't know if he or she has a quality issue or whether your assumptions of the role are becoming unreasonable due to increasing volume or a change in policy.

B. *Make disciplinary and termination guidelines.*

In certain situations, an employee will continue to perform badly even after a comprehensive performance assessment and discussion of projected changes [6]. You must be equipped to help with such a scenario by implementing possibly the best, written disciplinary and reinstatement procedures. When performance deteriorates, these processes should define the steps that will be done - a verbal warning, a written warning if there is no improvements or a repeat, and termination if the problem is not finally remedied.

a) **Verbal warning.** It should be done privately, and the conduct or cause for the disciplining should be explained explicitly. "I noticed you speaking inappropriately to another employee at the front work station," for instance. You declared her brain-dead and threw a chart at her [7]. We will not accept workplace rudeness. This eruption could also be heard from the reception area. If this happens again, a report will be prepared and stored in your record. Do you realize how important this is?" Allow the employee to reply after the verbal warning, but keep the conversation concise.

b) **Written warning.** The manner in which you handle the written warning is crucial to the effectiveness of your disciplinary and termination processes. This is the time to make it obvious to the employee how severe the issue with his or her performance is. However, many practices fail to do so and/or to terminate employees if required. When a written warning is mistreated in this manner, it loses all credibility.

C. Establish a timetable for evaluations.

Once you've created your performance assessment system, which includes the evaluation form, measures of performance, feedback standards, and disciplinary processes, you only need to select when to perform the evaluations. Some practices perform all employee assessments at same time of the year, and others do it within 30 days of each employee's anniversary of employment (the latter may work better because it distributes out the effort of the evaluations for both the company and the employee) [8]. Regardless of how you choose to arrange the evaluations, be certain that each appraisal regularly meets the deadlines. Ignoring delayed employee assessments will make them feel undervalued and may have a negative impact on morale and performance.

D. Create feedback guidelines.

Performance assessments are all about feedback. In table 2. We show other words, before you execute your performance assessment system, make sure everyone who will be conducting assessments knows what sort of advice to offer, how to do it, as well as how to obtain it back from the employee [9].

Table 2 Create feedback guidelines

Provide balanced feedback.	If you're going to hire someone, don't make the mistake of completely glossed over their shortcomings and concentrating on only their strong points. Employees may take responsibility of their performance and position in the practice by identifying their shortcomings. People learn how to take pleasure in their job when provided the assistance they need to make progress in these areas.

Outline your goals for progress.	When addressing areas for improvement, describe your expectations for improvement and how you plan to assist the employee in meeting them. For example, if an employee is talking angrily to other workers and does not appear to be tolerant with clients, provide instances of his or her conduct and provide solutions to the problem, such as role-playing exercises or a communication skills/customer-service program or conference [10]. Define the limits by informing the employee of what is and is not appropriate, and then develop a plan for evaluating progress and re-evaluating the individual.
Encourage employees to provide feedback.	Encourage employees to provide non-defensive comments once you've discussed the evaluation results with him or her. Inquire whether the employee agreed with your evaluation and/or encourage recommendations for improvement. For instance: "When the doctor is late, you seem to become impatient and short with the patients." Since there are instances when being late is unavoidable, how do you recommend we approach this to avoid such a reaction?" This should result in an open transmission of data, allowing you and the individual to better comprehend each other's points of view.

E. Create an assessment form.

To safeguard your workers' interests and to protect your practice from legal responsibility, performance assessments should be done fairly, regularly, and objectively. Using a uniform assessment form for each evaluation is one method to maintain uniformity. The forms you use should only cover the key aspects of work effectiveness. Reducing these areas of concern makes the evaluation more interesting and meaningful, allowing you and the employee to focus on the topics that are most important to you. In an evaluation, you do not need to go through every aspect of an employee's performance [11].

The job performance categories that should be covered on a performance assessment form for most staff jobs includes job knowledge and skills, quality of work, amount of work, work habits, and attitude. The evaluator must have a variety of descriptions to select from in each area (e.g., far below requirements, below requirements, meets requirements, exceeds requirements, far exceeds requirements). Based on how detailed the descriptions are, it is frequently necessary for the evaluator to have room on the form to explain his or her assessment.

Performance assessments for people in leadership roles should include more than only the above-mentioned important work performance categories [12]. They should also evaluate the employee's interpersonal abilities, capacity to inspire and direct, general communication skills, and ability to create teams and resolve issues. Managers should be evaluated using a different form, or a particular management component can be included to your normal assessment task.

IV. RELATIONSHIPS BETWEEN VARIABLES:

Businesses strive to maximize their income during an economic downturn, and their tactics are mostly focused on cost reduction, which has an

influence on corporate performance. Because this study focuses on service business, the variables

that impact production efficiency and performance are focused with people and services.

Because there are several characteristics linked to workers and commodities that have an impact on organization success, we focused on employee loyalty, quality of service, and reduced costs as the characteristics that have an impact on performance of all studied service organizations in this study. Employee loyalty influences service quality because loyal workers want to deliver the finest available services of high quality. Furthermore, service quality has an impact on cost reduction in many ways, because excellent service decreases the chance of mistakes, repair, and reclamation, as well as aiding in customer retention. Lowering expenses has a direct impact on increased services and higher organization performance, therefore lower costs have an impact on performance.

A. *Employee loyalty*

A substantial corpus of conceptual and empirical study has been conducted on the impact of workers on corporate performance. Employee performance or the influence of employee fulfillment on business performance and Fuller, if excellent organization employee relations successfully function as a durable resource related with higher financial and market performance compared to other business [13]. Although the topic of employee well-being at work has gained prominence in the thoughts of administrators, there is still little indication that attention has been paid to the relationship between employee well-being and performance.

Employee loyalty has a huge influence on corporate performance. Employee happiness, loyalty, productivity, and profitability are all linked. He concluded that there was a significant positive connection between these factors [14]. Employee attitudes, such as employee loyalty, and their impact on operational performance have received little attention, despite the fact that loyal employees are more capable and have a direct effect on delivering a higher quality of service, which has an informal impact on company performance [15]. Loyalty behaviors will improve the service business's market share and profitability, and if workers are dedicated to the organization and working at a greater level, this will have an

adverse effect and a good influence on organizational performance.

Fig 2. Employee Loyalty

B. *Concept of Value Congruence*

There is a distinction between human and organizational values. Human values are a set of standards that regulate an individual's behavior and determine what is good and bad depending on judgement. Organizational values, on the other hand, are a set of actions that are suggested by the firm and have shown to be beneficial to the company's success. Consistency of values refers to the alignment of the values held by workers and the organization [16].

Job happiness, connection with the business, and willingness to remain are all good results of value congruence. Pleasant feelings attachment to one's job is connected to employee satisfaction. Employees' job happiness improves when they share interests with their coworkers. There is a strong link between value congruence and work happiness. Employees are happier when their beliefs align with those of other members of the business.

CONCLUSION

In this research we study about Performance management evaluation and its difference we also review of the five steps to a performance evaluation management that five steps we briefly discussed these steps are first analyze performance indicators; second make disciplinary and termination guidelines; third establish a timetable for evaluations; fourth create feedback guidelines; fifth create an assessment form and last we examine the relationship between variables are employee loyalty and concept of value congruence.

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BEHAVIORAL MONITORING AND BLOCKING OF A CYBER MALWARE USING BLOCK CHAIN,MACHINE LEARING AND VAPT:A REVIEW

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ABSTRACT

"Security is extremely important role for users in terms of Digital India and Internet Era and IOT. Every user is now accessing data and moving towards digitization within the today's internet world, we are handing information everywhere within the organization due to handling huge number of knowledge, we face numerous problems of cyber malwares. One among the cyber malware is Ransom ware. Ransom ware consists of two words ransom and malware. It propagates through a various sensitive factors. When it spreads it's going to lock your machine and encrypts your machine, its impact performs various functions like confidential data stolen, data misuse and un au- theorized access. We are performing on machine but during working user click on unsolicited link then But what if machine is locked with presence of antivirus on your machine. The purpose of the Literature review is to study the different countermeasures methodologies of Ransom ware attack. Referring the researched & implemented models around the subject The study shows that the Ransom ware attacks are real threat to the cyber world. Along with this, more than hundreds of thousand computer systems were attacked by massive cyber-attack that encrypt all the files and ask about ransom. Persistent & Prevalent threat impact, to an organization, due to lack of totality in detection, management & prevention of this attack, led me to explore more to create a preventive framework, which can be followed to prevent the outbreak of this attack. This report provides understanding of ransom wares and discusses in review recent detection techniques, There are plenty of research & solutions already happened in this subject, proved that the researches happened, were in isolation approaches and no complete and wholesome approach / framework was built around the same. But still organizations are vulnerable to the data corruption and data loss against this attack. Due to several gaps in the current research work around this subject, Hence, there is a need to have a preventive framework against this attack than just a tool or platform, which has been ineffective till date, made me inclined to focus research towards drafting a framework, which can be followed by organizations to reduce the probability and impact of this attack..

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Keywords: Digital India, Cyber malware, Ransom ware, Security, Block chain, power shell

Introduction

Intent of Research

The intent of taking up this research topic, was after
•	Reading the scientific journals & conference papers.
•	Referring the researched & implemented models around the subject.
•	Persistent & Prevalent threat impact, to an organization, due to lack of totality in detection, management & prevention of this attack, led me to explore more to create a preventive framework, which can be followed to prevent the outbreak of this attack.

Literature review

The Rise of Ransom ware (Zakaria, 2017, December)

Zakaria, W. Z. A., Abdollah, M. F., Mohd, O., &Ariffin, A. F. M. (2017, December).The rise of ransomware.In Proceedings of the 2017 International Conference on Software and e-Business (pp. 66-70).

Authors in (Zakaria, 2017, December) punctually pay special attention to local Ransom ware which is also one of the most frightening cyber threats. They concentrate fiercely ransom ware meaning, infection vector, specific categories, and social phases, based on literature review of academic theses

they naturally conclude various active research areas of ransom ware.

Age of Ransom ware (Kiru, (2019))

Kiru, M. U., &Jantan, A. B. (2019). The Age of Ransomware: Understanding Ransomware and Its Countermeasures. In Artificial Intelligence and Security Challenges in Emerging Networks (pp. 1-37).IGI Global.

Authors in (Kiru, (2019)) focus Review on understanding on ransom ware and its effective countermeasure. Now a modern day's ransom wares a big frightening threat of the digital world. It enthusiastically describes depth study of appropriate review and on ransom ware meaning, ideal types of ransom ware, remarkable history of ransom ware, possible variants, traditionally working of ransom ware and common attack targets and some preventative steps.

Survey on Ransom ware: A New Era of Cyber Attack (Gandhi, (2017)

Gandhi, K. A. (2017). Survey on ransomware: a new era of cyber attack. International Journal of Computer Applications, 168(3).

Authors in (Gandhi, (2017))Focus solely on effective countermeasures, literature study, now an in today's world ransom wares efficiently is most popular crime realistically is cybercrime. It enthusiastically describes ransom ware meaning, ideal types of ransom ware, and working efficiently of ransom ware, protection preventative steps, and security policies.

Study on ransom ware attack and its prevention (Gupta, (2017).

Gupta, G., &Tripathi, K. (2017). Study on ransomware attack and its prevention. IntEduc Res J, 3(5), 260-262.

Authors in (Gupta, (2017).) Focus Solely on effective countermeasures, literature study, local Ransom ware is typically a serious and growing cyber security issue. It enthusiastically describes ransom ware meaning, potential impact of ransom ware, and working efficiently of ransom ware, preventative methods.

Ransom ware: A Cyber Extortion (Salvi, (2016).)

Salvi, M. H. U., &Kerkar, M. R. V. (2016).Ransomware: A cyber extortion. Asian Journal For Convergence In Technology (AJCT) ISSN-2350-1146, 2.

Authors in (Salvi, (2016).)relying solely on successful safeguards, literature study. It enthusiastically describes ransom ware propagation method, various ransom wares, modern countries typically affected, staying stage and economic future of ransom ware.

Ransom ware: Evolution, Mitigation and Prevention (Richardson, 2017)

Richardson, R., & North, M. M. (2017).Ransomware: Evolution, mitigation and prevention. International Management Review, 13(1), 10.

Authors in (Richardson, 2017) Traditionally present a brief history of ransom ware, the reasonable arguments and Against paying the ransom, best practices to typically prevent an active infection and to properly recover from an potential infection should One invariably happens.

Ransom ware, Threat and Detection Techniques: A Review(Kok, (2019).)

Kok, S., Abdullah, A., Jhanjhi, N., &Supramaniam, M. (2019).Ransomware, threat and detection techniques: A review. International Journal of Computer Science and Network Security, 19(2), 136.

Authors in (Kok, (2019).) Prime objectives of this published paper efficiently are to generously provide a thorough understanding of ransom ware's consistent threat and adequately discuss recent detection techniques used.Emphasize on lifecycle, setup behavior, unique types of ransom ware, detection technique.

Ransom ware: Current Trend, Challenges, and Research Directions(Popoola, (2017).)

Popoola, S. I., Ojewande, S. O., Sweetwilliams, F. O., John, S. N., &Atayero, A. A. (2017). Ransomware: current trend, challenges, and research directions.

Authors in (Popoola, (2017).) A brief overview of the current trend, challenges, and research progress in the successful bid to instantly finding lasting solutions to the direct menace of ransom ware that currently challenge computer and network security and data privacy.

Ransom ware analysis: IOT security issues, Challenges and open problem in the context of worldwide scenario of security of system and malware attack(Sharma, (2016).)

Sharma, P., Zawar, S., &Patil, S. B. (2016).Ransomware Analysis: Internet of Things (Iot) Security Issues, Challenges and Open Problems Inthe Context of Worldwide Scenario of Security of Systems and Malware Attacks. In International conference on recent Innovation in Engineering and Management (Vol. 2, No. 3, pp. 177-184).

Authors in(Sharma, (2016).)Paper ensures the awareness of Ransom ware attack, its analysis during the course of time from its origination, geographical attacking analysis and operating system-based attacks. The analysis and results end up with the major achievement as the awareness and counter measures. Thus, it will play a key role in safe use of Digital India, E-Governance, E-Commerce, and IoT.

A Comprehensive Survey: Ransom ware Attacks Prevention, Monitoring and Damage Control(Tailor, 2017)

Tailor, J. P., & Patel, A. D. (2017). A comprehensive survey: ransomware attacks prevention, monitoring and damage control. Int. J. Res. Sci. Innov, 4(15), 116-121.

Authors in(Tailor, 2017) paper ensures the awareness of Ransom ware attack, ransom ware analysis, life cycle of windows, Presents A Comprehensive Survey on detection and prevention method

Virtualized Environment for Mitigating Ransom ware Threat(Shukla, (2016, October))

Shukla, M., Mondal, S., &Lodha, S. (2016, October). Poster: Locally virtualized environment for mitigating ransomware threat. In proceedings of the 2016 ACM SIGSAC conference on computer and communications security (pp. 1784-1786).

Authors in (Shukla, (2016, October)) Implements a technique that monitor suspicious activity for a file system that is POSTER.A solution that is based on behavior of Ransom ware on Windows 7 Platform. The result shows that possibility to detect old as well as new variant of Ransom ware family

Recovery from Crypto Ransom ware Infections(Weckstén, (2016, October).)

Weckstén, M., Frick, J., Sjöström, A., &Järpe, E. (2016, October).A novel method for recovery from Crypto Ransomware infections.In 2016 2nd IEEE International Conference on Computer and Communications (ICCC) (pp. 1354-1358).IEEE.

Authors in (Weckstén, (2016, October).)Creates a solution in the form of east to use script that run on Windows 7 platform. The system shows that by using proper preventive measures such as updated antivirus, updated operating system and software, proper backup and well configured firewall one can easily restored the system to the normal state as it before encrypted state. The analysis is done on most recent and common 4 crypto Ransom ware samples

Ransom ware Inside out (Tandon, (2019))

Tandon, A., &Nayyar, A. (2019). A comprehensive survey on ransomware attack: a growing havoc cyberthreat. Data Management, Analytics and Innovation, 403-420.

Authors in (Tandon, (2019)) proposed a method on android platform. With the help of Ransom ware characterizing behavior from code snippets and by manually inspecting over 600 Ransom ware samples to create dataset, they created set of rules to identify behavior of Ransom ware attacks.

RansomSafeDroid[(Yalew, 2017, October).)

Yalew, S. D., Maguire, G. Q., Haridi, S., &Correia, M. (2017, October). Hail to the Thief: Protecting data from mobile ransomware with ransomsafedroid. In 2017 IEEE 16th International Symposium on Network Computing and Applications (NCA) (pp. 1-8). IEEE.

Authors in (Yalew, 2017, October).) Presents RansomSafeDroid system which is hardware extension that is incorporated into ARM processor for android mobile devices that is service provided on Trust Zone based backup. It first takes full backup of system and then does incremental backup that allows saving from last backup to the external storage to protect from cryptographic Ransom ware.

Ransom ware: Studying Transfer and Mitigation(Shinde, (2016, December).)

Shinde, R., Van der Veeken, P., Van Schooten, S., & van den Berg, J. (2016, December). Ransomware: Studying transfer and mitigation. In 2016 International Conference on Computing, Analytics and Security Trends (CAST) (pp. 90-95). IEEE.

Authors in (Shinde, (2016, December).) Studied Ransom ware attacks with conducting interview and survey of victimized and non-victimized people and the result were analyzed by using statistical analysis by using different factors such as age, education, awareness. And result shows that it is irresponsibility and dependency for attack on IT department of other employee makes attack happened.

HELDROID: Dissecting and Detecting Mobile Ransom ware(Andronio)

Andronio, N., Zanero, S., & Maggi, F. (2015, November).Heldroid: Dissecting and detecting mobile ransomware. In international symposium on recent advances in intrusion detection (pp. 382-404).Springer, Cham.

Authors in(Andronio, (2015, November).)Implemented HelDroid system on android platform that is real time detection system for Android Ransom ware samples. The system is tested on large dataset near about hundreds of thousands APK's that contains Good ware, scare ware and Ransom ware samples. Result shows that system has near about zero false positive rate and 99% capability of recognizing new Ransom ware samples on Android platform.

Experimental Analysis of Ransom ware on Windows and Android Platforms(Zavarsky, (2016).)

Zavarsky, P., &Lindskog, D. (2016). Experimental analysis of ransomware on windows and android platforms: Evolution and characterization. Procedia Computer Science, 94, 465-472.

Authors in (Zavarsky, (2016).) Analyze Ransom ware attack for its characteristics and their evolution. Analysis is done on different samples of Ransom ware families on Windowsand android platform by using PEiD tool. And result shows that Ransom ware families are similar working but uses different payloads. Also, accurate detection of local Ransom ware is possible by accurately analyzing abnormal file system and registry activity on ideal Windows platform.

Pay Break method(Kolodenker, 2017, April)

Kolodenker, E., Koch, W., Stringhini, G., &Egele, M. (2017, April).Paybreak: Defense against cryptographic ransomware. In Proceedings of the 2017 ACM on Asia Conference on Computer and Communications Security (pp. 599-611).

Authors in (Kolodenker, 2017, April) Describes the approach that is Pay Break that defeat the threat of Crypto based ransom ware

on Windows 7 Platform, was evaluated against 170 Ransom ware samples from 20 recent Ransom ware families collected b using RADDAR that is Real-time Automation to Discover, Detect and Alert of Ransom ware. And can restore data that was encrypted by 12 ransom ware families that are obtained from Virus Total Intelligence, Malc0de, and VXVault

Bayesian Networks Approach (Zimba, (2017, July))

Zimba, A., Wang, Z., & Chen, H. (2017, July).Reasoning crypto ransomware infection vectors with Bayesian networks.In 2017 IEEE International Conference on Intelligence and Security Informatics (ISI) (pp. 149-151).IEEE.

Authors in (Zimba, (2017, July)) Creates model for Ransom ware that uses Bayesian network statistics for detection or evidence of most common type of Ransom ware attack infection by using most common infection vector of Ransom ware attacks such as Spam mails. The system works to detect crypto Ransom ware family.

Trends and Mitigation Techniques(Adamov, 2017, September)

Adamov, A., &Carlsson, A. (2017, September).The state of ransomware.Trends and mitigation techniques. In 2017 IEEE East-West Design & Test Symposium (EWDTS) (pp. 1-8). IEEE.

Authors in (Adamov, 2017, September)Analyze the payload of most common types of Ransomware family like VaultCrypt (CrypVault), TeslaCrypt, NanoLocker, Trojan-Ransom. Linux.Cryptor, Android Simplelocker, OSX/KeRanger-A, WannaCry, Petya, NotPetya, Cerber, Spora, Serpent ransomware on different platform such as Windows, Android, Linux, and MacOS

Big Data Architecture(Chong, 2017)

Chong, H. (2017). SeCBD: the application idea from study evaluation of ransomware attack

method in big data architecture. Procedia computer science, 116, 358-364.

Authors in (Chong, 2017) Analyze from study of evaluation of most common Ransom ware attack on Big Data Architecture.SeCBD that is secure Big Data Architecture a preventive mechanism that result in most common Crypto Ransom ware attack family have a chance to prevent, detect and disabled.

Ransom ware: Let's Fight Back(Chadha, 2017, May)

Chadha, S., & Kumar, U. (2017, May).Ransomware: Let's fight back!.In 2017 International Conference on Computing, Communication and Automation (ICCCA) (pp. 925-930). IEEE

Authors in (Chadha, 2017, May) Presenting self-learning algorithm using machine learning technique to detect the Ransom ware attack. The dataset contains 3473 legitimate and 131 malicious and prepared by analyzing network traffic for single day of an organization

Detection and Prevention of CryptoRansom ware(Gonzalez, 2017, October)

Gonzalez, D., &Hayajneh, T. (2017, October).Detection and prevention of crypto-ransomware.In 2017 IEEE 8th Annual Ubiquitous Computing, Electronics and Mobile Communication Conference (UEMCON) (pp. 472-478).IEEE.

Authors in (Gonzalez, 2017, October) Investigates or discusses most common types of crypto Ransom ware families and their methods of attacks, their infection types, what type of files are affected, typical behavior of crypto Ransom ware attack. It also listed prevention methods from crypto Ransom ware attack.

Ransom ware: The Crypto Virus Subverting Cloud Security(Bhattacharya, 2017, February)

Bhattacharya, S., & Kumar, C. R. S. (2017, February).Ransomware: The CryptoVirus

subverting cloud security. In 2017 International Conference on Algorithms, Methodology, Models and Applications in Emerging Technologies (ICAMMAET) (pp. 1-6).IEEE.

Authors in (Bhattacharya, 2017, February) Reviewed cloud architecture for vulnerability of possible Ransom ware attack and suggest possible mitigation techniques to overcome from Ransom ware attacks

Exploit kit method (Raunak, 2017)

Raunak, P., & Krishnan, P. (2017). Network detection of ransomware delivered by exploit kit. ARPN Journal of Engineering and Applied Sciences, 12(12), 3885-3889.

Authors in (Raunak, 2017) proposed a framework that prevent and detect Ransom ware attack. The framework allows user to prevent data from being encrypted by using certificate Authority Checker. And detects malicious communication with the help of SDN by using static and dynamic analysis with network traffic pattern and signature of Ransom ware attack

Study on ransom ware attack and its prevention(Mohurle, 2017)

Mohurle, S., &Patil, M. (2017). A brief study of wannacry threat: Ransomware attack 2017. International Journal of Advanced Research in Computer Science, 8(5), 1938-1940.

Authors in (Mohurle, 2017) Discuss Ransom ware attack, working of ransom ware attack, impact of attack and prevention techniques.

Survey report of FBI (Gordon, 2005)

Gordon, L. A., Loeb, M. P., Lucyshyn, W., & Richardson, R. (2005).2005 CSI/FBI computer crime and security survey. Computer Security Journal, 21(3), 1.

According to survey report (Gordon, 2005)ofFBI in 2017, various organizations had loss $2.3 million from ransom ware attacks. Approximately 4000 Attack per day happened in 2016, that is overall, 300 percent increases from 2016 during the year-long study period.

And, over 2000 new ransom ware types every month. The cost of Ransom ware attack is huge, that is it exceeded to $5 billion US Dollars, cad can be raise to $11.5 Billion US Dollars in 2019

Do Crypto-Currencies Fuel Ransom ware(Kshetri, 2017)

Kshetri, N., &Voas, J. (2017). Do crypto-currencies fuel ransomware?. IT professional, 19(5), 11-15.

Authors in (Kshetri, 2017) According to Europol's recent 2016 Internet Organized Crime Threat Assessment report, year 2016 is named as "The year of ransom ware". The detection of ransom ware attack is to observe network for certain changes like increasing in renaming of files, avoid clicking emails from unknown users. To mitigate the effect of ransom ware is prevention that is user awareness about using internet.

No Random, No Ransom: A Key to Stop Cryptographic Ransom ware(Genç, 2018, June)

Genç, Z. A., Lenzini, G., & Ryan, P. Y. (2018, June). No random, no ransom: a key to stop cryptographic ransomware. In International Conference on Detection of Intrusions and Malware, and Vulnerability Assessment (pp. 234-255).Springer, Cham.

Authors in (Genç, 2018, June) Proposed strategy that mitigate cryptographic Ransom ware attacks that is ShallNotPass the Random number generator on Windows 7 platform. The testing is done on 524 active Ransom ware sample from 31 Ransom ware family and stops 94% of attacks such as Locky, CryptoWall, CryptoLocker, WannaCry, also nullified NotPetya Ransom ware family.

Ransom ware's Early Mitigation Mechanisms (Moussaileb, 2018, August)

Moussaileb, R., Bouget, B., Palisse, A., Le Bouder, H., Cuppens, N., &Lanet, J. L. (2018, August).Ransomware's early mitigation mechanisms.In Proceedings of the 13th

International Conference on Availability, Reliability and Security (pp. 1-10).

Authors in (Moussaileb, 2018, August) Presents graph-based Ransom ware countermeasure to detect Ransom ware behavior based on file system monitoring by using machine learning techniques. The testing is done on over 770 active Ransom ware samples on Windows 7, windows 10 and 417 benign samples collected on Windows 10. And achieve 99.35% detection rate with less than 1% of False positive rate.

Forensic Analysis of Ransom ware Families using Static and Dynamic Analysis(Subedi, 2018, May)

Subedi, K. P., Budhathoki, D. R., &Dasgupta, D. (2018, May).Forensic analysis of ransomware families using static and dynamic analysis. In 2018 IEEE Security and Privacy Workshops (SPW) (pp. 180-185). IEEE.

Authors in (Subedi, 2018, May) Analyses different Ransom ware families with static and dynamic analysis using data mining technique and Reverse engineering approach. Also proposed CRSTATIC system that is static analyzer which build signature by using data mining approach based on FP-Growth a

A Key-Management-Based Taxonomy for Ransom ware algorithm.(Bajpai, 2018, May)

Bajpai, P., Sood, A. K., &Enbody, R. (2018, May).A key-management-based taxonomy for ransomware.In 2018 APWG Symposium on Electronic Crime Research (eCrime) (pp. 1-12).IEEE.

Authors in (Bajpai, 2018, May) Presented key management and cryptography models that are represented in 25 Ransom ware samples. After analyzing 25 Ransom ware samples they created 6 categories of Ransom ware attack. Whereas Category 1 means only scare wares and category 6 means flawless encryption or no method to decrypt the encryptionAnalysis is done on 450 samples of Ransom ware families

R-PackDroid(Maiorca, 2017, April)

Maiorca, D., Mercaldo, F., Giacinto, G., Visaggio, C. A., &Martinelli, F. (2017, April). R-PackDroid: API package-based characterization and detection of mobile ransomware. In Proceedings of the symposium on applied computing (pp. 1718-1723).

Authors in (Maiorca, 2017, April) Proposed machine learning-based application called R-PackDroid that runs on Android platform for detection of Android Ransomware.3017 Ransom ware samples from Virus Total are used for classification of features by using supervised learning approach of Android Ransom ware between Ransom ware attack, malware or benign. R-Pack Droid gets 97% detection rate and 1% false rate

Taxonomy of Ransom ware Threats & Mitigation Techniques(Nadir, 2018, March)

Nadir, I., &Bakhshi, T. (2018, March). Contemporary cybercrime: A taxonomy of ransomware threats & mitigation techniques. In 2018 International Conference on Computing, Mathematics and Engineering Technologies (iCoMET) (pp. 1-7).IEEE.

Authors in (Nadir, 2018, March) Presents review and recent evolution of Ransom ware attacks. Also provide classification of Ransom ware attack, preventive measures for attack, detection methods and Mitigation techniques for countermeasure of Ransom ware attacks

File Detection Technique (Choi, 2008, October)

Choi, Y. S., Kim, I. K., Oh, J. T., &Ryou, J. C. (2008, October).Pe file header analysis-based packed pe file detection technique (phad). In International Symposium on Computer Science and its Applications (pp. 28-31).IEEE.

In this paper, (Choi, 2008, October)PE HEADER analysis Packed Detection Technique was used. To pack and unpack Header files here unpacking is to detect the packed files PE header analysis works on packed encrypted files.It utilizes the fact that PE headers features of packed files and different from those   according to the

characteristics of files CV was defined with the CV ,it calculates the Euclidean distance of a given PE file and determine the status .In this only Eight features of ED are checked it means it is useful only ED.ED does not require many features .This system is only useful for eight features of ED for other features this system is failure.ED works only for packed files. Gap isFor detection of ransom ware signature based detection used which cannot detect new or unknown un sophisticated HSRs.

New generic Malware Detection Technique (Robiah, 2009)

Robiah, Y., S. SitiRahayu, M. MohdZaki, S. Shahrin, M. A. Faizal, and R. Marliza. "A new generic taxonomy on hybrid malware detection technique." arXiv preprint arXiv:0909.4860 (2009).

Authors in (Robiah, 2009)paper,Various Malware detection approaches are also accessible. Meaningfully address the Malware detection efforts are highly in limelight. And correctly precisely identify them.important requirements in each successful technique to gradually enhance the detection of potential Malware in Intrusion Detection Systems (IDS).Malware detection in Intrusion Detection System (IDS) to instantly detect malicious nature to detect malicious nature which are both topnotch and effeminateness, which can complement traditional anti-virus software at the end.

Connection-monitor & connection-breaker technique (Ahmadian, 2015, September)

Ahmadian, M. M., Shahriari, H. R., &Ghaffarian, S. M. (2015, September). Connection-monitor & connection-breaker: A novel approach for prevention and detection of high survivable ransomwares. In 2015 12th International Iranian Society of Cryptology Conference on Information Security and Cryptology (ISCISC) (pp. 79-84).IEEE.

Authors in (Ahmadian, 2015, September) have proposed a novel CM&CB Scientific method for detecting high adaptability ransom wares and. Typically preventing them from encrypting intended victim's meaningful data Uses DGA (domain generation algorithm) Detector Algorithm. For detection of ransom ware signature based detection used which cannot detect new or unknown unsophisticated HSRs this frame work is useful for so many malwares like botnet, drive by download malware botnet but the disadvantages some kind of augmented certificate is not specific to HSRs.Authors in this have proposed a novel CM&CB Scientific method for detecting high adaptability ransom wares and. Typically preventing them from encrypting intended victim's meaningful data Uses DGA (domain generation algorithm) Detector Algorithm. For detection of ransom ware signature based detection used which cannot detect new or unknown unsophisticated HSRs this frame work is useful for so many malwares like botnet, drive by download malware botnet but the disadvantages some kind of augmented certificate is not specific to HSRs.

Quantification Model (Kim, 2015)

Kim, D., & Kim, S. (2015). Design of quantification model for ransom ware prevent. World Journal of Engineering and Technology, 3(03), 203.

Authors in (Kim, 2015) have proposed to typically use for social engineering behavior pattern and reliably accurately detect any cryptographic operations in the local drive. Objectively analyze the precise observed frequencies of registered signatures and unregistered signatures.it uses social engineering and technical based quantification model.HP hash based IP track based method collect information of threat factor frequency analysis. Threat factor analysis conducts frequency analysis on user behavior pattern. In this paper, for Detection and Preventation, Quantification Model based on social engineering technique to prevent ransomware. Here Research Model is based pre detection technique rather than a post detection technique. Quantification model .This model use Hash-based IP trace back it analyzes possibility and situational frequency by conducting frequency analysis on users acess receipt opening downloading execution.

Honey pot techniques (Moore, 2016, August)

Moore, C. (2016, August). Detecting ransomware with honeypot techniques. In 2016 Cybersecurity and Cyberforensics Conference (CCC) (pp. 77-81). IEEE.

Authors in (Moore, 2016, August) have proposed honey pot to detect ransom ware activity. There really is no specific guarantee the malware would valiantly attempt to invade these active areas. and honey pot free from attack alerts is not an indicator that other areas are not being targeted Investigates system that works on windows platform, implements Honeypots that detects Ransom ware activity with two options first, File Screening service of the Microsoft File Server Resource Manager feature and second, Event Sentry to subtly manipulate the glowing Windows Security logs.

Stopping Ransom ware Attacks on User Data(Scaife, 2016, June)

Scaife, N., Carter, H., Traynor, P., & Butler, K. R. (2016, June).Cryptolock (and drop it): stopping ransomware attacks on user data. In 2016 IEEE 36th International Conference on Distributed Computing Systems (ICDCS) (pp. 303-312).IEEE.

Authors in (Scaife, 2016, June) Presents a Detection method based on early notifications is Crypto Drop that alert user for any suspicious file activity. The detection of Ransom ware can be done by using set of

behavioral indicators that are common with Ransom ware. They test their system against 492 real time Ransom ware samples with 100% detection rate and loss of 10 files out of 5100 files.

A Self-healing File system (Continella, 2016, December)

Continella, A., Guagnelli, A., Zingaro, G., De Pasquale, G., Barenghi, A., Zanero, S., & Maggi, F. (2016, December).ShieldFS: a self-healing, ransomware-aware filesystem. In Proceedings of the 32nd Annual Conference on Computer Security Applications (pp. 336-347).

Authors in (Continella, 2016, December) Implemented ShieldFS a real-world detection system that can detect malicious code on windows platform and makes windows file system immune to Ransom ware attack like an add-on driver to windows system. The experiment is done with 383 ransom ware samples and 2,245 benign applications and having false positive rate near about 12 to 15 %Materials

Camera was mounted on a tripod and kept in certain height. All the movement were captured in sagittal plane. Standard badminton court was used which is available at Lakshmibai national institute of physical education (M.P.). Standard badminton racket and shuttle were used. Video was analyzed through Kinovea 0.8.27 software. One way ANOVA was used as a statistical tool. SPSS software was used for statistical result.

Research Gap

There is plenty of research & solutions already happened in this subject, but still organizations are vulnerable to the data corruption and data loss against this attack. It is recorded that there are millions of dollars' worth data captivated form this attack and No inference was found that the data was given back after the ransom was paid.The continuity of this attack proved that the researches happened, were in isolation approaches and no complete and wholesome approach / framework was built around the same. It is also understood that, anti-ransom ware technologies built are totally context less because this is a contextual attack than a operational and hence, NO SINGLE – POINT technology can prevent this attack from happening.Hence, there is a need to have a preventive framework against this attack than just a tool or platform, which has been ineffective till date, made me inclined to focus my research towards drafting a framework, which can be followed by organizations to reduce the probability and impact of this attack

Discussion and Conclusion

The ambitious aim of the literature review by faithful heart is to diligently investigate the various countermeasures methodologies of a ransom ware attack. Graciously according to the published report, active Ransom ware attacks are intentionally a real threat to digital records. hundreds of created thousands of modern computer systems were intentionally targeted by a major cyber-attack that encrypts all selected files and demands fiercely a ransom. So, countering a Ransom ware attack is critical, and the first unique move is to tactfully avoid the active attack. The next move is morally to properly track such a focused attack, and finally, if such a concerted attack also occurs, to counteract or satisfactorily resolve the Ransom ware attack. By universally using the proposed research work correctly anticipates malware detection and prevention techniques using to create a preventative framework, which can be adopted to prevent the likelihood and impact of this attack.

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APPLICATION OF INTERPOLATION AND EXTRAPOLATION OF NEWTON AND CUBIC SPLINES TO ESTIMATE AND PREDICT THE STATISTICAL DATA RELATED TO COVID-19

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ABSTRACT

The current global scenario faced by people is the COVID-19, thus estimation of the effect of this virus on the people becomes highly mandatory. This issue can be addressed by plotting the pattern of experimental time series data and the data of COVID-19 cases prevailing in the current scenario. Functions for mathematical and statistical modelling are based on previous data available. In the current research, an attempt is made to determine a function that would help to relate and estimate the effect of COVID-19 cases and generate some sort of pattern with the function that would be useful for future research studies. Another method used is the interpolation method in which the function interpolates a given group of data points. Further, to construct and evaluate the functions by interpolation, it can also be used to predict experimental data outside the given group of data points by the use of extrapolation. The data obtained from this extrapolation can be used as an alternative to experimental data as it saves time and money. The current research also compares the interpolation and extrapolation of both Newton method and cubic splines. It was observed that the cubic spline method is better than Newton method at approaching data, in terms of interpolation, as well as extrapolation.

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Keywords: *COVID-19, Cubic Spline Interpolation, Extrapolation and Time series data**, Newton Interpolation.*

Introduction

According to WHO, in early December there was a steep increase in pneumonia cases in Wuhan, China and the people who visited sea food and live animal market in Wuhan. In research it was found that it was being caused by a new virus named as corona virus subsequently known as covid-19 which originated from Wuhan China spread worldwide. Public health emergency was declared with increasing seriousness of the diseases and increasing number of the covid cases.

COVID-19 is a type of respiratory infection with exhibits common symptoms such as fever, cough, respiratory problems, shortness of breath, and breathing difficulties. In severe cases, infection leads pneumonia, severe acute respiratory syndrome, kidney failure, and death[1][2]. Corona virus is a large group of

viruses that has protein spokes that resemble a crown and contains an enveloped genetic material.

Talking about the origin of this corona virus, generally corona virus is a virus which spread among animals but sometimes they can also spread among humans from animals and then from one human to another. The pace of the corona virus was however very fast and grabbed almost the whole world within a few months. The spill over of corona virus from animal to human may have taken place due to mutation property of this virus. If an infected person talks, sneezes or coughs near another uninfected person then the uninfected person may also get infected due to coming in contact of the virus laden droplets. A healthy uninfected person may also get infected by this

corona virus when he/ she touches any object which has already virus on its surfaces. When the person touches that type of virus laden object surface and then touches his/ her nose or mouth then there is a high probability for that person to get infected by the corona virus.

A person who comes in contact to this virus and get infected may show its symptoms after 5-14 days from the day of getting infected. Those symptoms many range from mild to severe or even some people do not show symptoms at all in the beginning.

Generally around 80 percent of the infected persons get well automatically without any special treatment but some report serious illness and the need to be treated separately. The most common group of people at risks are the older people, persons with chronic respiratory diseases, person facing , diabetes , obesity, high blood pressure, heart disease or cancer. These people must take necessary precautions to avoid this virus as much as possible. The diagnosis of this virus is done by a test called REVERSE TRANSCRIPTASE POLYMERASE CHAIN REACTION in short RT- PCR. This test identifies the corona virus based on its genetic fingerprint. Blood tests may also be done to check the antibody count to check whether a person is infected with the virus or not.

Although the situation is worse in European and American region after it got stabilized in China, the conditions in South Asia are deteriorating fast (Fig 1.1). India is the leading region in South Asian region which is the second most populous country in the world after China
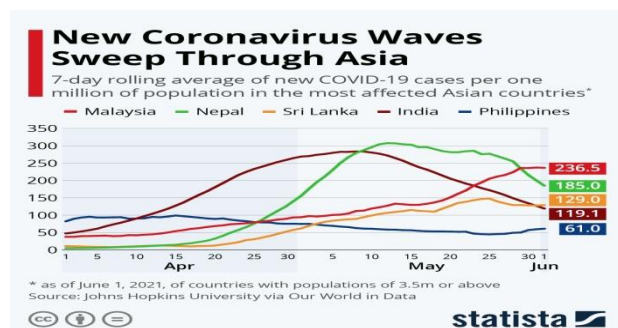

Figure 1. Corona waves

Since the mechanisms of COVID-19 spreading are not completely understood, the number of infected people is large and the effects of containment are evaluated essentially on an empirical basis. Therefore, a more quantitative analysis of the epidemic spreading can be interesting. There have been many modelling approaches presented by various mathematicians and researchers in recent time for different countries such as China [3-7], Italy [8-11], France [8][12], USA [13-15], and South Korea [16-17]. For the Indian region, very less studies have been reported so far and some notable work has been done by people from ICMR [18] and other researchers [19-21]. Except from the mathematical modelling presented by the practitioners from Indian Council of Medical Research, there are no prediction and forecasting models available in the Indian context. From the analysis point of view, a lot of studies have been conducted using time series forecasting models like ARIMA [22-24] and Exponential smoothing [25-27]. These are standard techniques which give decent predictions and forecasts on time series data in quick time. These techniques have been selected based on their wide acceptance in the research community and quick implementation for the various stakeholders to act. The objective of the current study was to analyse the COVID-19 outbreak situation in India and assess the trends in near future. Also, the study aims to take an overview of the preparedness levels of this outbreak from Indian Government. The scope of this study is limited to building forecasting models for Indian region and uses time series which is available under a CC-BY-NC-ND 4.0 International license. perpetuity. preprint (which was not certified by peer review) is the author/funder, who has granted medRxiv a license to display the preprint in medRxiv preprint doi: https://doi.org/10.1101/2020.03.26.20044511; this version posted March 30, 2020. The copyright holder for these 3 forecasting methods which are easy to build and easy to understand in these kinds of critical conditions. The study solely focusses on forecasting the Indian region suffering from COVID-19 outbreak.

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Proposed methodology

Interpolation, is a process of enumerating intermediate value of a function from a set of given or tabular values of that function and is defined as 'the art of reading between the lines of a table {Hummel (1947), Erdos & Turan(1938) et al}. The technique of achieving the function's value outside the given limit of arguments is acquainted as extrapolation. Besides, the term interpolation is used for both schemes. Interpolation is a numerical system of calculating the unknown dependent variable's value by means of independent variables and extensively applied in several sorts of fields such as statistics, applied mathematics, data predicting, economics as well as business problems. In practical life, the term interpolation is usually a tool for generating the data analogous and the term extrapolation is always used to find out the future's values, even forecasting future data. Interpolation can assist in counting the economic magnificence like unemployment problems, population and price growth problems etc. Interpolation is widely engaged and is a significant tool for science, engineering and medical exploration etc. The derivation of computational

manner for numerical integration, solutions, differentiations are the most useful applications of interpolation.

Further, there are lots of interpolation methods, for instance, Newton's forward and backward interpolation formula, Newton's divided difference formula, Lagrange's interpolation formula, Central difference interpolation formula, for example, Gauss's formula, Starling's formula, Bessel's formula and Laplace Everett's formula which are attainable in the literature's view of numerical analysis {Bathe & Wilson (1976), Jan (1930), Hummel (1947) et al}. The formula of interpolation with equal intervals are Newton's Gregory forward and backward interpolation. The formula of interpolation with unequal intervals are Newton's general interpolation formula and Lagrange's interpolation formula. Applied Mathematics and Sciences: An International Journal (MathSJ), Vol. 6, No. 2/3, September 2019

The Lagrange interpolation method is a renowned Classical technic for interpolation as well as exhausting to use in numerical problems. Newton's forward and backward methods, that are best appropriated for interpolating near the beginning and end of tabulated values respectively. In addition, these are unusable to interpolate near the central value of a difference table. For interpolation or gaining more proper results near the middle of the table, central difference interpolation methods are most preferable. Mathematically, suppose the function $y = f(x)$ be the functional relation involving variable x and y. If x receives the values x0-2h, x0-h, x0, x0+2h and the corresponding values of y which are y-2, y-1, y_1 and y2. Then we can get the difference table in the two notations as follows applying the, acquainted as central difference table. To acquire function's values near the middle of a table where central difference interpolation formulas are applicable in which our new method is very suitable. This method employs differences lying as nearly as possible on a horizontal line through y0 in a diagonal difference table.

In the current work, central difference interpolation formula which is derived from

Gauss's third formula have been established, from which a new method was developed for central difference interpolation.

Material and methods

Data collection

The data about the covid-19, i.e., is the daily no. of cases, daily fatalities, daily recoveries and other previous trends are collected from Health ministry of India's website which will provide us the initial data for calculating the future trend of covid cases in India. Additionally, the economic related data is collected from various sources available in order to predict covid 19's effect on the economy of India. The trends may include How the lockdowns have affected the GDP growth of India, the imports and exports and other relevant things

Polynomial Interpolation

Due to the simple structure, polynomials are effectively used as an approximation function in most numerical analysis problems [1]. The process of finding and evaluating a function whose graph goes through a given set of data points is known as interpolation. On the other hand polynomial interpolation is performed by assuming known data patterns using curves form polynomials of degree less than or equal to *n* [1][2]. There are different types of polynomial interpolation that include Lagrange, Newton and Cubic Spline polynomials. Lagrange polynomials are less preferred in practice for the reasons, such as a lower degree Lagrange interpolation is not included in the formulation of higher one as a result it is computationally expensive compared to Newton polynomial interpolation [7].

Gauss's Forward Formula

$$Y(x) = Y_0 + u\Delta Y_0 + \frac{u(u-1)}{2!}\Delta^2 Y_{-1} + \frac{u(u^2-1)(u-2)}{4!}\Delta^4 Y_{-2} + \ldots(1)$$

Gauss's Backward Formula

This formula is going to act as the base formula for Gauss's third formula.

$$Y(x) = Y_0 + u\Delta Y_{-1} + \frac{U(U+1)}{2!}\Delta^2 Y_{-1} + \frac{u(u^2-1)}{3!}\Delta^3 Y_{-2} + \frac{u(u^2-1)(u+2)}{4!}\Delta^4 Y_{-2} + \ldots(2)$$

Third Gauss's formula

To derive the Third Gauss's formula, we advance the subscripts in Gauss's Backward Formula by one unit and replacing u by u -1 then we obtain,

$$Y(X) = Y_1 + (u-1)\Delta Y_0 + \frac{u(u-1)}{2!}\Delta^2 Y_0 + \frac{u(u-1)(u-2)}{3!}\Delta^3 Y_{-1} + \frac{u(u^2-1)(u-2)}{4!}\Delta^4 Y_{-1} + \ldots(3)$$

Stirling's Interpolation Formula

Taking the Mean of the Gauss's Forward formula and the Gauss's Backward formula we get Stirling's interpolation formula as

$$Y(X) = Y_0 + \frac{u(\Delta Y_{-1} + \Delta Y_0)}{2} + \frac{u^2}{2!}\Delta^2 Y_{-1} + \frac{u(u^2-1)(\Delta^3 Y_{-2} + \Delta^3 Y_{-1})}{3! * 2} + \frac{u(u^2-1)(u^2-2^2)}{5!}\frac{\Delta^5 Y_{-3}+\Delta^5 Y_{-2}}{2} + \ldots(4)$$

Bessel's Interpolation Formula

For the derivation of Bessel's formula, taking the Mean of the Gauss's Forward formula and Third Gauss's formula thus we achieve the Bessel's Formula as

$$Y(x) = \frac{(Y_0+Y_1)}{2} + (u - \frac{1}{2})\Delta Y_0 + \frac{u(u-1)}{2!}\frac{(\Delta^2 Y_{-1}+\Delta^2 Y_0)}{2} + \frac{u(u^2-1)(u-2)(\Delta^4 Y_{-2}+\Delta^4 Y_{-1})}{4! * 2} + \frac{u(u-\frac{1}{2})(u^2-1)(u-2)}{5!}\Delta^5 Y_{-2} \ldots(5)$$

Laplace-Everett's Formula

This is a widely used interpolation formula as well as applies only even order differences, the formula has the form as

$$Y(x) = [VYo + \frac{(v^2-1)}{3!}\Delta^2 Y_{-1} + \frac{(v^2-1)v(v^2-2^2)}{5!}\Delta^4 Y_{-2} + ...] + [uY_1 + \frac{(u^2-1)u}{3!}\Delta^2 Y_o + \frac{u(u^2-1)(u^2-2^2)}{5!}\Delta^4 Y_{-1} + ...]...... \quad (06)$$

New Interpolation Method

To derive the new method first we need to derive the Gauss's Third formula which is derived by advancing the subscript of Gauss's backward formula by one unit and replacing u by u-1. Then we get

$$Y(x) = Y_{-1} + (u-1)\Delta Y_o + \frac{u(u-1)}{2!}\Delta^2 Y_o + \frac{u(u-1)(u-2)}{3!}\Delta^3 Y_{-1} + \frac{u(u2-1)(u-2)(u-3)}{4!} + \frac{u(u2-1)(u-2)(u-3)}{5!}\Delta^5 Y_{-2} ....(7)$$

Now, we retreat the subscripts of Gauss's Forward formula in equation (1) by one unit and replacing u by u+1 then we get

$$Y(X) = Y_{-1} + (u+1)\Delta Y_{-1} + \frac{u(u+1)}{2!}\Delta^2 Y_{-2} + \frac{u(u+1)(u+2)}{3!}\Delta^3 Y_{-2} + \frac{u(u+1)(u^2-2^2)}{4!}\Delta^4 Y_{-3} + \frac{U(u^2-1)(u+2)(u+3)}{5!} ....(8)$$

Therefore, taking the mean of the above two equation (7) and (8) i.e. adding (7) and (8) then dividing by 2 then we get a new method as

$$Y(x) = \frac{Y1+Y_{-1}}{2} + u[\frac{\Delta Y_{-1} + \Delta Yo}{2}] + [\frac{\Delta Y_{-1} - \Delta Y_0}{2}] + \frac{u}{2!}[\frac{(u+1)\Delta^2 Y_{-2} + (u-1)\Delta^2 Y_0}{2}] + \frac{U}{3!}[\frac{(u^2+3u+2)\Delta^3 Y_{-2} + (u^2-3u+2)\Delta^3 Y_{-1}}{2}] + \frac{u(u^2-1)}{4!}[\frac{(u+2)\Delta^4 Y_{-3} + (u-2)\Delta^4 Y_{-1}}{2}] + \frac{(u2-1)u}{5!}[(\frac{(u^2+5u+6)\Delta^5 Y_{-3} + (u^2 -5u+6)\Delta^5 Y_{-2}}{2})]...............(9)$$

This equation (9) is the required New Method of central difference interpolation.

Research Flow

The research flow diagram can be seen in (Fig. 2) below.

Maple and Matlab applications are used to implement the interpolation and extrapolation of both methods. The estimated result of hydrogen and iodine content was then compared with the actual content of each of these gases, by using the following error formula:
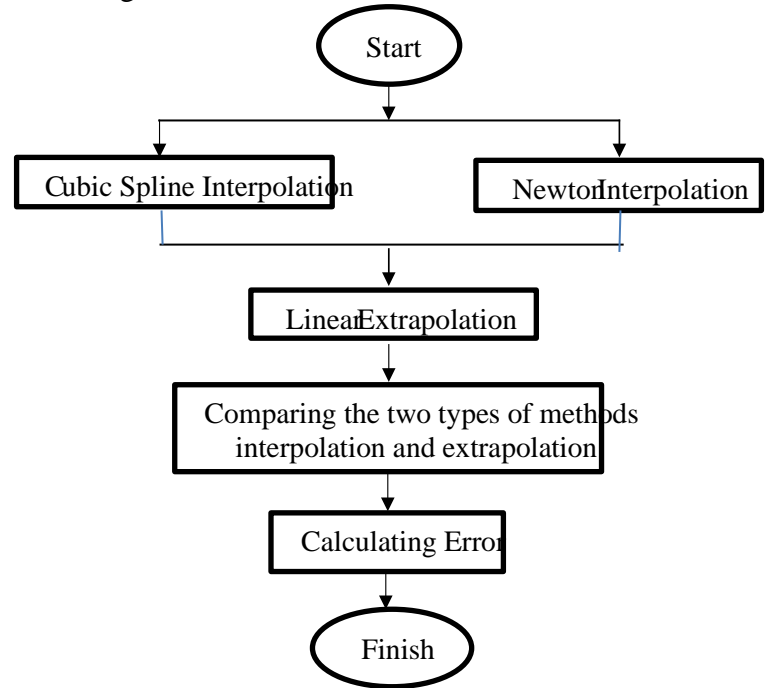
Figure 2. Flowchart of research

$$E = \frac{|xi-xj|}{xj}$$

where: x_i : interpolation value

x : true value

The difference between the interpolated results and the actual price will provide the absolute value. Standard deviation is obtained by estimating the accuracy. The formula for finding the standard deviation used is:

$$s = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(x_i - x)^2}$$

where,

n : the amount of data

x : the amount of hydrogen and iodine order i

$\bar{x}$: the mean or average of the sample data

Statistically, standard deviation is the ideal standard deviation is close to unity, variance of the data is also one. From which the goodness of the test model can be accounted and to compare the accuracy between the two algorithms, the calculation of the standard deviation relative to the other algorithms is used. Root mean square deviation or error (RMSD or RMSE) is another measure of fit which calculates the square root of the expected difference between the predicted value and the observed value [14]. The calculation formula for Root Mean Squared Error (RMSE)

$$RMSE = \sqrt{\frac{\sum_{i=1}^{n}[y_i - \hat{y}_i]^2}{n}}$$

(11)

where,

y : true value

$\hat{y}$: interpolation value

 : the amount of data

The final measure of the fitting ability used in the analysis is relative absolute error (RAE), which calculates the relative value of RMSE according to the expected observed value, as shown by the formula [11]:

$$RAE = \frac{\sqrt{\frac{\sum_{i=1}^{n}[y_i - \hat{y}_i]^2}{n}}}{\sqrt{\frac{\sum_{i=1}^{n}[yi]^2}{n}}}$$

(12)

The widespread applications of RAE are machine learning, data mining, and operations management applications, and it also represents the RMSE analogy relative to the expected value of the observed value.

The new method yielded the following equation,

Cumulative infections:
$01.08 * 10^{-6} * x^6 - .001 * x^5 + 0.1651 * x^4 - 18.127 * x^3 + 811.62 * x^2 - 11555 * x$

Table 1 Cumulative infections during 1st and 2nd wave

Sr.no	Date	Cumulative infections
1	July 1st, 2020	630000
2	August 1st ,2020	1805000
3	September 1st ,2020	3770000
4	October 1st ,2020	6392000
5	November 1st ,2020	8230000
6	March 1st ,2021	11124000
7	April 1st ,2021	12300000
8	May 1st ,2021	19550000
9	June 1st ,2021	28307000

RESULT AND DISCUSSION

Based on the equation formulated the predicted number of cases in the 3rd wave is as follows The graphs (Fig. 3) drawn based on the obtained equation and the trend of cumulative infections is estimated
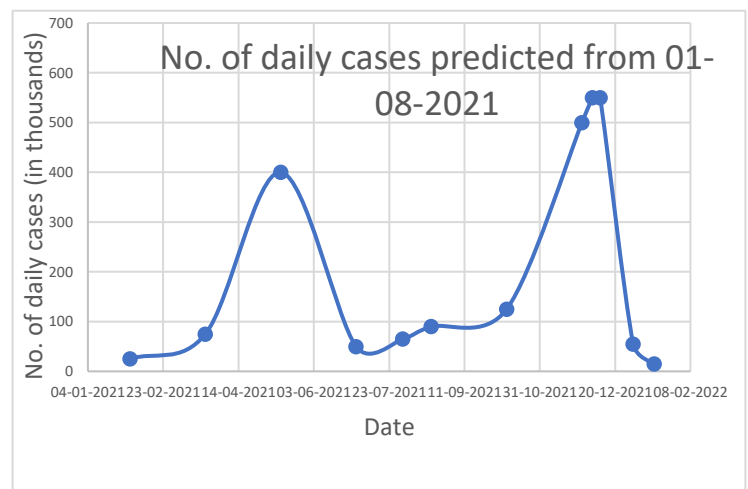

Figure. 3: Prediction of number of cased per day during the 3rd wave of COVID-19 infections

Table 2 Daily cases predicted

Sl No.	Date	No. of daily cases
1	01-08-2021	65000
2	20-08-2021	90000
3	09-10-2021	125000
4	28-11-2021	500000
5	05-12-2021	550000
6	10-12-2021	550000
7	01-01-2021	55000
8	15-01-2021	15000

The graph and table 2 predicts the future trends based on the new method and it is estimated that at the peak of the third wave of COVID-19 infections will be hit sometime in mid-December 2021 and the number of infections during the peak would be around 5,50,000. The 3rd wave duration would be significantly smaller than the first and second wave as the experience of the previous wave of the infections would help the government prepare and manage it better. The experience would also help in the manner that is followed while tracking the contacts and reducing the secondary and tertiary infection.

The number of people that are vaccinated with 1 dose is expected to be around 55% and the number of people that are vaccinated with 2 doses is expected to be 30%. And the % off vaccination will also help reduce the impact of COVID-19.

Conclusions

- Based on the new method formulated the next wave of COVID-19 cases would require even more strategic preparation as the peak of the wave would be reached in lesser amount of time than the 1st and the 2nd waves. The number of daily cases would also be around 5,50,000 which is much higher than the previous waves.

- The method is based on previous trend and the actual trend may differ entirely based on the pace at which vaccines or delivered, and the relatability and errors are calculated based on the error calculation method mentioned.

- The ventilator and ICU bed requirements can also be estimated using the same method, which will further help to better the efforts to decrease the effect of the next wave of infections

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INFLUENCE OF JUDICIAL BODIES ON INVESTIGATION OF MILITARY-ADMINISTRATIVE OFFENSES IN UKRAINE

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ABSTRACT

This article examines the problems associated with administrative offenses, and analyzes the activities of the judiciary. These problems show the importance of the effectiveness of justice in special conditions of military service, for example, as in the east of Ukraine. In my opinion, the problems discussed in this article are relevant not only for Ukraine, but also for many other countries. It has been proven that at the moment there is a need to strengthen the administrative responsibility of military personnel (including conscripts and reservists) during exercises / special forces in order to prevent them from committing offenses. Members of the armed forces must be conscientious about their service. In addition, this decision is capable of increasing the level of combat training of military units, since, as has been proven, very often violations are committed precisely because of the inability of subunits.
The judicial authorities designate the features of the process of military offenses, designate the features of problematic issues, and also determine the types of offenses committed by military personnel.
The work took into account foreign and national legislation, proposals and recommendations for the military and law enforcement agencies. Special attention was paid to the issues of standardization of the legal framework of justice by military courts both in peacetime and in wartime.

Keywords: *administrative responsibility, military administrative offence, servicemen, conscripts, military courts, qualification of the offence, judicial authorities, justice.*

1. Introduction

This article is definitely relevant in our time, because for 7 years, from 2014 to the present, the world has been shaken by the situation in eastern Ukraine, where civilians and soldiers are regularly killed. As a result, the political and socio-economic situation of the country was undermined.

It should be noted that this situation had a negative impact on offenses among the military, increasing their number several times. Therefore, the government is obliged to take urgent measures to prevent violations among the military and bring those responsible to justice.

Methods

Study the peculiarities of the activity of the judicial authorities of Ukraine in case of military-administrative offenses give us additional opportunity to improve and establish the role of the judiciary in the above violations.

In order to uncover problems and achieve goals as efficiently as possible we need to identify the most key and problematic issues related to the consideration of cases of military-administrative offenses and Analyse data on the state of countermeasures to the commission of these offenses;

Materials

As you know, in the east of Ukraine for more than 7 years there have been hostilities, as well as the annexation of the Autonomous Republic of Crimea. This prompted the country to mobilize to make every effort in the fight against illegal actions and administrative violations.

That is why, on February 5, 2015, there were changes under No. 158-VIII to the Law of Ukraine "On Amendments to Certain Legislative Acts of Ukraine Concerning Strengthening the Responsibility of Servicemen, Granting Additional Rights to Commanders and Imposing Duties in a Special Period" [1] of the Code of Administrative Offenses of Ukraine ...

Later, the code was supplemented with the main 13-B "Military administrative offenses", in which articles 172-10 - 172-20 of the Code indicate various types of offenses related to military personnel, and also determine their type and composition.

In addition, part 5 appears in Article 15 of the Code, which relies on Chapter 13-B and states that there is no criminal responsibility for military-administrative offenses. [2] Later in 2015, part 5 was supplemented, and now not only military personnel, but also reservists and conscripts can be brought to justice.

Further, in March 2017, the Law of Ukraine 1952-VIII "On Amendments to Certain Legislative Acts of Ukraine Concerning Strengthening the Responsibility of Servicemen and Certain Other Persons").

We believe this will help increase the conscientiousness of the service and ensure a higher combat readiness.

According to Professor Ostapenko, there are 59 types of offenses identified in the analysis of the actions of military personnel, which are enshrined in the legislation of Ukraine. Most of them provide for administrative responsibility and are of a preventive nature.

Administrative responsibility for violation of a military administrative offense is defined in the military-legal dictionary as <...> a form of legal responsibility of a serviceman (conscript) for an offense not related to the performance of official duties and not punishable by a criminal [4].

In Article 9 of the Code in the order of the Ministry of Defense of Ukraine dated 03/02/2021 No. 54 [5], the essence of an administrative offense of military personnel is defined as follows: an unlawful crime (intentional or negligent) action or inaction of military personnel, for which administrative responsibility is provided, as defined by Chapter 13-B of the Code [6].

Prior to this, in the order of November 29, 2018 No. 604, the content of a military administrative offense was defined only as <...> an offense committed by a serviceman, which entails administrative responsibility under Chapter 13-B of the Law. Code [7].

For military personnel (conscripts / reservists), their personal legal culture and legal awareness are very important, because they directly affect the improvement of law and discipline. At the same time, there is a factor of insufficient legal capacity, which is a significant reason for committing violations and crimes of the military-administrative type. Therefore, it is very important to create some kind of legal guarantees for the protection of the rights and legitimate interests of servicemen, the interests of the state, and of course the application of administrative measures to combat military-administrative offenses. For this, there is a system of courts that have the right to investigate cases in this area (according to Article 221 of the Code) and undertake to find out the reasons and in detail to analyze the conditions of these violations, as well as to make an objective decision. According to judicial practice, a significant part of the proceedings in cases of a military administrative offense in connection with the insignificance of the offense and with the expiration of the term of the administrative penalty is closed due to the absence of corpus delicti.

For instance is the decision in the case of Sh. On the commission of an administrative offense provided for in part 1 of Article 172-18 of the Code, which was also terminated due to the lack of an administrative offense, and the decision of the Novozavodskiy District Court of the city of Chernigov dated August 16, 2017 in relation to G ., which closed the proceedings in connection with the absence in the actions of the accused of an administrative offense, provided for by Part 2 of the state. article 172-15 of the Code [8].

There is also another important factor that quite strongly influences the prevention of offenses and the strengthening of the rule of law in general. This factor is the poor preparation by the military law enforcement agencies of materials on this case, which significantly reduces the objectivity of the decision.

One of the main disadvantages of administrative procedures in cases of violations of this type is the lack of administrative and legal qualifications for determining illegal actions / inaction of the military (as well as reservists and conscripts). At the moment, in my opinion, this problem requires careful analysis and solution.

It is also necessary to correctly understand the terminology of the word "qualification" in the Ukrainian dictionary. lang. it is interpreted as <…> 1) an action with the meaning "qualify"; 2) the degree of suitability, readiness for any type of work; 3) specialty, profession, work [9]. In the legal encyclopedia, the term "qualification" is defined as <...> characteristics of an object, phenomenon, its assignment to a certain category, group, level of theoretical and practical knowledge by profession or specialty [10 p. 71]. The well-known Ukrainian professor V. Kolpakov, characterizing the fight against organized criminal corruption, points out that <...> one of the prerequisites for qualifying administrative offenses is the actual circumstances of the commission of illegal actions or inaction [11].

Thus, taking into account all the above information and definitions, in our opinion,

the qualification of a military administrative offense is the actions of a judicial authority aimed at a legal assessment of the definition of objective and subjective signs characterizing the illegal (intentional or unintentional) actions or inaction of military personnel (conscripts / reservists) in order to establish the presence or absence of an administrative offense, as well as certain grounds and limits of bringing them, if necessary, to administrative responsibility.

It should be noted that this qualification indicates the relevance of the correct connection between the judicial authority and the offender, that is, endowing them with specific rights and obligations.

Nevertheless, in our time, very often courts in such situations are faced with circumstances that require clarification of additional facts about the commission of an offense. This is very common in the investigation of crimes in which, in order to obtain specific data on the crime, the court instructs the judicial authority to conduct an investigation and investigative actions.

We believe this is correct, because this practice can significantly reduce the number of cases in the courts of appeal. That is, it will be completely justified.

It is worth noting that in our time there are a huge number of complaints from servicemen and persons equated to them, which directly relate to the illegality of the actions of the command staff, hence the organization and service itself. That is why, in our opinion, the role of the revision of the decision in connection with the discovery of new circumstances that were not taken into account earlier will positively affect the objectivity of the court, therefore, the revision is relevant.

As noted by the Supreme Court of Ukraine in the case of February 20, 2020 No. 815/6834/15, <...> newly discovered circumstances include substantive facts that are necessary to make the correct decision.

This requires the following features of open circumstances:

- the very existence of these circumstances in the consideration and resolution of the case and the adoption of the court decision on the consideration of the application;

- at the time of the hearing, these circumstances could not be objectively known either to the applicant or to the court;

- the materiality of these circumstances for the consideration of the case (ie when the consideration of these circumstances by the court will entail a different court decision than the one that was made) [12].

However, it happens that not always new circumstances may be sufficient reason to reconsider the case. In the event that this new circumstance is discovered after a court decision and the legal position changes in connection with it, it is not considered newly discovered. Likewise, circumstances that were not timely submitted by the parties involved in the case are not newly discovered. Chapter 13-B of the Code states that when considering the issue of administrative and legal regulation, researchers are assigned new tasks each time. These tasks affect the social and military-administrative aspects that are the basis of the courts' activities in such cases. It must be said that it is precisely the circumstances of the life of society that influence the conditioning of the life of the military (even of conscripts and reservists). That is, aspects of the social conditionality of the administrative and legal opposition to the norms of Articles 172-10 - 172-20 of the Code are definitely related to the conditionality of administratively illegal actions or inaction of military personnel, conscripts and reservists.

Order of the Ministry of Defense of Ukraine dated 03/02/2021 No. 54 states that the command and control bodies of the Military Law Enforcement Service, in addition to identifying persons who collect information, must summarize and record information about events, criminal offenses, military administrative offenses and administrative offenses.

As for this issue, at the moment it causes controversy. Someone believes that the restoration of military courts (abolished in 2010) is necessary, while others are completely the opposite.

Key arguments for this:

1) Strengthening discipline;

2) Raising the level of law and order;

3) Providing justice during the period of hostilities;

4) Protection of civilians in the combat zone;

5) Increasing the combat capability and defense capability of the state;

6) Increasing the level of conscientiousness of military personnel (in the direction of respect, law and order, awareness ...)

7) Ensuring prompt, professional and objective court decisions.

Here it is worth mentioning the point of view of Myroslav Peremoha, who believes that there is no interest for the state and even common sense in the abolition of military courts. Since they were released from their duties due to independence from other higher bodies. In addition, their activities were secret, as they were associated with a closed part of society, namely the army [13].

The above is also confirmed by the Chairman of the Verkhovna Rada of Ukraine Committee on Security, Defense and Intelligence A. Zavitnevich, who believes that "the current system of pre-trial investigation does not provide an effective and rapid investigation of military actions. Ukraine and other military formations" [14].

This, in principle, was the reason for the return of the military prosecutor's office in 2014, because according to Matios, the number of criminal cases committed by the military exceeded 20 thousand, and this is only 3 years (2015-2018) [15].

It is noteworthy that the main violations were desertion and unauthorized departure from the duty station, which indicates low discipline and poor morale.

But, unfortunately, the Verkhovna Rada rejected all bills on this topic for an indefinite period, and they were submitted three times: No. 1896 of January 30, 2015 [16], No. 2557 of April 06, 2015 [17] and No. 8392 of May. August 22, 2018 [18].

At the moment, the trials are sometimes not in line with the principles of justice [19] stipulated by Article 6 on the protection of human rights and fundamental freedoms, the courts violate human rights, and the cases examined by military courts are no different from the ordinary ones [20]. In Europe, in

contrast to us, there is a unanimous opinion: "the participation in the administration of justice of a military judge with the military rank of an officer, as a member of the judicial board, despite certain guarantees of his independence, raises reasonable doubts about his independence and impartiality, which can be considered a violation of item 1 of article 6 of the Convention on Human Rights and Fundamental Freedoms" [21].

Thus, there is now an urgent need for a professional approach to the consideration of proposals and recommendations in general. It must be said that at the moment there is no clear concept that indicates and justifies the positions of the restoration of military courts. However, there are prospects and high relevance for these actions. An example is Europe, where all military courts operate independently of the military situation in the country.

We believe that the main way to resolve this issue lies in the regulation of the regulatory framework, that is, amending Article 126 of the Constitution. In our opinion, military courts should work both in wartime and in peacetime to maintain order and improve discipline in general.

Discussion and finding

Thus, at this moment there is a particular need to strengthen national security, improve law and order, military discipline and combat readiness of the country due to the situation in eastern Ukraine. This need is exacerbated by time and the state of military offenses, the number of which increases every year. Members of the armed forces must be clearly aware of their rights and responsibilities ows, as well as understand the essence of court proceedings. For example, administrative proceedings instituted against him implies the right to a defense.

We believe that one of the additional guarantees of the right to protection of servicemen is the legislative fixing of the postponement of the institution of proceedings on an administrative offence to an earlier date, which will create additional guarantees in judicial protection of the rights of servicemen and suspects. of committing a military administrative offence.

In our opinion, the following measures should be taken to strengthen military discipline in the fight against offenses:

1) Regulation of social tension between military units (there are conflicts based on terms of service and conditions of its passage);

2) Raising the level of legal culture in order to facilitate the acquisition of legal knowledge by military personnel;

3) Minimization of social contradictions in military units;

4) Eradicating bullying, which negatively affects the military personnel, especially the recruits, physically and mentally.

In addition, the reasons for the complexity of judicial practice in cases of military-administrative offenses should be noted.

These are:

1) Failure to appear at the court session of military personnel (conscripts / reservists) who were not properly notified of the time and place of the court session, forcing the judicial authorities to re-send the summons of their appearance in court;

2) Inattention and superficial approach to the study of cases, as well as to their consideration on the merits and the decision of the court;

3) Insufficient attention to evidence, evidence and the process as a whole;

4) Non-compliance of the protocols with the requirements of Articles 254, 256 of the Code and departmental regulations on the preparation of materials on administrative offenses, which is a consequence of the return of materials for revision.

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AN EMPIRICAL STUDY ON CUSTOMER EXPECTATION, PERCEPTION AND SATISFACTION ON HOUSEHOLD AND PERSONAL CARE PRODUCTS OF PATANJALI AYURVED LTD. IN SURAT CITY

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ABSTRACT

The purpose of the study is to identify the factors affecting the customer expectation, perception and satisfaction towards household and personal care products of Patanjali in Surat. The main objective of this study is to understand expectation, learn perception and measure satisfaction level of consumers using Patanjali products of the selected category. Sample size taken is 100 randomly selected respondents. A Convenient random sampling method has been used to draw samples from randomly selected respondents. PSPP software is used to analyze the data.
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Keywords: Patanjali, Household, Personal care, Customer Expectations, Perception, Satisfaction

Introduction

FMCG is another name for the fast moving consumer goods, which provides the basic products for health, hygiene and grooming for mankind. The FMCG market in India is worth $49 billion USD as of January, 2016 and is expected to grow to $103.7 billion USD by 2025. It is India's fourth largest industry. Additional expendable income of people, an increase in awareness of products and its easy access form the key factors of demand growth. The growing juvenile population has been identified as creating the demand for premium products. The rural area penetration provides and ensures the FMCG companies with newer markets and competitions. The FMCG industry has three main segments: Food and beverages (18%), Health care (32%) and Household and personal care (50%) (Figure 1).The FMCG sector has witnessed a CAGR of 11.9% between 2007 and 2016. The urban sector accounts for 65% of the revenues, while the semi-urban and rural make up the rest 35%. The current trends in FMCG are product innovation (e.g. Britannia - 'Tiger' biscuit),

product customization, multi-level consumers identification, multiple products, premiumization, backward integration, sub-contracting, rural penetration, extending the distribution networks, smaller sized SKUs, product affordability of masses, 20+ years in the rural market as one of the major brands.

1.2 Introduction to Patanjali Ayurved Ltd.:
In 1988, Acharya Balakrishna and Baba Ramdev met in a gurukul in Haryana. After their formal education, Acharya Balakrishna moved around India studying about the plants and its medicinal values. In 1993 they reunited in Gangotri, in the Himalayas. In 1995, the both established Divya Yoga Mandir Trust – for Yoga teaching and practices, as well as Divya Pharmacy – for providing medicines. Both centers operated free of cost to all. After the success of the both institutions due to the followers of Baba Ramdev, Acharya Balakrishna convinced Baba Ramdev to be the co-founder of Patanjali Ayurved Limited (PAL) with 0% equity shares. Thus,

Baba Ramdev established the PAL in 2006 along with Acharya Balakrishna with a thought of rural and urban development. The product mix of PAL is divided mainly into; (1) Natural Health Care, (2) Natural Food Products, (3) Ayurvedic Medicine, (4) Herbal Home Care, (5) Natural Personal Care. The Natural Health Care deals with common selling Ayurvedic products such as digestives, health drinks, ghee, honey, fruit beverages and diet foods. The Natural Food Products caters mainly; biscuits & cookies, spices, jams cereals, corn flakes, pulses, rice, noodles, oats, etc. The Ayurvedic Medicine product line covers a broad range of Ayurvedic medicines for various diseases. In the Herbal Home care category it takes care of the agarbatti, dish wash bar & hawan samagri. And finally, Natural Personal Care provides a wide range of products in skin care, dental care, hair care, body care, toiletries, eye care & shishu care (baby products). For the purpose of this research, there are major divisions of PAL, namely Natural Food Products & Natural Personal Care. These products are mainly considered as FMCG.

2. Literature Review:

2.1 Customer Expectation:

Muhammad Ashfaq; et al;(2019)[1] :

This Study intends to examine the relationship among customer expectation, perceived enjoyment, perceived ease of use (PEOU), satisfaction, and repurchase intention of online shopping of used products. Data was gathered from 400 respondents dependent on a convenience sampling method . The respondents who ideally buy online SHPs inside the domain of China were drawn closer. Their discoveries indicated that customers' expectation and PE are solid determinants affecting customers' satisfaction and RPI in online shopping of SHPs. The outcomes further demonstrated that second and online players must create suitable customer expectation levels, changes in marketing strategy/programs, and endeavor to satisfy purchasers' expectations and needs to improve consumer satisfaction level, happiness,

convenience, and repeat purchase. Also, their outcomes show that second hand marketers should ensure the customers that purchasing used products is a simple, secure, and user-friendly process.

Rani, S., and Shukla, C. (2012)[2] :

In this paper they conducted a study to know the expectation trends and of Patanjali products. This study is based on exploratory research design. For the purpose of the above study they collected a sample of 90 randomly selected residents of the Pantnagar who consume the Patanjali products since its starting in Pantnagar market. They found that from 2008 to 2012 there is a huge increment in the number of products which is from 26 to 120. Suggestions given by consumers of Patanjali products included that Patanjali should provide the detailed information about every product, also delivery systems should be improved. On the basis of the findings of the study it can be concluded that Patanjali products have gained significant place in the market and captured quite a huge lot of consumers within a short period of time. Suggestion was also given regarding delivery system, that it should be improved by Patanjali Company.

2.2 Customer Perception:

K. Subbulakshmi, P Geethamani (September 2017)[3]:

This study was conducted to learn about the customers awareness level and preference towards Patanjali cosmetic products, also to analyze the factors influencing the customers to purchase Patanjali cosmetic products, and also to find out the customers satisfaction level and problems faced by the users in regards to Patanjali cosmetic products. . The primary objective of this study is stated as to analyse the consumer perception and satisfaction studying the awareness of the products within the consumers and the number of consumers who consume herbal cosmetics. Descriptive analysis has been carried out. From the findings, it can be stated that when respondents were asked

from which place would they buy the Patanjali products from, for this majority responded for purchase from Patanjali shop and very few opted for other options.

Dr. D.T. Shinde; Sailee J. Gharat (2017)[4]:

In this study they have researched into the "Product Positioning Of Patanjali Ayurved Ltd."

So it focuses on Patanjali as a brand and its product mix. Their main aim was to analyze and identify important factors influencing Patanjali as a brand. To know the business prospects and working of Patanjali Ayurved Ltd and also to identify the future prospects of the company in comparison to other leading MNCs. In the study they have included three main principles on which Patanjali works, which are as follows: Providing world-class products to consumers(try not to add preservatives) Reasonably priced products. Whatever profits the company earns are ploughed back into business so that it can invest the same for launch of new products, cost effectiveness or further capacity expansion. The findings of the study conclude that Patanjali products have gained significant place in the market and captured quite a huge lot of consumers within a short period of time. Consumers suggested that Patanjali should provide detailed information about their products, improve delivery system and more clear advertisement is needed with promotional health camps to improve consumer acceptability.

2.3 CUSTOMER SATISFACTION:

Dr. Subhadeep Chakraborty; et. al(2020)[5]:

The paper endeavors to highlight how much the customers are satisfied with the brands of FMCG products. So analysis in this paper is made to see the correlation with customer satisfaction to other independent variables selected. The relationship between the dependent and independent variables in the study has been analyzed using Regression Analysis. The study is carried out in Tinsukia town, Assam with the total

sample size of 375 selected on a quota sampling basis. For this study, the respondents are the households in Tinsukia town. The selected FMCGs are edible oil, rice, Indian spices used in kitchen, biscuit and salt keeping in view all are food items. Quota sampling technique is adopted for the study. The present study concluded that demographic variables are very prominent in the customer decision-making process but except gender; other demographic variables have no effect on customer satisfaction. It is also disclosed from the study that variables like service quality, product quality and perceived value have high significations to customer satisfaction where as financial benefit is found to be insignificant variable to customer satisfaction.

Dr. A. John Ditto (2017)[6]:

The main purpose is to study the demographic profile of the net banking customers in Coimbatore District., with the urge to know customers' perception towards net banking. And also to identify customers' satisfaction towards net banking. Coimbatore District is the study area for the research.. Primary data is collected through the interview schedule. The collected information was reviewed and consolidated into a master table. For the purpose of analysis the data were further processed by using statistical tools. And from the study it was found that the future growth of the banking sector will depend on how effectively the customers are able to come up with product designs suitable to our context and how effectively they are able to change the perceptions of the Indian consumers and make them aware of the banking products. The future growth of the banking sector also depends on how technology and communication oriented banks are going to be operated.

3. Research Methodology:

3.1 Rational Of The Poposed Research Study:

The study would be useful to consumers, companies, and all who require information regarding Patanjali household and personal care products. The study will help to know

what customers expect from Patanjali selected products; also it will focus on what kind of image the customers hold in their mind towards Patanjali and also it will analyze if customers are satisfied or dissatisfied and the reasons to justify their level of satisfaction. Patanjali Ayurved Ltd. can learn where their fall points are and the study can be helpful to improvise them. Strength points of the company can also be known from the study. This study will be also useful for the other FMCG companies offering the same product line.

3.2 Scope And Coverage Of The Proposed Research:

The project work will be based on study and evaluation of available information. And an evaluation of information will be done on the basis of the response of people living in Surat area.

3.3 Objective Of The Study:

- To determine the level of expectation of customers towards Patanjali products.
- To understand the concept of consumer perception towards Patanjali products.
- To study the consumers opinion regarding various features of Patanjali products
- To assess the impact of demographic variables on the perceived service quality and customer satisfaction.

3.4 Hypothesis :

"A Hypothesis is a special proportion formulated to test in a certain given situation as a part of research which states what the researcher is looking for".

Hyporhesis :

$H0_1$　There will not be any significant difference in the level of expectation on Patanjali products according to the aspects.
$H0_2$　There is no direct relationship between reasons of purchasing Patanjali products and Customer perception.
$H0_3$　There is no significant difference in product availability to customers and their satisfaction.

3.4.1　RESEARCH DESIGN: Descriptive and Analytical in nature.

3.4.2　RESEARCH INSTRUMENT: For this study Structured Non-Disguised Questionnaire is used for the collection of the primary data from the selected respondents. And PSPP software is used to calculate the data.

3.4.3　Sampling Size:100 units

3.4.4　Sampling Method: Convenience cum simple random sampling methods to draw samples from selected respondents from Surat area.

3.4.5　Sampling Media: For the collection of the primary data from the available respondents. Structured Non-Disguised close ended questionnaire was used.

Data Analysis, Interpretation & Findings:
Data analysis: As mentioned above, the study is based on a sample of 100 respondents residing in the Surat city.
From the demographic data that has been collected it is observed that the majority of the respondents fall in the 31-40age group followed by 21-30age group. Among the respondents 73%are male and 27%are female. 69% of the respondents fall under the married category and rest are unmarried. 42%are postgraduate s,30% are degree/diploma holders, 15% are school level and 13% are professional. Majority of the respondents are salaried and 33% of the respondents fall in above Rs.40,000 income group.
Regarding the general awareness Questions about the brand it was observed that 98% of the respondents are aware about Patanjali brand. And 92% of the respondents have purchased Patanjali brand, whereas 8% have never purchased. Among the purchased respondents 54% have used personal care products,27% have purchased both and 11% have purchased a household.
Q. Rate the following aspects while you purchase a Patanjali Products (Personal Care and Household)

Figure 1:
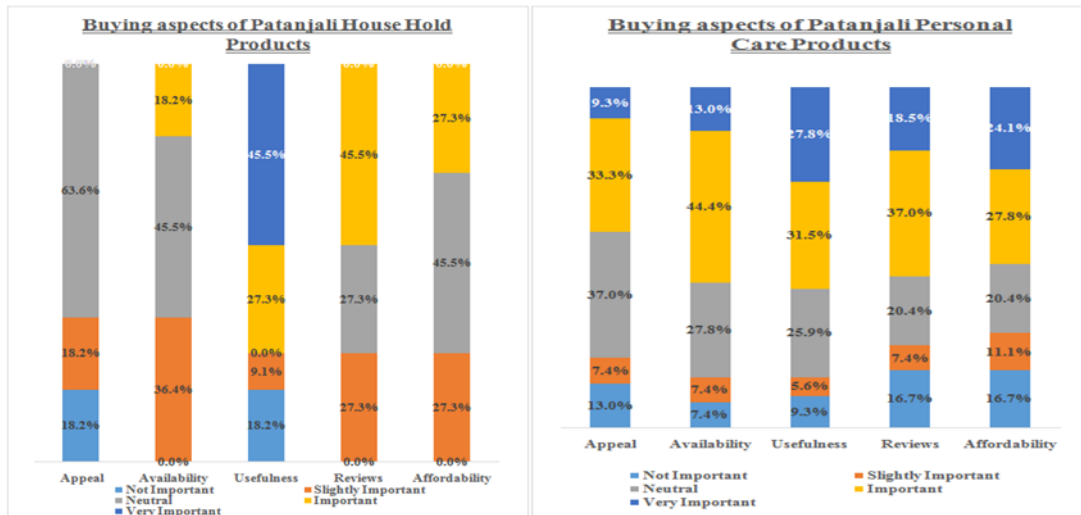
	Appeal	Usefulness	Availability	Reviews	Affordability
Chi-Square	31.59	31.48	45.93	22.02	18.54
Df	4	4	4	4	4
Asymp. Sig.	0	0	0	0	0.001

Explanation:

Appeal: Majority have neutral opinion regarding Appeal in Household as well as personal care products.

Availability: Majority have an opinion that it is important for personal care and neutral at household products.

Usefulness: Majority are of the opinion that it is important in Personal care products and it's very important for household products.

Reviews: Majority of the respondents are of the opinion that it's important for personal care products as well as household products.

Affordability: Majority have an opinion that it is important in personal care products and majority say it's neutral in household products.

p value is less than 0.05, so we reject the Null Hypothesis (H0₁): There will not be any significant difference in the level of expectation on Patanjali products according to the aspects. And hence we conclude that there is a significant difference in the level of expectations according to the aspects.

Q. How much do you agree/disagree related to reasons for purchasing Patanjali Products?

Figure 2:

Reason for Purchasing Patanjali Personal Care Products

Reason for Purchasing Patanjali House Hold Products
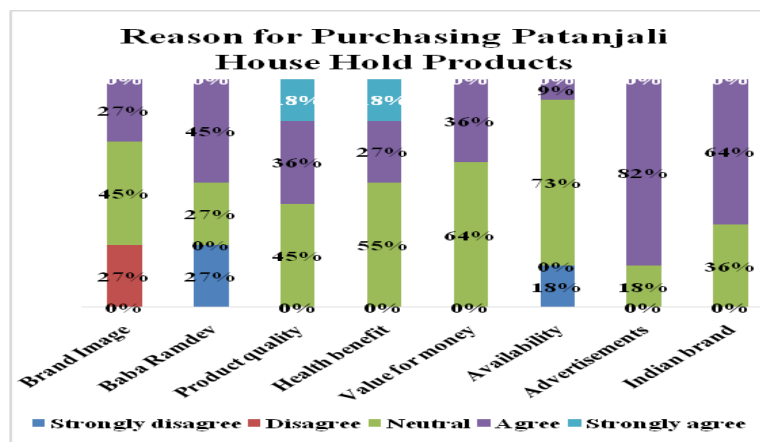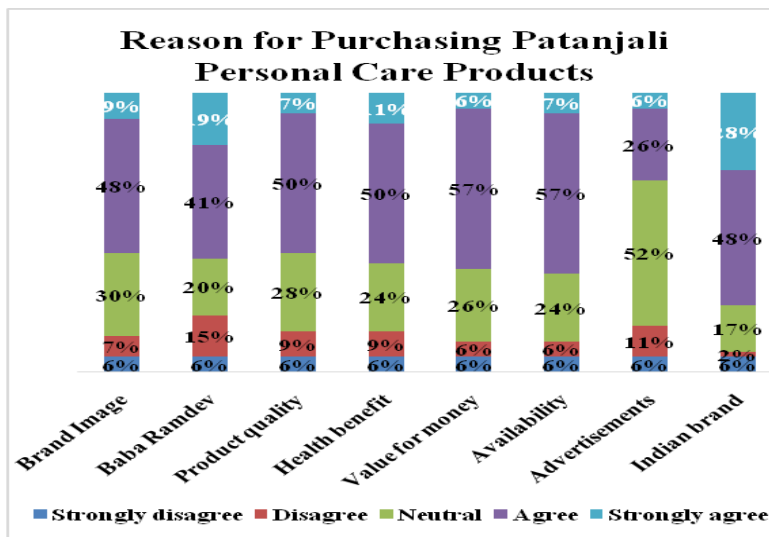
	Brand Image	Baba Ramdev	Quality	Health Benefits	Value For Money	Availability	Advertisements	Indian Brand
Chi-Square	62.13	42.46	64.52	54.09	98.22	56.37	51.26	77.67
Df	4	4	4	4	4	4	4	4
Asymp. Sig.	0	0	0	0	0	0	0	0

Explanation:

Brand Image: Majority of the respondents Agree with this point for personal care products, whereas majority are neutral for household products.

Brand Image of Baba Ramdev: Majority of the respondents agree for both the categories.

Product quality: Majority agree in personal care products, whereas its neutral for household products.

Health benefit: Majority of the respondents agree with this point, where as its normal for household

Value for money: majority agree for personal care products, whereas it's neutral for household products.

Availability: Majority of the respondents agree with this point, where as its normal for household

Advertisements: Majority of the respondents are neutral with personal care products, where majority agree for household.

Indian Brand: Majority of the respondents agree for both the categories.

p value is less than 0.05, so we reject the Null Hypothesis H0$_2$: There is no direct products and Customer perception. **And hence we can conclude that "** There is a direct relationship between reasons of purchasing Patanjali products and Customer perception.

Q. How satisfied are you with the products?
Figure 3:

relationship between reasons of purchasing Patanjali

Customer Satisfaction towards Patanjali House Hold products

Customer satisfaction towards Patanjali Personal Care products
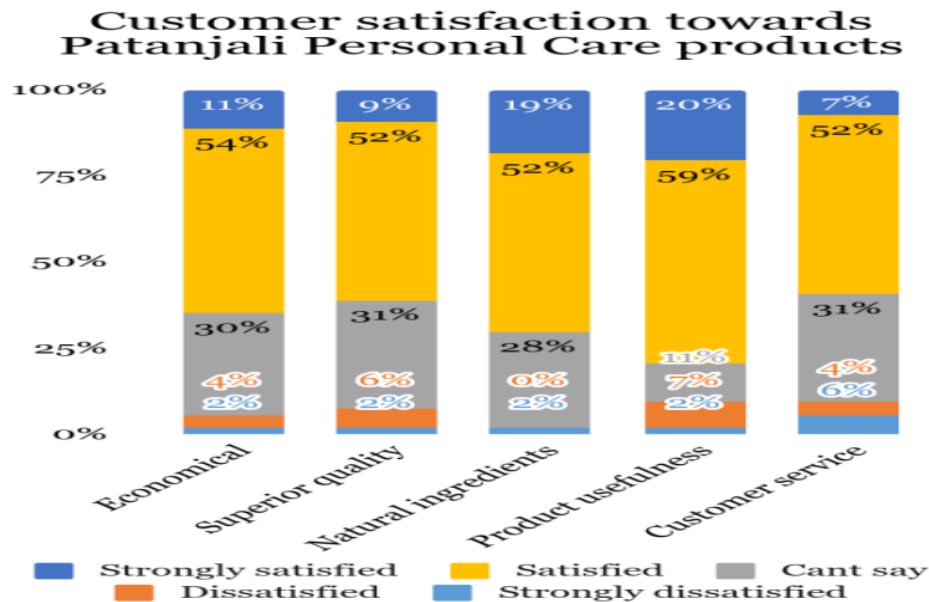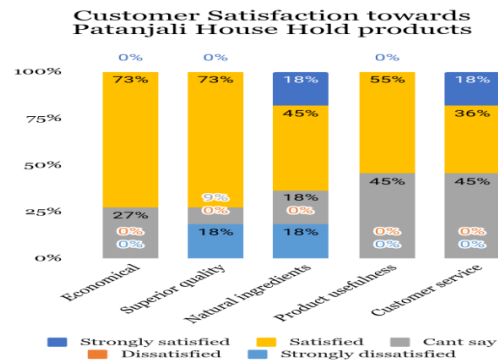
	Econo mical	Super ior Quali ty	Natura l Ingred ients	Useful ness	Custo mer Servi ce
Chi-Square	97.89	94.52	37.13	98.33	85.39
df	4	4	3	4	4
Asymp. Sig.	0	0	0	0	0

Explanation:
Economical: Majority of the respondents are satisfied with this point in both the categories.

Superior quality: Majority of the respondents are satisfied with this point in both the categories.

Natural Ingredients: Majority of the respondents are satisfied with this point in both the categories.

Product Usefulness: Majority of the respondents are satisfied with this point in both the categories.

Customer service: Majority of the respondents are satisfied with this point in personal care products, whereas majority are neutral in household products.

p value is less than 0.05, so we reject the Null Hypothesis (H0₃): There is no significant difference in product availability to customers and their satisfaction. And hence we conclude that, There is a significant difference in product availability to customers and their satisfaction.

Limitations Of Study:

o　　The study is limited to selected residents from only Surat city.

o　　It may be possible that there may be biasness in the responses given by respondents, which ultimately constrains the result of study.

o　　Moreover this topic requires very in-depth research whereas here only 100 respondents have taken so it may not be enough for this study.

Findings & Recommendations:

●　　It is observed that 98% of the respondents are aware about Patanjali brand. And 92% of the respondents have purchased Patanjali brand, whereas 8% have never purchased.

●　　Among the purchased respondents 54% have used personal care products,27% have purchased both and 11% have purchased a household.

●　　Majority of the respondents of Personal care products say Appeal is important and Availability is chosen by majority of the respondents in Household products.

●　　Reference to near & dear: Majority of the respondents agree with this point in Personal care products whereas, majority say it's neutral for household products.

●　　Go on even after the price hike: Majority of the respondents have neutral opinion about both the products.

●　　Personal Care products: Majority of the respondents choose Dental care for Quality, Features, Brand image, value for money and others accordingly followed by Hair care than Skin care.

●　　Household products: Majority of the respondents choose Snacks & Biscuits in all the aspects Followed by Rice & Atta than Cooking oil and Pulses.

●　　Product quality: Majority agree in personal care products, whereas its neutral for household products.

●　　Value for money and Availability is chosen by majority of the respondents and they agree for personal care products

●　　Advertisements and Indian Brand is chosen by majority of the respondents and they agree for Household products

●　　Natural Ingredients: Majority of the respondents are satisfied with this point in both the categories.

●　　Overall, Majority of the respondents are satisfied with the Product Usefulness point in Personal care products.

●　　Overall, Majority of the respondents are satisfied with Economical and Superior quality points in Household products.

Recommendations:

●　　Household products need to be marketed more as from the study it is observed that Personal care products are more preferred.

●　　Brand image in the household needs to be improved.

●　　Product quality is not that much high according to the respondents so the quality needs to be improved.

●　　Availability is also one of the concerns in household products.

●　　As the majority of the respondents are satisfied with the products so to retain the customers more innovative strategies should be followed or implemented.

●　　Customer service should also be taken care of in regard with household products.

Conclusion:

From the above study it is very clear that customers are satisfied with the products offered in the personal care category but there is an improvement for the household products category. Customers prefer this brand as their

expectation towards non-chemical products is more. Customers are satisfied with the usefulness in both the categories. There is an improvement room for customer service in household products, which should be given due importance. If all the points are given importance and taken care of then Patanjali Ayurved Ltd. can top the customer reviews

regarding quality ,price and every aspect. From the study it can be concluded that customer expectations are more from the brand as they perceive it at a very high level and more satisfaction can be given to customers if proper care is given in all aspects.

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DETECTION OF SARCASM USING BI-DIRECTIONAL RNN BASED DEEP LEARNING MODEL IN SENTIMENT ANALYSIS

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ABSTRACT:

Identification of Sarcasm is a highly challenging task by examining the sentence to and from a single point of view. Examining the sentence from different dimension leads to a debate level conclusion. Accuracy in detecting the sarcasm present in a sentence and such identification algorithms are less in sentiment analysis stream. Explicit sentiment incongruity can be easily identified either by the hashtag or from the direct statements that are intended to. Implicit level of sarcasm in the text is highly crucial to classify and proving that it belongs to the class of sarcasm is another level of difficultness added into it. The state-of-art approaches use a supervised classification models to distinguish between sarcasm and non-sarcasm present in the sentences. This labelled data is effective for explicit incongruity sentences. However, extracting the sarcasm from implicit level of sentiment incongruity sentences are highly in demand. In this approach an appropriate deep learning model is employed to distinguish the implicit statements whether it belongs to the class of sarcasm or not. Several state-of-art approaches are used to evaluate the performance of the proposed approach. The result shows the significance of the proposed model over other existing state of art techniques

Keywords: Sarcasm identification, Deep Learning technique, Bi-directional LSTM, RNN.

I.   Introduction

In social media, the text messages generated by the client-side users are very creative and possess a high-level embedded emotions such as sarcasm and so on. The popular social media sites such as Twitter, Facebook, Instagram, and others have a trending term called "Hashtag (#)" through which they can create their own and give a name for it. It needs not to be in formal language or formal representation. The detection of sarcastic comments is very vital in data mining analysis. The ignorance of giving importance to sarcastic comments leads to polarity reversal [20]. The detection of sarcasm in the comments are also important for security reasons [25]. Unlike data mining from texts messages, identification of sarcasm in the text is a difficult task, which requires high level of

intelligence to identify the sarcasm inside the text. Sometimes the text will be containing indirect sarcastic comments, which can be identified only after a debate.

As per the researchers of linguistics, sarcasm is an incongruity conveyed between the statement and the context that it refers to within a single piece of text [26, 27, 28]. Contrast from sentiment polarity is one among the common form of sarcasm in social media Twitter. For instance, "Am astonished to see these dirty environment" in this tweet, astonished refers to positive polarity and dirty environment indicates negative polarity. Here in this tweet the sarcasm lies in dirt environment and its strongness of sarcasm lies on the positive polarity astonishing. There are basically two forms of incongruity 1. Explicit congruity: for instance, "I love annoying" here love is positive and annoying

is negative which comes under sentiment polarity, and this indicates the sarcasm directly. Whereas implicit sarcasm lies between the words that are highly undistinguishable as words of sarcasm.

The task in detection of sarcasm is to identify and classify a piece of text whether it belongs to sarcastic or non-sarcastic. Even though it is a single piece of text that are supposed to be classified, the task highly depends on the words that are supported for it. General machine learning models can classify the explicit sarcasm in an effective way. However, this coupling and dependency of words and its meaning among each other in the sentence are hard to classify. If the dependency were on sequential form, then a general Recurrent Neural Network would easily resolve it.

However, RNN can classify the texts based on the sequential form that it occurs. It does not go front and back to identify the second level meaning present in the sentence. In this paper an effective approach to address identification of sarcastic text is present in the sentences by scanning the statements back and forth. The proposed model named P-LSTM composes of two-level classification one on the sentimental aspect and the other on the semantic aspect.

The detailed studies on the recent models are discussed in section 2. The basic explanations, which are highly needed for the further understanding of the concepts in this paper, can be, and found in section 3. The section 3 composes of the basic introduction of RNN and the details of Bi-directional LSTM. In section 4 the application of Bi-directional LSTM on identifying the presence of sarcasm in the statements is given. Section 5 discusses on the experimental setup, experimental analysis, and the datasets that are chosen for evaluating the performance of the proposed model and the details of the models that are used for proving the significance of the proposed model are given in detail. Section 6 concludes the paper with appropriate future enhancement of the present work.

II.   Related Works

In recent years the rule-based approach to classify the sentiments on the statements in which it highly dependent on the linguistics and the models that depends on such approaches includes [29, 30, 31]. In Twitter social media platform, the usage of hashtags can reverse the appropriate sentiment in the tweets present over there [32]. A direct hashtag called #sarcasm is used in most of the tweets to directly indicate that this text belongs to sarcasm. These hashtags are not present in some of the other aspects where the task become highly difficult and the false positive in the comments of #sarcsam should also be identified and removed.

In the current decade the use of deep learning approaches is high in demand where without the intervention of the user the model can distinguish between the sarcastic and non-sarcastic statements. Few models use the similarity score to distinguish the same. In the year 2016 [33], a machine learning approach is employed to find the sarcastic detection on a domain level classification. CNN based classification models are also present in the sarcasm detection domain.

A significant number of approaches are available in research aspect which uses direct CNN approach, direct LSTM approach and LSTM fused with CNN approach, Bi-LSTM and so on. In this research work the comparison were made on CNN based approach, LSTM based approach, CNN-LSTM based approach, Bi-LSTM approach. Few other related works can be found in [21-24].

III.   Bi-directional RNN

In this section, the working model of Bi-directional RNN and the working model of Bi-Directional Long Short-Term memory based neural network is explained for the clear understanding for further readings. The Bi-directional RNN is the base model for the working of Bidirectional LSTM.

3.1 Bi-directional RNN

In the conventional neural network models, the input of every layer is independent to each other and the same is applicable to the output and hidden layers. However, in sentiment analysis, for identifying the actual emotion in the sentences, the cohesion between the words in the sentences is also essential. Based on this

model even the missing out emotions can also be discovered provided with appropriate training to the model. The remembrance of correlation between the words in the sentences it can transfer the actual emotions in the sentences from input layer to the hidden layer for further processing.

The working of RNN is as follows: RNN loops the networks among them through which it can retain the core content of information. Since the loop is nested in structure it has the tendency to accept the input as a sequence.
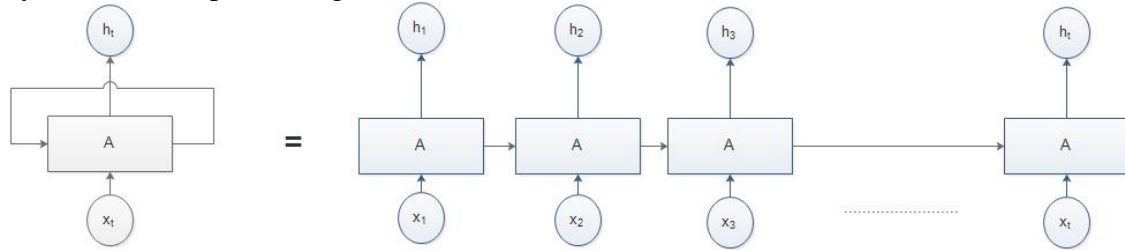
Figure 1: RNN working Model

RNN transfers the independent working model of CNN into dependent actions. For instance, the activation functions which are independent in CNN are dependent to each other in RNN. The weights and the bias values in all the layers will be the same from one another. In this way the computational complexity will be reduced measurably. In this model, the output of the first layer will be the input for the next hidden layer. In this model of computation, all these three layers (input, hidden and output) will be considered as a single layer.

In figure 1, h represents the hidden layer, x represents the input, $x_1, x_2 \dots x_n$ represents the input words in the sequence where each x_i represents one word each.

The calculation of information extracted from the input sequence i can be mathematically represented as

$$h_i = f(h_{i-1}, x_i)$$

where i is the current iteration. And when applying the activation function ($\tanh$) the model can be represented mathematically as

$$h_i = \tanh(w_{ii} h_{i-1} + w_{ix} x_i)$$

where ii represents the recurrent neuron and ix represents the current neuron. The final output can be calculated as

$$y_i = w_{hy} \times h_i$$

Where w_{hy} is the weight of the output layer neuron and y represents the output of the neuron.

3.2 Bi-Directional LSTM

The bi-directional LSTM is the fusion of two independent RNN together. With this model it is effective to appropriately examine the sentence both forward and backword at same time. In Bi-directional LSTM, the input will be taken in two different RNN in which one runs forward form and the other in the backward form.
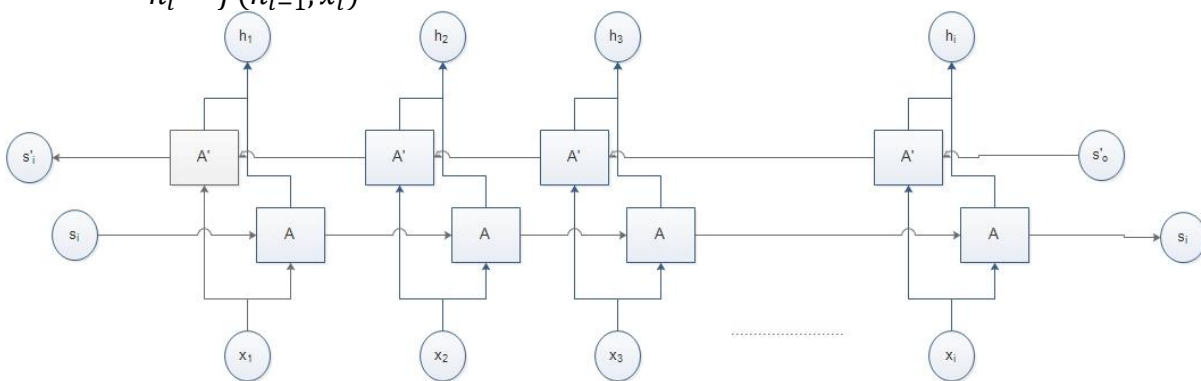
Figure 2: Bi-directional LSTM

In Bi-directional LSTM the calculation of activation functions do not happen in s single

candidate value solution and the calculation of such values can be mathematically formulated as

$$C^i = \tanh(w_c[a^{i-1}, x^i] + b_c)$$

The control over LSTM network can be carried out in three different forms:

1. To update the gates in the network

$$\delta_u = \sigma(w_u[a^{i-1}, x^i] + b_u)$$

2. To forget the sequence of words in the network

$$\delta_f = \sigma(w_f[a^{i-1}, x^i] + b_f)$$

3. The output of the network can be computed as

$$\delta_o = \sigma(w_o[a^{i-1}, x^i] + b_o)$$

And the final output can be represented as

$$output = \begin{cases} c^i = \delta_u \times c^i + \delta_f \times c^i \\ a^t = \delta_0 \times c^i \end{cases}$$

IV. Bi Directional-RNN for detecting Sarcasm

Transforming the information from one scenario to the other is very effective in learning models as the memory of the network can be evidently used in several different aspects. In this research work, identifying the sarcasm in between the given information as statement and its reference to the context of it is a knowledge-based learning mechanism from the sources such as twitter and other online social media platform.

The resources for identifying the sentiments are available widely in online including sentiment word corpora [1, 2] and sentiment tweets corpora [3, 4]. To improve the proposed models a few other models were also came to the research focus which transfers the knowledge of sentiments from other resources from the above-mentioned corpora's [1, 2, 5].

The exiting challenge in this model is to identify the coupling form of two different sentiment analysis technique to find the sarcasm present in the statements given. The two identified models are sentiment word corpora and sentiment tweets corpora.

One is to find the sentiment hard attention from every word in the sentence. And the other is to find the semantic present in it. Both can be mathematically represented as follows.

The representation of sentiment analyzed from the tweets can be represented as $y = [y_1^*, y_2^*, y_3^* \dots, y_i^*]$ and this is generated after applying the soft-max (tanh) function in it from S.

$$y_i^* = \tanh(|S|)$$
$$\mathbb{R} = H(y \oplus W \times y^*)$$
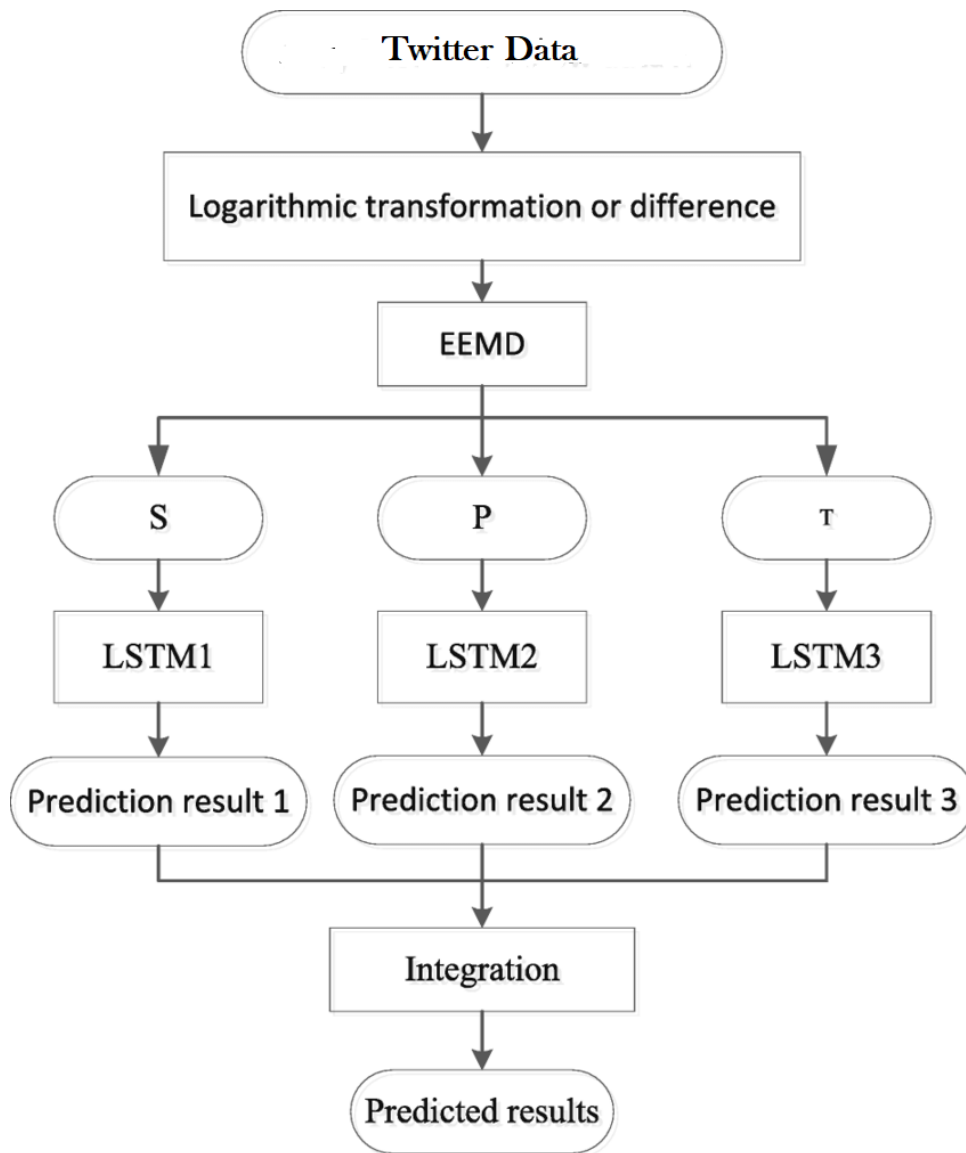
Figure 3: Working flow of LSTM on sarcasm classification

V.   Experimental Analysis

In this section the experimental setup, the datasets chosen for evaluation and the performance evaluation of the proposed model in comparison with the existing models are also listed out.

5.1 Experimental Setup

We experiment our proposed model over automatically annotated datasets and two manually annotated datasets, which are listed in the following table 1.

Table 1: Datasets

Si. No.	Datasets	Reference	# Sarcastic / # Non-Sarcastic Statements
1	Automatically Annotated Dataset	[6]	10000 / 10000
2		[7]	10000 / 10000
3		[8]	18889 / 48890
4		[23]	2826 / 1792
5	Manually annotated dataset 1	[9]	474 / 1608
6		[10]	532 / 1397
7		[11]	2222 / 2396

The compared algorithms for proving the performance of the proposed model includes Bi-LSTM networks [12, 13, 14], CNN based LSTM networks [15], LSTM [16], CNN [17] feature based sarcasm detection models [18, 19, 20].

5.2 Experimental results and discussion

The experimental analysis was done in three stages. 1. On automatically annotated datasets which uses hashtags to find the instances.

5.2.1   Automatically Annotated Datasets

Table 2 shows the results of P-LSTM (proposed LSTM) on automatically annotated datasets. The results are compared with the recent algorithms. The instances of the dataset are extracted automatically using the hashtags such as #sarcasm, #education (edu), #humour (hum), #politics (pol), #news.

Table 2: Results of Proposed P-LSTM vs other Algorithms on Automatically Annotated Datasets

Models	[6]			[7]			
	edu	hum	pol	edu	hum	poi	news
[14]	94.73	96.26	97.04	94.84	95.58	99.34	96.96
[15]	93.77	94.46	95.06	94.88	96.51	99.21	97.83
[16]	93.85	91.05	90.55	95.58	95.78	99.11	97.66
[17]	94.28	94.37	95.59	95.05	96.46	99.24	97.21
P-LSTM	94.83	95.83	96.69	95.09	96.28	98.76	97.06
[20]	91.12	91.12	93.12	91.12	93.12	95.12	97.12

From Table 2 it is evident that the proposed model outperforms the existing algorithms in most of the hashtags. From the numerical values it can be stated that in all the hashtags the proposed P-LSTM outperforms [14], [15], [20] and performs equally with [16] and [17]. Figure 4 shows the pictorial form of the results in Table 2 for better comparison.

Figure 4: Results of Proposed P-LSTM vs other Algorithms on Automatically Annotated Datasets

5.2.2   Manually Annotated Datasets

Table 3 shows the results of P-LSTM (proposed LSTM) on manually annotated datasets. The results are compared with the recent algorithms. The instances of the dataset are extracted manually, and it is given in the papers [9, 10, 11, 23]

Table 3: Results of Proposed P-LSTM vs other Algorithms on Manually Annotated Datasets

	[9]	**[10]**	**[11]**	**[23]**
[14]	75.39	60.13	65.97	69.53
[15]	71.29	59.95	61.89	68.07
[16]	72.70	57.69	64.19	68.54
[17]	76.01	58.97	63.29	70.70
P-LSTM	78.42	67.37	69.57	73.20

From Table 3 it is evident that the proposed model outperforms the existing algorithms in most aspects. From the numerical values it can be stated that in all manually annotated datasets, the proposed P-LSTM outperforms [14], [16], [17] and performs equally with [15]. Figure 5 shows the pictorial form of the results in Table 3 for better comparison.
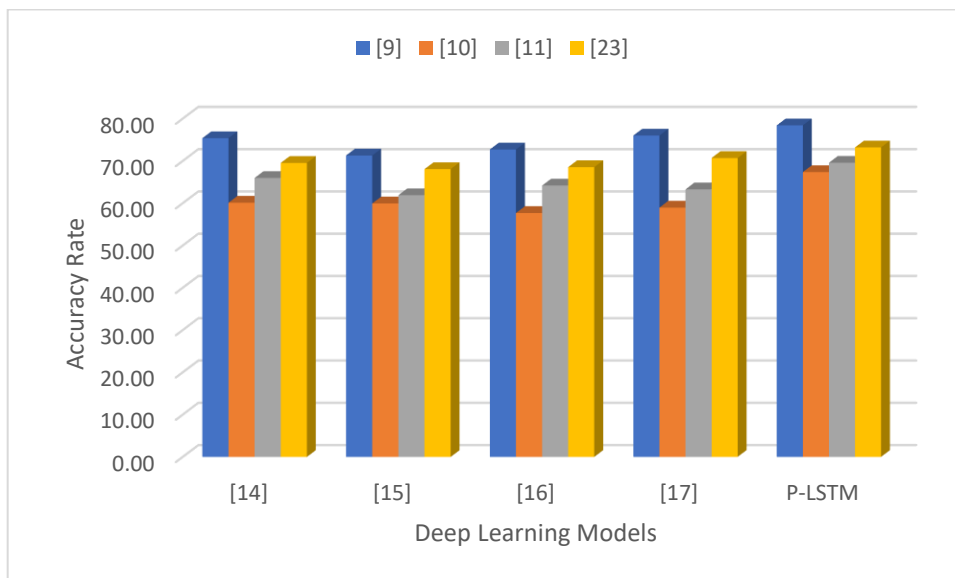
Figure 5: Results of Proposed P-LSTM vs other Algorithms on Manually Annotated Datasets
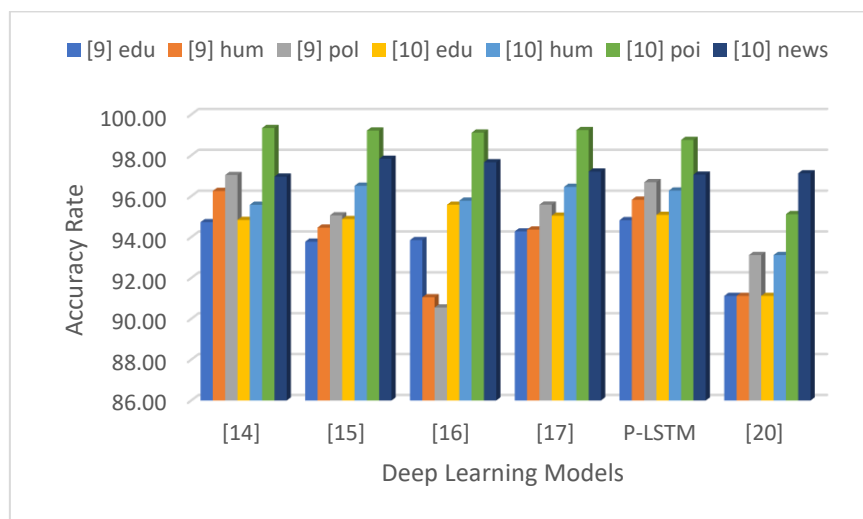
5.2.3   Unbalanced Datasets

Table 4 shows the results of P-LSTM (proposed LSTM) on unbalanced datasets. The results are compared with the recent algorithms. The instances of the dataset are extracted manually, and the comparison are done over unbalanced level of sets. For example, for 10000 sarcastic comments nearly 30000 non-sarcastic comments are used for training the networks along with 10000 sarcastic comments [6, 7, 8].

Table 4: Results of Proposed P-LSTM vs other Algorithms on unbalanced Datasets

	[6]	**[7]**	**[8]**
[14]	92.50	95.81	98.51
[15]	92.23	95.43	98.99
[16]	92.16	94.85	98.25
[17]	92.97	95.39	99.32

P-LSTM	92.93	96.30	99.80
[20]	92.89	95.47	99.20

From Table 4 it is evident that the proposed model outperforms the existing algorithms in most aspects. From the numerical values it can be stated that in all unbalanced datasets, the proposed P-LSTM outperforms [14], [20], [16] and performs equally with [15] and [17[. Figure 6 shows the pictorial form of the results in Table 4 for better comparison.
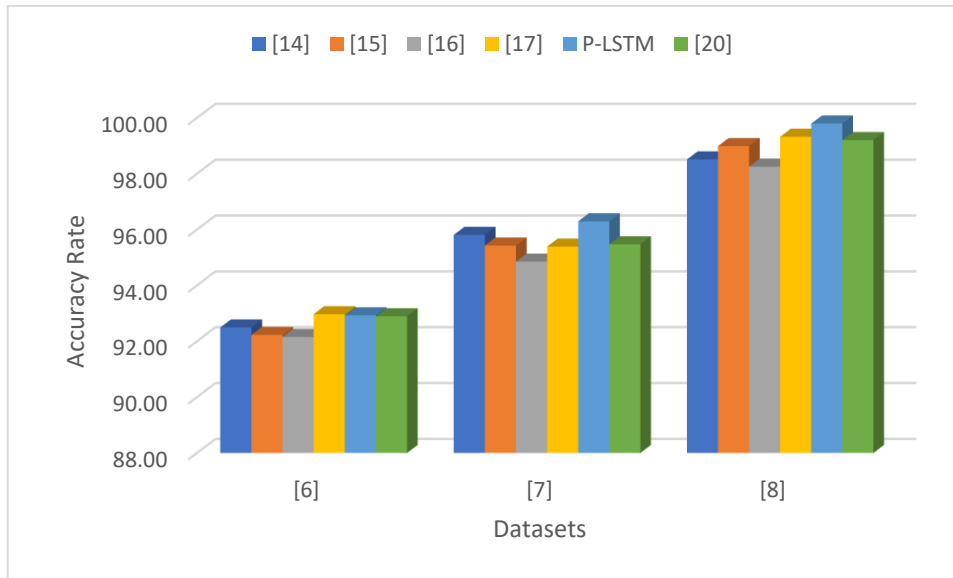
Figure 6: Results of Proposed P-LSTM vs other Algorithms on unbalanced Datasets

VI. Conclusion

In this research work, a novel work for solving the identification of sarcasm in the tweets is given. The model is derived from a deep learning approach called RNN in which the records of the previous scanned information are kept in numerical form. The context-based incongruity among the text presented is the key factor in the proposed model. In proposed P-LSTM, the given sentences are scanned to and from in the model through which the information and the dependency among the words in suffix as well as prefixes are identified. Later based on the classification-trained model, the proposed model is examined, and the tweets are classified based on the accuracy ratio. The proposed model is evaluated and compared with the recent state-of-art algorithm to prove its efficiency. The results shown the effectiveness of the proposed model when compared with other existing techniques.

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TEXT MINING AND SENTIMENT ANALYSIS OF ONLINE CUSTOMER REVIEWS FOR FOOD DELIVERY APPS: (QDS) ANALYSING QUALITATIVE DATA

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ABSTRACT

Blogs, social networking networks and different business apps have acquired a common position as a place for users to share their thoughts and sentiments about such issues or facets. Due to the large amount of opinionated data available in digital media written by users, sentiment analysis is also becoming common among companies. Positive, negative, or neutral feelings can be found in published narratives or reviews. Customer ratings play a significant role in shaping new and current consumers in a variety of markets, including the Food Delivery Apps market. It helps the Food Delivery Apps Companies to better recognise their value in a competitive world and their consumers' expectations of the Food Delivery Apps' qualities, helping them to develop and play a powerful and competitive part in the industry. The key aim of this analysis is to suggest a framework for assessing the mood of Food Delivery Apps feedback. We collect messages from Facebook accounts, websites, and other platforms such as g2.com, mouthshut.com, and trustpilot.com. Using the auto code feature in NVivo 12, these were then listed as either positive or negative feedback where Very negative 22.41% moderately negative 29.1% moderately positive 31.51% Very positive 16.98% the outcome of this work Businesses should use the results of this report to determine consumer expectations of the Food Delivery Apps Market. This will assist the above sectors in determining what is and is not working. As a result, they will be able to develop their offerings and adapt to consumer requests more effectively.

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Introduction

India's online food distribution industry is rising alongside changing lifestyle trends and Indian eating habits. Hectic job schedules and the disposable incomes have popularised food distribution, especially in urban areas. As of 2019, Millennial accounted for ~63% of the online food distribution market's total consumer base. This is due to increased Millennial disposable income, particularly in India's urban regions. Millennial often enjoy buying food online as it's simple to manage and saves time and energy at home. In 2019, Zomato held a user-based share of ~38 % of the global online food distribution providers. In 2019, Swiggy kept ~27% of India's online food distribution consumer base. Fast penetration rates in Tier I and Tier II cities, as well as rapid distribution systems, helped these two companies win the high share of the Indian industry. The number of working women has increased in the Indian workforce in recent years, particularly in the city-based organised sectors. As a result, the percentage of double-income households often increases. With all couples employed and hectic working lives, it becomes impossible for individuals to get time

and resources to prepare at home. Moreover, the dual-income situation expanded the total family expenditure potential. Also, leading players including Swiggy and Zomato continue to announce enticing discounts for current and new consumers to keep up the rigid rivalry on the online food ordering industry. This, in essence, leads to people's choice for ordering food online and eating their favourite cuisine at an inexpensive price at home, growing the total value and user base of India's online food ordering industry.

Sentiments are a reflection of individuals' emotions, thoughts and expectations that determine the foundation from which the structures framing the mentality of inundated methods of thinking and understanding are formed and nurtured. In today's world, any person who has their own perception and understanding seeks to improve it by professing it to others, so that the topic itself can thrive upon the contribution of the specific subject or matter. As a part of a society governed by feelings and expectations, it is imperative to be able to interpret and draw lessons from mutual emotions and perceptions, as all about the world that people worship is a result of a group's collective conviction.

For sentiment analysis, the related text must be retrieved from the site using a suitable web scraping method. We receive messages from Facebook profiles, blogs, and forums like g2.com, mouthshut.com, and trustpilot.com. The document would then be analysed to see if it holds some feeling. Extracting Twitter posts from famous Food Delivery App Using auto code in NVivo 12, This study focuses on online feedback commonly exchanged by Food Delivery Apps customers that show experience and happiness by feelings including positive, negative, or neutral to measure consumer opinion on the Indian market.

Literature Review

Xing et al. (2015) proposed a work on amazon product reviews to identify negation phrases. Data classification is performed for the data collected from February to April 2014. According to Sharef's (2014) survey on the Scopus website, in the last decade, the number of publications on sentiment analysis has risen significantly year after year. Although most of these studies target social networks such as Twitter, Facebook and MySpace, a number of interesting works have also been performed on other dataset types. Aashutosh Bhatt et al. (2015) used iPhone 5 ratings from Amazon's website, suggesting a rule-based product element sentiment study. POS methodology is extended to any sentence stage and effects are seen in charts. Terrana et al. (2014) used Facebook users' social connections through sentiment analysis techniques. According to He, automated statistical approaches like sentiment analysis are becoming common to process massive volumes of data written on social media by users. Although, in another word, sentiment analysis, opinion mining is the research of people's judgement, reasoning and viewpoint on those entities S. Yordanova, et al. (2017) & C.Kathiravan et al. (2019) Analysis of sentiment may be explored at three levels subject to the required granularities, such as whether the study goal is a complete text or paper, one or more composite sentences, or one or more individuals or features of those entities. Bongirwar V.K. (2015) & C.Kathiravan et al. (2019) the various stages that determine the tasks of sentiment analysis are text level, sentence level, and function level. (2018) S. Behdenna et al. (2015) P. Patil (2016)

Methodology

We used qualitative analysis software named QSR NVivo 12 to retrieve messages and feedback from Facebook pages and other websites such as g2.com, mouthshut.com and trustpilot.com (QSR International, 2016). NVivo is software to analyse unstructured files. Hilal and Alabri (2013) mentioned using NVivo in qualitative analysis. NCapture add-on for NVivo was installed in our browser to retrieve the necessary details from Facebook's public page 'Opposing Views' (Opposing Views, 2016). Facebook and the aforementioned forum followers and other blogs, such outlets such as g2.com, mouthshut.com, and trustpilot.com are sharing and discussing contentious topics. 983 Downloaded comments and remarks. NVivo then exported the dataset for further study. The following measures were performed to characterise a comment as positive, negative, or neutral.

Data Clean-Up

Data extracted from Facebook & and other sites such as g2.com, mouthshut.com, and trustpilot.com comes with a lot of meta-data such as PostID, CommentID, the identity of the individual or group making the comment, the exact text of the post or comment, the date and time the post or comment was created and the amount of likes. Only the original texts from the posts and comments fields were included in this analysis. There were few additional characters in this area as well, which needed to be deleted. Hu and Liu are two Chinese citizens (2004)

Tokenisation

Each post or comment is stored in a string. To allow more processing, divide this string into individual terms. The tokenization method divides a string into one or more phrases. (Feldman and Sanger, 2007)

Stemming

Many English words have various forms. For eg, the terms ordered, ordered, ordered, placed, placed, placed, placed, placed, placed, range, rank, ranking, saying g have the common root,

Thus, all such terms are moved to their source to render the quest method more complete.

Query Augmentation

In NVivo, we also have the facility to search for keyword synonyms contained in posts/comments. For eg, if the search term is fear, terms like best, best, nice, etc. It can also handle related terms like distribution, delivery savings, savings

Classification

Finally, articles and feedback are tagged into positive and negative or neutral emotions using the auto code function in NVivo 12. The auto-coder has built-in lexicons for positive and negative feelings. Facebook and other blogs, other outlets include g2.com, mouthshut.com, and trustpilot.com Comments used NVivo 12 Automatic Coding ADCAIJ: Advances in Distributed Computing and Intelligence Journal Regular Issue, Vol. 7 N. 1 (2018), 41-48 eISSN: 2255-2863 — http://adcaij.usal.es Salamanca University - cc by dc Examples of positive terms are: happy, smile, hope, etc., and negative words are: sad, terror, hatred, guilt, regret, rage, etc. Non-positive or negative words are considered neutral.

Analysis and Result

We used NVivo 12 to analyse the responses. NVivo 12 has a feature for automated text labelling. Feelings may be coded as moderately positive, very positive, moderately negative, very negative. NVivo has different lexicons for each category. Moreover, word modifiers like really, more or somehow will alter the emotion's class.

The world cloud is a figure made up of the terms that are most frequently reviewed and more important to our research, which includes evaluating, gathering, distributing, disliking, helpful, restaurants, apps, facilities, technologies and online the particular realms that the Ratings for Food Delivery App helps us to evaluate certain words that are comparatively more relevant than others.

Features extracted feelings are shown in word cloud utilising Nvivo 12. The size of the word in Word cloud is proportional to count. Fig 1. Shows all the terms derived as features for opinion.

Figure: 1 Word cloud of all sentiment words
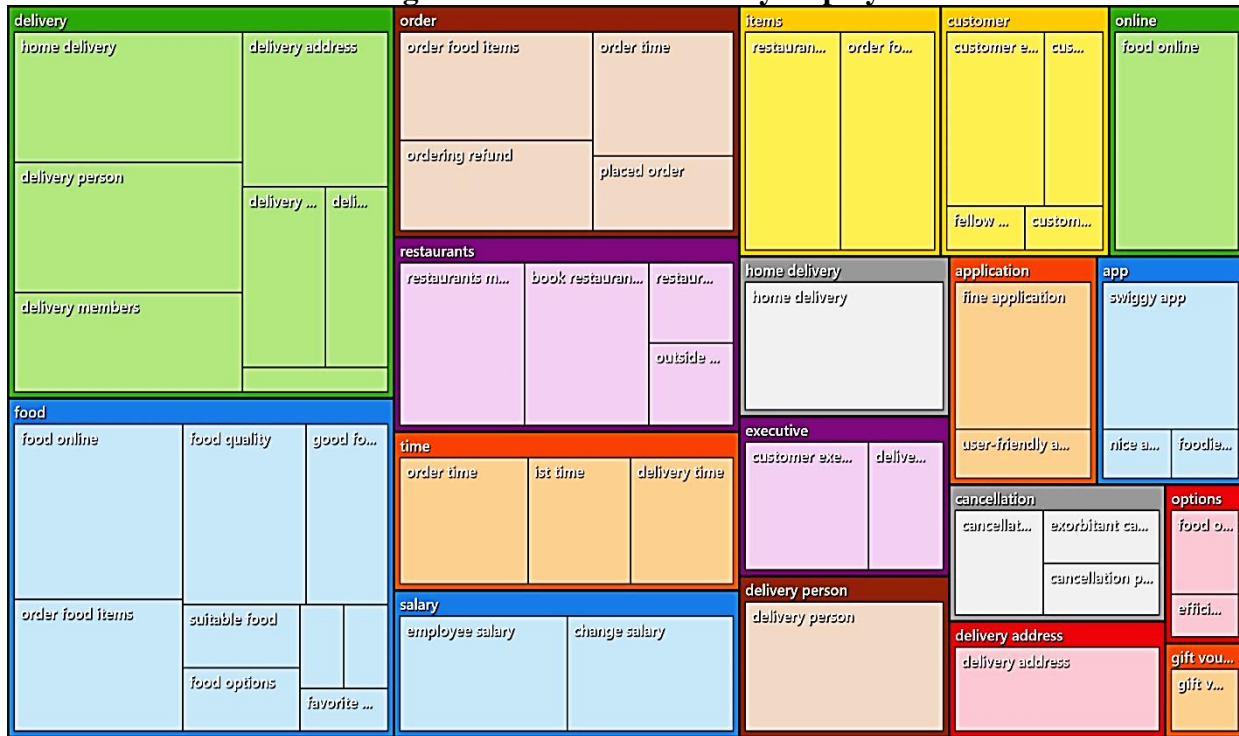
Figure 5: Word trees visually display

Figure 5: Word trees visually show the association between terms in the dataset to have a meaning for their use. Words that appear more often with the pre-selected word.

Delivery: - *Home Delivery, Delivery address, Delivery person,*

Order: - *Order food Items, Order time, Order Refund, Placed order*

Food: - *Food online, Food Quality, Food Option etc.,*

Time: - *Order time, Delivery time etc.,*

Application: - *Fine application, User friendly app*

We have used NVivo 12 for the analysis of the comments. NVivo 12 has a feature for the automatic tagging of sentiments to text. Sentiments can be coded as moderately positive, very positive, moderately negative and very negative. NVivo maintains separate lexicons for each of these categories. Furthermore, word modifiers like very, more or somewhat can change the class of that emotion.

Table 1: Sample of Positive Emotions

Word	Count	Word	Count
delivery	20	current	4
restaurants	12	easily	4
online	8	quality	4
favourite	7	restaurant	4
favourite	6	reviewer	4
people	6	source	4
review	6	always	3
awesome	5	change	3
customer	5	choose	3
offers	5	experience	3
options	5	friendly	3
service	5	location	3
application	2	available	2

Table 1 shows a sample list of words that are considered to carry positive emotions. NVivo almost maintains a list of words that are similar to the keyword. For example, the word delivery can occur in several counts. All these will be stemmed or normalised to the word promise and will count as occurrences of that emotion.

Table 2: Sample of Negative Emotions

Word	Count	Word	Count
delivery	21	beginner	2
customer	9	charged	2
mobile	7	cheating	2
cancel	5	disappointment	2
cancellation	4	exorbitant	2
change	4	feeling	2
difficult	4	inefficient	2
fraudulently	4	irritated	2
mistake	4	irritating	2
refused	4	knowing	2
dislike	3	looking	2
horrible	3	missing	2
ashamed	2	arrogant	1

Table 2 shows a sample list of words that are considered to carry negative emotions. Figure 1 and Figure 2 show the most frequent positive and negative words that have been used in the comments.

Figure 2: Most Frequent Words Describing Positive Emotions.

Figure 3: Most Frequent Words Describing Positive Emotions.

Table 3: Sample Results after Automatic Coding

REF NO.	COVERAGE	Comment	Emotion
1	0.24%	It is a user-friendly application and it shows the best deals available for you and suitable food according to your choice.	Positive
2	0.11%	Some partners are fine and they deliver scrumptious food.	Positive
3	0.19%	Prima Facie the food app looks good and the number of options to choose from is also excellent.	Positive
4	0.48%	the deals and the offers they give and they give delivery options at every place and every favorite restaurant I need in my location so that I can eat happily .it saves me a lot of time from cooking so that I will complete my works in less time .	Positive
5	0.14%	It is easy to use and has really easy interface which attracts to order.	Positive
6	0.20%	am very disappointment, irritated, feeling like ashamed on myself choosing the app while was I starving.	Negative
7	0.43%	I ordered and by mistake selected my work location as delivery address but after knowing the address I started looking for option to change delivery address the minute I placed order but no use as there were no options.	Negative
8	0.14%	I value every penny I earn but this organization has made me feel weak.	Negative
9	0.23%	I would have been more spending that amount to any poor if I didn't get to eat but they fraudulently took my money.	Negative

Table 4: Results of Automatic Coding Different Categories

A : Very negative	B : Moderately negative	C : Moderately positive	D : Very positive
603	783	848	457

Of 983 comments, 603 were very negative, 783 were moderately negative, 848 were moderately positive and 457 very positive. Comments not coded in all four categories are deemed neutral. The NVivo auto code does not seek to label a whole comment as positive or negative, but isolated terms. For this cause, Table 3 states that certain responses are both moderately positive and moderately positive, or both very negative and very positive. These findings are shown in Figure 4 below

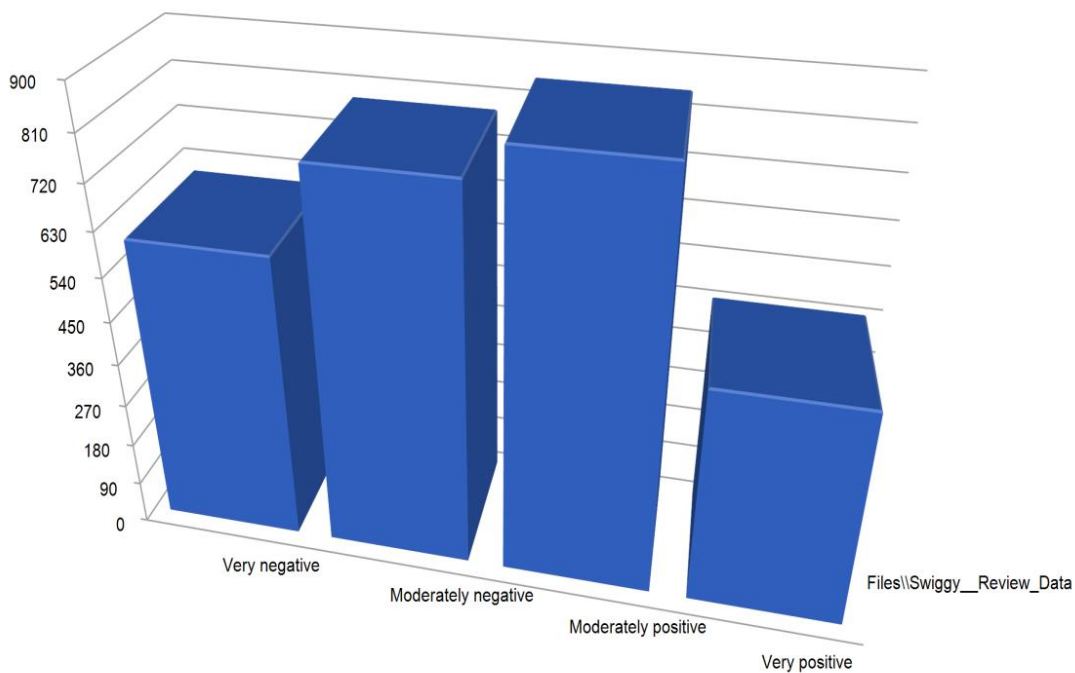**Figure 4: Summarised Results after Automatic Coding.**

Table 5: Items clustered by word similarity

Code A	Code B	Pearson correlation coefficient
Sentiment\\Positive	Sentiment\\Positive\Moderately positive	0.960929
Sentiment\\Negative	Sentiment\\Negative\Moderately negative	0.876845
Sentiment\\Positive\Very positive	Sentiment\\Positive	0.81655
Sentiment\\Negative\Very negative	Sentiment\\Negative	0.813847
Sentiment\\Positive\Very positive	Sentiment\\Positive\Moderately positive	0.62486
Sentiment\\Positive	Sentiment\\Negative	0.551093
Sentiment\\Negative	Sentiment\\Positive\Moderately positive	0.535064
Sentiment\\Positive	Sentiment\\Negative\Moderately	0.530234

	negative	
Sentiment\\Positive\Moderately positive	Sentiment\\Negative\Moderately negative	0.51223
Sentiment\\Positive\Very positive	Sentiment\\Negative	0.438519
Sentiment\\Negative\Very negative	Sentiment\\Negative\Moderately negative	0.434249
Sentiment\\Positive\Very positive	Sentiment\\Negative\Moderately negative	0.427305
Sentiment\\Negative\Very negative	Sentiment\\Positive	0.391686
Sentiment\\Negative\Very negative	Sentiment\\Positive\Moderately positive	0.383414
Sentiment\\Positive\Very positive	Sentiment\\Negative\Very negative	0.305168

The Pearson correlation coefficient is a linear correlation measure between two sets of Code A and Code B results. It is the covariance of two factors, separated by the phrases of their standard deviations; therefore, generally, it is a normalised covariance calculation such that the outcome has a value always between −1 and 1. As with covariance, the calculation

Conclusions

We also seen in this paper extracts and evaluates updates and feedback from Facebook pages, sites and other channels such as g2.com, mouthshut.com and trustpilot.com. At present, our dataset is restricted to only text results, emoticons, photographs, The auto code system in NVivo 12 was used to emotionally tag the comments. We saw that the proportion of negative comments was marginally higher than the amount of positive comments for the page 'Opposing views' Most positive feedback favour Food Delivery Apps deals and discounts and they sell delivery services in all places and restaurants that I need at my location to eat happily.

There are some negative remarks that are reflected on quite much. Poor service, plenty of error in the app, the issue is that most food products are too expensive relative to restaurants and delivery costs are also still quite large. The downside is that the delivery charges are very high and almost equivalent to the food rate to be lowered. The distribution staff are completely disrespectful. It takes late delivery often. This obviously indicates that Food Delivery App players' business plans identify and respect the negative voice of the consumer and provide fast solutions. Companies who rely on studying consumer psychology have a greater degree of intuitive service and customer loyalty. (Interpretation, Isah, Trundle, & Neagu, 2014)

These methods should be used for the assessment of customers. Sentiment analysis analysed by Hutto and Gilbert, which is quicker than conventional marketing testing, (2014) It is an important way for advertisers to get instant input on their products and services, helping them to predict how their product can operate on the market or to make a midcourse adjustment, if required. The sentimental review of the Food Delivery App makes it apparent that there are marginally more negative responses to the Indian industry than to Positive ones to Food Delivery Apps. This method allows advertisers to quickly gain a preliminary understanding of the psyche of consumers, which can then be supplemented by conventional market analysis techniques.

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AN ECO-FEMINIST VIEWPOINT ON THE WRITINGS OF INDIAN WOMEN IN ENGLISH.

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ABSTRACT

Ecofeminism is a term that refers to movements and ideologies that connect feminism with the environment. In her work, Le Feminism Ou la Mort, Françoise d'Eaubonne, a French writer, is credited with coining the word "feminism" (1974). According to Ecofeminism, the exploitation and dominance of women are linked with environmental degradation. It also asserts that there is a relationship between women and nature. Ecologists feel that the traditional female virtues of reciprocity, caring, and collaboration is shown by the fact that these traits are prevalent both among women and in nature, according to eco-feminists. Also included will be discussing the unique connection women have to the environment via their everyday interactions since this relationship has been often overlooked in society at large. Women in subsistence economies who make "wealth in conjunction with nature" have long been recognized as "experts in their own right" in terms of holistic and ecological understanding of the processes of nature. Novels by Kamala Markandya, Fire on the Mountain (1977) by Anita Desai and Gita Mehta, The God of Small Things (1997) by Arundhati Roy, and The Madwoman of an ogre (1998) by Sohaila Abdulali are among those being evaluated, which span the spectrum from early Ecofeminism to urban Ecofeminism. Women authors and their contributions to literature and the environment are highlighted in this essay, which establishes a case for their importance in an era of rapid and international technological growth.

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Keywords: Ecofeminism, environmental, degradation, spectrum, women and in nature.

Introduction

Environmentalism, also known as environmental women's liberation, is a branch of feminist thought that examines the relationships between women and the natural world. Françoise d Eaubonne, a French women's rights campaigner, was the one who gave it its name in 1974. According to the Oxford Advanced Learner's Dictionary, "Ecofeminism is defined as a philosophical and political concept and development that consolidates environmental concerns with women's activism concerns, believing that both are the result of male dominance of society." [7] Webster's New World Encyclopedia defines Ecofeminism as a "development or idea that applies women's activism principles and views to biological difficulties" (Webster's New World Encyclopedia). According to [8, it is one of the sorts of women's liberation that has erupted via the fusion of women's rights and environmentalist principles.] Eaubonne coined the word Ecofeminism in 1974, and it was first used by her in a feminist context. She used it to "invite women to take the lead in an environmental insurgency to save the earth" (Merchant 184). Environmental feminism is a

trend that finds a connection between the misuse and debasement of the natural world and the subjugation and persecution of women. It gained prominence in the mid-1970s in the vicinity of second-wave women's rights and environmental development. Ecofeminism combines elements of the women's activism movement with environmental advancements while also serving as a litmus test for both. The green product incorporates a concern about the impact of human activities on the non-human environment, whereas woman's rights include a view on humanity as gendered in ways that subordinate, abuse, and mistreat women. Ecofeminism places a heavy emphasis on the environment and how women are treated by a male-centric society. In their opinion, it is beneficial to show how women and nature are being wrongly abused by the disproportionate principles of the general public in general. Eco-feminists are proliferating because they believe that the planet has been sanctified and should be respected and spared. In their work, eco-feminists limit the different levels of structure that reward the ability of males while also taking into consideration the mistreatment of women and the environment. The eco-

feminists regard the scrape of nature and the scrape of women to be one and seek to bring to the fore solutions for both. Following in the footsteps of intuition, a branch of Ecofeminism called radical Ecofeminism was created along similar lines. Currently, the academics who have confidence in both women and nature are being negatively commoditized, and the male-centered society is to blame for this. Social eco-feminists, on the other hand, re-energize the link between women and the environment. They argue that due to their sex occupations (e.g., family nurturer and provider of sustenance) and their scientific training, women are becoming more connected to nature (e.g., period, pregnancy, and lactation). As a result, social eco-feminists believe that such ties enable women to become more sensitive to the sanctity and debasement of nature. They urge that this affectability be cherished by society to the degree that it contributes to developing a more straightforward relationship with the stable environment in which individuals must coexist to survive. Social Ecofeminism has also gained traction among nature-based religions and goddess and nature worship to reclaim both the otherworldliness of nature and women's essential role in that otherworldliness, as well as the role of women in that otherworldliness. Eco criticism is a continuing abstract approach that examines "the relationship between writing and physical state" and provides solutions to questions such as "How is nature being addressed right now? "When it comes to the land, how do our similarities and differences influence the way we handle it? In what ways has humankind's interaction with the natural environment been shaped by proficiency itself? What are the many methods and extent to which natural disaster has permeated modern literature and mainstream life today? so forth and so on." [10]

Another branch of Ecofeminism, known as Postcolonial Ecofeminism, is a concept that has been accessible for usage for quite some time but is still in its early stages of development. Since their inception, the related fields of postcolonial Eco criticism and Ecofeminism have been dominated by a primarily Euro American perspective, and the two areas have failed to adequately address the issue of

postcolonial Ecofeminism, which requires the two fields to recognize the "twofold tie" of being female while also being colonized. If one takes a postcolonial eco-feminist perspective, it would include the integration of postcolonial Eco criticism and Ecofeminism into a single systematic center, where it is essential to recognize that the misuse of nature and the exploitation of women are intimately linked to ideas of class, station, race (including colonialism), expansionism, and neo-imperialism.

Postcolonial Eco criticism is centered on the nexus between postcolonial and natural concerns, which is where they meet. Many commentators, particularly those from the strain of deep environment, have said that postcolonialism is fundamentally human-centric and that environmental concerns are optional to many discussions that have demonstrably contributed to racial segregation in the United States.

Eco-feminist writing in Indian English literature is a growing trend.

Nature has been bestowed to India by the gods, and the appreciation of nature has been a way of life from ancient times. Individuals have been paying homage to everyday objects such as the sun, the moon, trees, rivers, and so forth for centuries. However, as the times have changed, so has the extent of mankind's hostility against the natural world. Since ancient times, the male-dominated society in Indian culture has devalued nature and women to meet their own requirements. The Chipko development has been a significant step in the direction of this parochial community since it has brought to the forefront the women who, in large numbers, took up clubs to oppose the destruction of trees. The origins of tree-embracing were obtained to regulate deforestation, ambling, and mining, among others. This development resulted from a severe disturbance spread across the neighborhood, particularly among the women who were the most adversely affected by state-level actions that culminated in ecological deterioration.

Medha Patkar, Mahasweta Devi, Arundhati Roy, and C.K. Janu are among the women who have dominated the field of genuine concerns.

In their works, many female authors, such as Anita Desai, talk to nature or make use of nature imagery, which is analogous to female characters, allowing the reader to perceive new and unusual realms of Ecofeminism that were previously mentioned unknown. Her novels, such as Cry, the Peacock, and Fire on the Mountain, are a perfect wrapper for the burning themes of nature and woman. The Peacock's Cry refers to the inextricable bond that exists between nature and woman in Cry. A significant piece of Fire on the Mountain is on three female characters, Nanda Kaul, Raka, and Ila Das. The mental consciousness of these individuals has been portrayed via the use of everyday images to represent their reactions to different situations in life. The story depicts the darkest aspects of nature through the eyes of a mishmash of darker side characters that are worried about their loved ones. This epic demonstrates that ecocriticism is not just concerned with physical difficulties but also with the standard symbols that contribute to a valid link between human and non-human interactions. The God of Small Things, Arundhati Roy's most celebrated novel, depicts the relationship between women and nature and how both are exploited by a male-centric cultural tradition. Throughout the epic, the demise of the mythical town of Ayemenm is decoded. To complete the job that drives the road to the link between physical abuse and sex discrimination, the pollution of the Meenachal canal and restoration of the History House to its former status as a vacationer port is required. Kiran Desai's Hullabaloo in the Guava Orchard portrays the troubles that arise from man's interference with the natural order of things, and it demonstrates that the affection shared by people and animals is more solid than the affection shared by men. [13

In India, the Chipko development has gained significant notoriety, and it is now seen as a genuinely beneficial instance of grassroots ecology in India, according to current thinking. This evolution is also substantial in terms of how it prepared females. Through this evolution, the concept of tree embracing was developed to end activities like deforestation, blundering, and mining. The development started in the Garhwal region of Uttaranchal, located in the Indian state of Uttar Pradesh.

Because of the state's increasing commercialization and underdevelopment of the Garhwal region, the conceptualization of this development was influenced by decisions made at the state level, such as granting private temporary workers rights to gather wood for cricket bats and granting remote temporary workers rights to gather wood for other purposes. Because of widespread deforestation, the year 1970 saw the most devastating floods in recorded history, as well as the most hazardous avalanches.

Medha Patkar, Mahasweta Devi, Arundhati Roy, and C.K. Janu are some of the notable women who have played a role in advancing natural causes and advances in the past. Medha Patkar is the leader of the Narmada Bachao Andolan, a social development movement that includes indigenous people, Adivasis, ranchers, tree huggers, and human rights activists who are protesting the construction of the Sardar Sarovar Dam across the Narmada canal in Gujarat, India. Mahasweta Devi, both a lobbyist and a well-known women's activist essayist, has committed a significant portion of her activism and writing to the cause of the advancement of inborn persons and their situation in India, among other things. Arundhati Roy, best known as the winner of the Booker Prize for her novel The God of Small Things, devotes her time and energy to a variety of causes, including the Narmada Bachao Andolan, nuclear testing in India, and the support of separatists seeking Azadi (independence) in Kashmir. C.K. Janu, an Adivasi woman who has been involved in the Muthanga forests in North Kerala since 2003, is the most recent lady to come under the limelight for her environmental activism. She was first brought to public attention in the year 2003.

After considering India's technological achievements, it is surprising that many of the ecocritical works and activities that originate in this country have been omitted from the natural abstract legislation. Ecocritical writers who are activists or who write postcolonial Indian literature in English have, for the most part, not received much attention within the ecocritical community. It is thus necessary to provide a

case for why female journalists are essential to this endeavor.

Many Indian female writers study female subjectivity to develop a personality not dictated by a male-centered society, but their work also retains value since they include societal concerns as a central theme in their works of fiction. Women's composition in India, especially in the twentieth century, is coming to be recognized as a remarkable style of invention and women's independence. Indian female authors who write in English, such as Kiran Desai and Arundhati Roy, have achieved international acclaim by receiving prestigious awards such as the Booker Prize. Their contributions to the English-speaking academic world cannot be disregarded or marginalized.

In the contemporary environment, Indian female artists have begun to express their concerns about globalization in India, including its impact on sexual orientation and family relationships, and nature in its broadest meaning.

We have now arrived at the females who are writing Indian literature in English and on the planet. This section will attempt to answer the question of why it is necessary to examine postcolonial Ecofeminism in the compositions of Indian ladies writers, as well as what it is that these scholars bring to the table in terms of the philosophy, hypothesis, and lived material truth of women in and of the earth.

A variety of books, ranging from early Ecofeminism to urban Ecofeminism, are being considered, including Nectar in a strainer (1954) by Kamala Markandya, Fire on the Mountain (1977) by Anita Desai, A Riversutra (1993) by Gita Mehta, The Lord of Small Things (1997) by Arundhati Roy, The Madwoman of Jogare (1998) by Sohaila Abdulali, An Atlas of I'm

In the contemporary environment, Indian female artists have begun to express their concerns about globalization in India, including its impact on sexual orientation and familial relationships and the world in its broadest meaning. As a result, although their compositions may seem reasonably assured and private, they really represent a firm assertion of civic duty.

The irresolute connection that women have with the planet brings to the fore the existential and material crises that women and the environment are experiencing at the same time. A similar emphasis is placed on the materiality of nature in that nature is not merely a passive presence that exists out of sight. There is widespread agreement in modern ecocriticism that the earth is made up of spirit, sceneries, and places, and that they are socially created to give it importance, and that the implications of this significance are controlled by power and discourse.

Except for Arundhati Roy, no other Indian female author has been mentioned in the context of postcolonial ecocriticism or Ecofeminism, except Arundhati Roy herself. When it comes to doing an ecocritical reading of Roy's epic, many commentators have forgotten about the gendered viewpoints throughout the work. The disintegration of the anecdotal village of Ayemenem, which begins with Roy at that moment, highlights and parallels the ethical debasement of the characters, notably of the Ipe family, in the larger narrative. The visually arresting themes of pollution of the stream Meenachal and the History House serve as focal points in the portrayal of natural mistreatment associated with Ammu and Velutha's sex and positional separation in the state of Kerala. If Ammu maintains her optimism for a better future, which is also the word on which the story concludes, Baby Kochamma, on the other hand, becomes the most stringent enforcer of love rules and societal norms. Baby Kochamma's mind has been mangled by the minister's admiration and subsequent loss, and she reacts in the most unpleasant manner possible to the between-rank connection. Essentially, she expresses her vocation as a decorative plant expert, and her nursery is completely destroyed when she decides to live vicariously via television for the rest of her life. Against this backdrop, kin inbreeding takes place, providing Roy with an unnerving image of the bizarre that he uses throughout the whole narrative.

Indeed, even before the tremendous success of Roy's work, women's activist academics such as Kamala Markandya and Anita Desai, among others, have written extensively on the

subject of women and the environment. However, despite expounding on female characters' intimate and private lives, these essayists provide deeply political comments regarding societal concerns and Indian culture in general. One of the reasons female students in this group are often overlooked and undervalued is the emphasis placed on the individual and the private. Nectar in a Sieve by Markandya and Fire on the Mountain by Desai both portray darker tones of nature and the synchronized conjunction of the darker elements of each female depicted in their works. During Markandya's narrative, Rukmini and her family are on the verge of starving to death because nature is chaotic and there is a dry period. While Rukmini recognizes the role assigned to her, her daughter Ira is forced into prostitution due to the family's dire financial situation. Ila Das's attack in Desai's story is made with a lot of heart amid the haziness of the fields that should still be producing life. The barbarities that the females in Desai's novel must suffer are finally brought to a stop by Raka, who sets the backwoods ablaze once and for all.

Books that are becoming more modern include Abdulali's The Madwoman of Jogare, Mehta's A River Sutra, Anuradha Roy's An Atlas of Impossible Longing, and Usha K.R's Monkey-Man, deal with the relationships that women have with urbanization, progress, and urban life. When the city offers women open doors, it mirrors the conversation about globalization, which advocates for equal access to opportunities for everyone. Such links do not fit well with the duality of nature/culture that is prevalent today. The shift from rural to urban settings demonstrates that postcolonial Ecofeminism is not a static notion restricted to wild or vast open places alone. Additionally, these writings include elements of urban skepticism and franticness and an appearance of adjusting to the demands of globalization and development, demonstrating how cities may be places of both creation and obliteration.

Conclusion

The corpus of hypotheses of improvement and Ecofeminism, which contains Indian women's literature on the connections between women and the planet at that time, is also included. Using particular references to the social ecofeminism movement and Vandana Shiva, the articles written by these female journalists challenge the notion that women and nature are both myopic and patriarchal in their outlook. In both good and bad aspects, these pieces portray the women as well as the environment. The unthinking acceptance of the lady nature connection, especially in the Indian context or in the Third World in general, does not stand up under closer examination. According to these researchers, the hypothesis that, since women are disproportionately affected by environmental degradation, they have "typically" inspired attitudes about nature is proved to be false.

Taking everything into consideration, I've said that it's critical to disrupting the nature/culture dichotomy that has unquestionably adapted women to their natural environments. Disturbing the dualism puts the women in an uneasy state of mind regarding their interaction with nature, as they find themselves straddling the murky space between the two doubles. A significant component of the eco-feminist concept and female-driven activity prevents such a state of irresoluteness from developing. Ladies who write Indian literature in English portray this ambiguous connection with nature, providing an essential counterpoint to both theory and activist claims about women and the environment. Specifically, this work is a mediation into an area where women's composing has received little attention, and Indian women's fiction resists and intervenes in dominant patterns of conversation and lives to understand.

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AN EMPIRICAL STUDY OF FINTECH REVOLUTION AND ITS IMPACT IN TRANSFORMING FINANCIAL SERVICES INDUSTRY

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ABSTRACT

There has been tremendous growth in the financial sector and the industry has evidently gone through various transformational processes. Fintech companies are searching for new ways to create path breaking business models. Their focus is on enhancing the satisfaction level of customers and finding innovative methods to transform service delivery (Yeh, 2020). This approach is more like a revolution which seeks to improve efficiency in the whole system by making it customer centric and loaded with useful information. The companies which are still not on the way to connect to the approaches of Fintech Revolution would be hanging far behind in the race while others would definitely ace it. This study talks about the key changes that Fintech revolution shall bring about. The extent to which the financial service industry has moved ahead is also a pertinent topic to understand. Thus, this paper aims at visualizing such concepts so that one understands the influence of Fintech innovations in the industry. A sample of 179 respondents was surveyed to know fintech revolution and its impact in transforming financial services. Mean and t-test was applied to get the results. The study concludes that fintech is playing number of vital roles in transforming financial services and there is a significant impact of fintech revolution in transforming financial service industry.

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Introduction

The Fintech has become a buzz word in the current scenario in industries. This study describes different perspectives on the impact of Financial technology. There is an immense scope of Fintech to be explored and divided into various themes such as definition or the actual meaning, attributes, regulation, competition and the adoption of technologies. The digital innovation and technological advancements are transforming the financial services. Financial technology has seen much developments, such as marketplace lending, insurance technology, mobile money and so on (Gomber et al., 2018). Switching to Financial Technology users have found it much easier than the conventional methods. Digital transformations such as Robotic Process Automation, Artificial Intelligence, Machine Learning and Cloud Services etc. have made it more convenient for the retail consumers. Digital tools give a competitive edge to the companies nowadays therefore it has become a priority to meet the needs of the customers. The financial institutions or banks are using customized software for its operations and they are eventually trying to bridge the gap between internal processes using digitization (Warner & Wäger, 2019). This way they are attempting to compete with the ever rising Fintech firms.

These new innovative methods have the ability to create diversity within markets and make it more competitive. The concept of Fintech thrived specifically in areas where there are less developed financial systems. However, there is an underlying chance that the combination of intermediation and the new technologies might consolidate the conventional and new providers of financial services. Several monopolistic behaviors portrayed by large technology firms are being monitored. Financial services enterprises are shifting towards same kind of configurations driven by technology and are loaded with questions as to the need and process of regulating the external environment surrounded by new business models (Liu et al., 2015). There are challenges associated to financial stability, fair competition and also protection of the consumers especially related to data privacy.

During the covid-19 the need for digital tools and techniques have increased. Since Digital Connectivity has reached heights it is definitely going to replace the existing physical communication between various stakeholders and this process would entail producing financial services in the meantime. This would be pertinent because the providers of financial services, individuals and businesses would still get along after the pandemic is over. Since the pandemic has brought in many changes such as

the drift towards e commerce, digital payments and so on. These activities would intensify the usage of Fintech as well. The covid-19 outbreak also saw transformations in several places where mobility was restricted. More number of people downloaded financial apps during this time (Kakderi et al., 2021). Rise of digital currencies were witnessed in Central Bank. This study seeks to analyze the implications of Fintech around the world as technology is driving the industry in its own way and eventually speeding up the level of competition among firms.

Review of Literature

The term "Fintech" refers to new technology that focuses on improvingand automating the usage and delivery of financial services. Fintech, at its most basic level, is used to assist theorganizations, owners of the company, and individuals to manage the financial operations in a much better way, through the perusal of specializedalgorithms and software which runs on computers and, mostly on the smartphones. The term "Fintech" is a mix of "financial technology" and "financial innovation."(Legowo et al., 2020).

In order to leverage the services provided by Fintech companies one just needs to have a mobile device or a computer. The services offered are customized and offer its usage in a remarkable few seconds. Financial bodies and several banks are trying to get rid of the century old techniques and following technologically sound tools. The banking services are offered to the public with the help of excessively smooth and easy to use interfaces (Dapuez, 2016). At first, the government banks were prejudiced about the usage of digital tools but lately they have understood the pace of working of banks using such methods and therefore the traditional banks are shifting to these methods as well. Fast-paced and efficient banks are attracting more number of customers. Privately owned banks are well versed with the technological advancements. Thus, they do not have to worry about the same and witnessing this public sector banks are now understanding the poignancy of getting at par with them. The banking sector is just one example of how Fintech has impacted the industry. Apart from banking there are other sectors such as

payments, insurance, lending and borrowing, investment and so on (Varga, 2017). These activities have largely seen the effect of technology. The population has the most number of millennials and they are the ones who look for easy and smart techniques rather than age old methods such as standing in the queue for simple things like paying bills. This generation is smart therefore, Fintech start-ups for that matter have come up with innovative solutions to insurance schemes which have now become so seamless. There is a simple procedure of filling up an online form, customer assistance, filing claims and so on. Minimal documentation is required and there isn't a need to queue up in the insurer's office.

The Technological advancements in the industries have played a major role in transforming macroeconomics (Gomber et al., 2018). The initial definition of Fintech is an emerging area of the economy which is created out of upcoming businesses that tend to improve the financial market's services and products. The second definition of this Fintech refers to a group of new businesses withholding technology that are carving its way to designing and introducing novel technologies into the traditional financial sector of the economy using their own funds. The third way of interpreting Fintech is that it is a practical activity which focuses on the use of software to meet the need for financial market products (Zavolokina et al., 2016).

Fintech is no longer a banker's lingo. Instead of a so called jargon, it has now become a very common phrase in the field of technology as a whole. Global Fintech venture investments have more than doubled amount of $112 billion, up from $51 billion in the previous year (Cumming et al., 2019). This is more than just a proof that the financial services industry is on the verge of undergoing a digital transformation. This transformation has had a significant impact on all financial bodies and banks, all around the world.

Fintech is a technological innovation which seems quite difficult and challenging because it mainly focuses on supply and demand of goods and services as witnessed from the perspective of neoclassical economics (Khraisha & Arthur, 2018). However, digital innovation is the key driving force in the industries. Therefore,

policymakers would be in a better position to understand the important aspects which drive such changes around. The literature would enable them to analyze the factors which would be required to maximize the benefits of Fintech while simultaneously minimizing the hazardous effects or risks such as market structure, competition and consumer protection. Technological tools and knowledge are different from other resources in much peculiar ways. The advent of Fintech has removed the middlemen from the process and provide any product directly to customers without the need of any 3rd party. It is the best technique for start-ups to reduce costs for the intermediaries and they could suffice with minimum capital investments that is connected to the conventional and old banking services available.

The advent of ML, AI, cloud etc. has changed the way of data processing and analysis. This has significantly reduced the search cost as well. Gomber defines Fintech as a combination of "Finance and Technology" and is linked to the technologies found on the internet and the businesses associated to the banking industry (Gomber et al., 2018). There are five channels which could diverge the dynamics of the Fintech services market, namely, added value, players, tactics, rules and scope. Fintech has been defined as a purely functional method which provides certain changes in different terms of any topic or subject. There have been certain innovations which are disruptive in nature and are creating new business models, services, products, firms, systems and procedures because of IT developments. Fintech poses a challenge for the all the existing firms by bringing about new technological disruptions. Fintech is classified into four different categories namely, "peer-to-peer load and deposit platforms", "robo-advisors" proficient payment process and crowdfunding. Thereafter, Fintech has five specific elements associated to its ecosystem such as technology developers, financial customers of the government, start-ups, and old financial bodies. Fintech entails two important scopes. Firstly, technology has a major role to play and the other is that Fintech includes the rules and regulations of the government.

Conventionally, banks have always been in the frontline to use information technology. However, the present circumstances are forcing banks and financial bodies to increase their level of expertise in the IT domain. The situation calls for a cooperation and competition at the same time. This would help to create a niche for players and make it profitable for everyone in the market. Government has a say in the emergence of start-ups constituting of Financial Technology. The policies formulated by government has a part in the shaping of industries and its development (Wright et al., 2017). To introduce Fintech there has to be a systematic way led by caution. If Fintech start-ups are allowed to enter the market, many shortcomings or limitations could probably pop up and many requirements would not be fulfilled.

In some of the countries which are developed, government bodies might favor the Fintech start-ups whereas government bodies in other countries might favor protectionism more than development. For instance, Taiwan's regulatory body inspires old banks to invest in companies promoting financial technologies for cooperation instead of giving small funds to these entrepreneurs of start-up firms in order to develop new goods and services. Indonesia also has restrictions related to Fintech start-ups and brings forth various complexities with respect to Fintech revolution (Muthukannan et al., 2021). There are two focal points of Fintech, i.e., product development and innovation factors. It happens to be complex and rich and could only be adopted with caution. However, the results can turn out to be really worthy in terms of development and convenience. Some bodies are hanging on to the fact that Fintech could have a wider impact on technological front whereas some are worried about the compliance and regulations.

If information is asymmetric there exists economic frictions and such economic forces could lead to intermediaries and also shapes the structure of markets eventually. Technological developments have been a part of Finance for a long time now. However, major changes or improvements have evolved in system connectivity and computing costs and power. The reason for increased transactional costs and

new start-up entrants is definitely the improvements in Fintech (Imerman & Fabozzi, 2020). Customization is a new aspect which financial service providers have taken into account. They are allowing customers to choose their own personalized products. Customer attraction, financing, along with compliance activities, all these aspects of financial services involve classical economic scale (Mehdiabadi et al., 2020). Costs associated to assembly and consumer search are still intact in spite of so many technical advancements.

Consumers these days, are scarcely interested in age-old, traditional financial services in today's digital environment. People are preferring speedy and secure services. This is why Fintech and its start-ups are gaining more traffic and causing major transformations in the banking services industries.

Fintech revolution has entered the industry and made remarkable impact on various other platforms apart from banking, such as biometric sensors, online monetary transactions, technology consisting of smart chips, branchless-financing, chat bots for customer assistance, AI and many others.

Financial institutions and public owned banks have embraced Fintech due to the development of path-breaking technologies as well as the customer's demand for a secure and user-friendly interface to carry out banking transactions and other experiences related to it. Fintech encompasses everything that is mentioned in the literature so far. It is a cutting-edge technology which is now becoming more important than ever. Financial intrinsic banking software, Retail banking software, and a lots of other mechanisms will be added over the next few years, causing it to grow even more in the coming years. Only time shallnotify us the impact financial technology that is yet to come on our globe.

Objective of the study

1. To study Fintech Revolution in financial services industry.
2. To study the Impact of Fintech Revolution in Transforming Financial Services Industry

Research methodology

The present study was conducted with the help of survey method in which a sample of 179 people were surveyed through a structured questionnaire. Respondents from India and from financial sector were considered to know fintech revolution and its impact in transforming financial services industry. The study is empirical in nature and primary data was collected by random sampling. Mean and t-test were applied to reach the results.

Findings of the study

Table 1: General details of the respondents

Variables	No. of respondents	Percentage
Gender		
Male	107	59.8
Female	72	40.2
Total	**179**	**100%**
Age		
29-32 yrs	39	21.8
32-36 yrs	45	25.1
36-42 yrs	49	27.4
Above 42 yrs	46	25.7
Total	**179**	**100%**
Working Sectors		
Banking	39	21.8
Insurance	24	13.4
Retail market	31	17.3
Business	38	21.2
Others	47	26.3
Total	**179**	**100%**
Work experience		
1-3 years	57	31.8
3-6 years	63	35.2
More than 6 years	59	33.0
Total	**179**	**100%**

Table 1 is demonstrating the general details of the respondents where 179 people were surveyed to conduct the study. In them 59.8 percent are male and 40.2 percent are female and 21.8 percent are from the age group 29-32 yrs, 25.1 percent belongs to age group 32-36 yrs, 27.4 percent are 36-42 yrs of age and rest 25.7 percent are above 42 yrs of age. It is found from the table that 21.8 percent of the respondents are working in Banking industry,

13.4 percent works in Insurance sector, 17.3 percent are from the Retail market, 21.2 percent are doing their Business and rest 26.3 percent are from some others financial sectors. 31.8 percent of the respondents are working from 1- 3 years in financial sector, 35.2 percent are there from 3-6 years and 33.0 percent of them are having an experience of more than 6 years in the financial sector.

Table 2: Role and Impact of Fintech Revolution in financial services industry

SI. No.	Role and impact of Fintech Revolution in financial services industry	Mean score	t value	Sig
1.	Fintech companies are exploring different ways to create path breaking business models	3.63	9.16	0.00
2.	Fintech revolution has enhanced the satisfaction level of customers	3.79	9.52	0.00
3.	Fintech Revolution have found innovative methods to transform service delivery	3.91	12.39	0.00
4.	Fintech has encouraged the users to switch to Financial Technology for better services	3.94	12.19	0.00
5.	Fintech is helping financial services through digital transformations such as Robotic Process Automation, Artificial Intelligence, Machine Learning and Cloud Services	3.87	10.20	0.00
6.	Fintech was helpful for providers of financial services, individuals and businesses to get along during pandemic	3.70	10.18	0.00
7.	Due to Fintech, banking services are offering excessively smooth and easy to use interfaces services	3.81	9.77	0.00
8.	Fintech start-ups have come up with innovative solutions to insurance schemes	3.99	13.48	0.00
9.	Fintech had created upcoming businesses that tend to improve the financial market services and products	3.84	10.89	0.00
10	Fintech is helping businesses to withhold new technology that are carving its way to design and introduce novel technologies	4.00	11.73	0.00

Table 2 is showing the role and impact of fintech revolution in financial service industries. It is found from the table that Fintech is helping businesses to withhold new technology that are carving its way to design and introduce novel technologies with the mean score 4.00 and Fintech start-ups have come up with innovative solutions to insurance schemes with the mean score 3.99. Respondents also agree that Fintech has encouraged the users to switch to Financial Technology for better services with the mean score 3.94 and Fintech Revolution have found innovative methods to transform service delivery with the mean score 3.91. It is also believed that Fintech is helping financial services through digital transformations such as Robotic Process Automation, Artificial Intelligence, Machine Learning and Cloud Services with the mean score 3.87 and Fintech had created upcoming businesses that tend to improve the financial market services and products with the mean score 3.84. The respondents also say that due to Fintech, banking services are offering excessively smooth and easy to use interfaces services with the mean score 3.81 and Fintech revolution has enhanced the satisfaction level of customers with the mean score 3.79. Fintech was helpful for providers of financial services, individuals and businesses to get along during pandemic with the mean score 3.70 and Fintech companies are exploring different ways to create path breaking business models with the mean score 3.63. Further, t-test was applied to check the significance of all the statements where it is found that the value in the significance column for all the statements is below 0.05 (0.00).

Conclusion

Fintech has elevated the financial services sector and made financial transactions more accessible and user-friendly. It facilitates the smooth usage of both customers and enterprises

and helps them operate seamlessly. It saves time and effort by providing financial entrepreneurs with creative solutions for remaining competitive in this contested market. Fintech companies have made a tremendous impact in the KYC documentation process, and made the job of investors much easy. Financial inclusion has been aided by the entrance of Fintech firms. The introduction of applications such as BHIM and UPI have enticed millions of Indians to conduct business online (Panda&Joy, 2020).

The existing literature analysis has helped by providing us with important insights into the dynamics of Fintech, which are considerably and significantly different from those of technological start-ups. However, both the expanding presence in the global market and the apparent lack in some areas offer chances for the literature to be strengthened and possibly reshaped. There is an abundance of Fintech opportunities that could shape the future in a more realistic way, by making the processes smooth and easier for consumer's usage.

The study concludes that fintech is playing number of vital roles in transforming financial services by exploring different ways to create path breaking business models, enhancing the satisfaction level of customers, helping financial services through digital transformations, it is helpful for providers of financial services, individuals and businesses, providing smooth and easy banking services and offering innovative solutions to insurance schemes. It is also found that there is a significant impact of fintech revolution in transforming financial service industry.

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STUDY OF ANTIBIOFILM ACTIVITY OF BUTEA MONOSPERMA SILVER NANOPARTICLES ON CANDIDA ALBICANS, PROTEUS MIRABILIS.

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ABSTRACT

Trees are very important to us. It absorbs a lot of metric tons of pollution in a year and cleans the environment. Silver nanoparticles are deemed the most positive, considering their strong volume surface region, and is of concern for study because of the improved microbial tolerance to antibiotics and medicines. Therefore, green synthesis of nanoparticles of silver using biomolecules derived from various plant sources in the form of extracts can be applied for the screening of different diseases which trigger microorganisms and for the physical and biological characterisation of plant-derived silver nanoparticles. The experiment involved the green synthesis of silver nanoparticles (AgNPs) from Butea monosperma leaf extract. Biosynthesized Butea monosperma -AgNPs were characterized by UV-visible spectroscopy, fourier-transform infrared (FTIR) spectroscopy and scanning electron microscopy (SEM). The intensity of peak broad range 200-800nm in UV-vis spectra, EDS test. The SEM shows the actual size of the nanoparticles. Antibiotic-resistant and biofilm-forming bacteria have surprisingly increased over recent years. the rate of development of new antibiotics to treat these emerging issues is very slow. Therefore, the aim of this study was to prepare novel nanoparticles formulations to improve the antimicrobial activity. In the present work, I have attempted to test the prepared nanomaterials against the biofilm of C. albicans and P. mirabilis. the cells of Candida albicans, Proteus mirabilis and mixed culture cells were allowed to form biofilm in presence nanoparticles synthesized from Butea monosperma, viz., A-Y water AgNPs & B-Y ethanol AgNPs, the biofilm formation got inhibited. Form the biofilm inhibition data, it seems that A-Y (water AgNPs) is most active inhibitor of Candida biofilm (5 uL), whereas B-Y (ethanol AgNPs) is most active inhibitor of Proteus biofilm (2.5 uL). Mixed biofilm was most efficiently inhibited by B-Y ethanol AgNPs (5 uL)., viz., A-Y, B-Y, C-Y and D-Y, A-water, B Ethanol, C methanol & D acetone Butea monosperma AgNPs solutions

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Keywords: Nanoparticles, Butea monosperma, AgNPs, UV-visible spectroscopy, fourier-transform infrared (FTIR) spectroscopy and scanning electron microscopy (SEM), Anti-biofilm, C. albicans , P. mirabilis)

Introduction

Bacterial infections are the second acknowledged cause of death worldwide and the third in developed countries. The therapeutic efficiency of antimicrobials has become more complex due to the emergence of multidrug resistance. *(Hwang et al. 2016.) B. monosperma* has numerous pharmacological activities such as anthelmintic, anti-conceptive, anticonvulsive, antidiabetic, antidiarrheal, antiestrogenic and antifertility, anti-inflammatory, antifungal, antibacterial, antistress, anticancer, antioxidant, chemopreventive, haemagglutinating, hepatoprotective, thyroid inhibitory, antiperoxidative, hypoglycemic effects, wound healing activities, anti-giardiasis, antifertility, chemo preventive activities and radical scavenging activities (Sindhia *et al* 2010 More et al 2012 Sharma and Deshwal 2011 Chandraker 2014 Madhavi 2013)Candida albicans is commonly found as a commensal fungus in the mucosa lining of humans. Normally, this organism does not provoke immune responses in individuals with a normal immune function. When the immune system fails and the host's environment changes, infections can develop that are superficial to life-threatening. A high rate of mortality and morbidity is associated with systemic candidiasis. As much as 10-24% of patients with invasive Candidiasis die. This opportunistic pathogen can survive on abiotic surfaces for up to four months. As a result of its ability to form biofilms and change its morphology, the organism can survive on abiotic surfaces. An extracellular matrix surrounds polymorphic cells (yeast, hyphal, pseudo-hyphal cells) of this organism. The extracellular matrix contains proteins, polysaccharides, glycerolipids, and DNA. Extracellular DNA is essential for establishing structural integrity of the biofilm and safeguarding it from external agents, such as antifungal therapeutics. Additionally, it prevents the penetration of antifungal agents into the biofilm. In addition to colonizing medical devices such as catheters, pacemakers, prosthetics, and other abiotic surfaces, biofilms

may act as reservoirs for pathogenic cells. Biofilms are inherently resistant to antimicrobial agents because of their composition. Therefore, disrupting the biofilm might be crucial to infection treatment. C. albicans pathogenesis relies heavily on biofilms, so novel strategies to inhibit and disrupt the formation of biofilms are needed. Scientists are considering nanotechnology as a possible strategy to inhibit Candida biofilms. Physico-biological concepts are integrated in nanotechnology for the development of novel therapies.

A common cause of catheter-associated urinary tract infections (CAUTIs) is Proteus mirabilis, a Gram-negative bacterium. Infections caused by such bacteria are mainly caused by the formation of biofilms on catheter surfaces. Virulence factors expressed by P. mirabilis are necessary for forming biofilms. Factors such as adhesion molecules, quorum sensing molecules, lipopolysaccharides, efflux pumps and urease enzymes may be involved in this process. Developed on catheter surfaces, P. mirabilis biofilms have the unusual characteristic of being crystalline due to their ureolytic biomineralization. The result is catheter encrustation and blockage, often accompanied by urine retention and ascending UTIs. Bacteria embedded in crystalline biofilms become highly resistant to conventional antimicrobials as well as the immune system. Being refractory to antimicrobial treatment, alternative approaches for eradicating P. mirabilis biofilms are urgently required. The term nanomaterial refers to materials with a diameter smaller than 100 nanometers. Among the traditional methods used to synthesize these nanoparticles are precipitation, wet chemical synthesis, sol-gel, and pyrolysis. However, these methods are highly energy-intensive and, therefore, not environmentally friendly. In the present work, we have attempted to test the as-prepared nanomaterials against the biofilm of C. albicans and P. mirabilis. Proteus mirabilis is a common pathogen responsible for complicated urinary tract infections (UTIs) that sometimes causes bacteremia. Most cases of P. mirabilis bacteremia originate from a UTI. Candidiasis is a fungal infection caused by a yeast (a type of fungus) called Candida. Some species of Candida can cause infection in people; the most common is Candida albicans. Candida normally lives on the skin and inside the body, in places such as the mouth, throat, gut, and vagina, without causing any problems. Candida can cause infections if it grows out of control or if it enters deep into the body (for example, the bloodstream or internal organs like the kidney, heart, or brain). *(Chi-Yu Chena et al. 2012).* Metals such as metals and metal oxides, silicates, non-oxide ceramics, polymers, organic materials, biomass and biomolecules may be used for producing nanoparticles. In many morphologies, nanoparticles occur, including balls, cylinders, platelets, tubes etc. Inorganic nanoparticles such as golden and silver metal nanoparticles have superior material properties with mechanical flexibility, with broad availability, comprehensive mobility, strong compatibility, selective therapeutic products and regulated drug release capabilities (Xu *et al*., 2006). For the synthesising and stabilisation of silver nanoparticles, many physical, chemical and biological methods were used (Senapati *et al*., 2005). The word biofilm has been used to refer to the thin coated condensations of microbes (for example bacteria, fungi, protozoa, etc.) which can appear in different types of surface structures. Antifungal performance may be calculated by means of well diffused methods on various fungal strains. Free floating bacteria, classified as planktonic microorganisms in an aqueous climate, are a requirement for the development of biofilms. Thus, such films may be formed on every organic or inorganic substratum where planktonic microorganisms prevail in a water solution (Choudhary *et al*., 2012). Because of its unusual physical and chemical properties, silver nanoparticles (AgNPs) are progressively being used in numerous fields, including medical, fruit, patient treatment, consumption and industrial uses. This involves visual, electronic, thermal, heavy electrical and biological characteristics (Gurunathan *et al* 2015). Because of its unusual properties, it has been used for many applications in the medicinal, food processing, surgical, orthopaedic, medication distribution, anticancer industries, as well as for numerous applications such as non-bacterial agents,

automotive, domestic and health goods, electronic products, medical equipment jackets, optical sensors and cosmetics AgNPs have been widely used lately in numerous textiles, keyboards, wound dressings and biomedical instruments. The nanosized metallic particles are peculiar and, because of their surface to volume ratio, can greatly alter physical, chemical and biological properties; thus, nanoparticles have been used for different purposes. In order to satisfy the AgNPs criterion, different methods for synthesis have been introduced. In general, current approaches of physics and chemistry appear rather costly and risky. It is important to notice the high yield, solubility and high stability of biologically prepared AgNPs (Gurunathan *et al* 2015). Biological methods for AgNPs seem simplistic, quick, nontoxic, reliable and green among. A range of analytical methods are used, including UV spectroscopy, Xray diffractometry (XRD), Fourier infrasound transform spectroscopy (FTIR), X-ray photoelectron spectroscopy (XPS), DLS scanning, SEM, transmission electron microscope (TMM), atomic force microscopy (AFM). Several competent books and studies have identified different styles of methodological methods for characterising AgNPs. A highly effective and accurate technique for the primary characterization of synthesised nanoparticles used for tracking the production and stabilisation of AgNPs is UV-Visible Spectroscopy. (Sastry *et al* 1998).

Materials and methods

Sample preparation: The young and disease free leaves of ***Butea monosperma*** were selected.

Drying of leaves: Samples were dried in room temperature for more than two weeks, so that they may be converted into fine powder.

Preparation of fine powder: after proper drying of leaves, thick mid ribs of the leaves were removed, dried leaves were grinded into fine powder using a grinder.

Preparation of extracts: aqueous extracts using distilled water, 50% ethanol, 50%methanol & 50% acetone were prepared.

1.1 Synthesis of Silver Nanoparticles from ***Butea monosperma*** extracts:

AgNPs were synthesized by the following method. 10mM $AgNO_3$: plant extracts in different solvent in 9:1 ratio in a reagent bottle mixed thoroughly, forming a uniform mixture. The mixture was then rested at room temperature for 24 hours at 37°C, with continuous monitoring. After about few minutes, the mixture was observed to start changing from pale green to yellowish brown. After about 24 hours, the mixture had completely changed colour to brown in all solvents. This color change is visual evidence of formation of AgNPs. *(Kasthuri et al., 2009).*

1.2 Characterization of silver nanoparticles.

For determination of the time point of maximum production of silver nanoparticles, the absorption spectra of the samples were taken200–8000 nm using a UV–vis spectrophotometer. The silver nanoparticles were synthesized by novel green chemical route. The nanoparticles were characterized by UV- spectral analysis, SEM -EDAX analysis (Scanning Electron Microscopy) was performed for studying the surface morphology & to predict the size of the nanoparticle. Also, FTIR analysis was conducted for identifying the presence of functional groups. (*Anuja et al. 2020*)

1.3 Anti-biofilm activity

Anti-biofilm activity was performed using MTT assay to check cytotoxicity of nano particles on the ***C. albicans, P. mirabilis.*** All 4 nanoparticles synthesized from ***Butea monosperma*** extracts: viz water, 50% ethanol, 50% methanol & 50 % acetone AGNPs were screened for antibiofilm activity, and a mixture as well into 96 well plate containing various volumes (0-10uL) of different nanoparticles, viz., A-Y (water), B-Y (50% ethanol,), C-Y (50% methanol) and D-Y (50 % acetone) In 96 well plate and incubated at 37ºC. After incubations, 10 ul of 10 mg/mL MTT solution was added in each well, and plate was incubated for 2 hours in dark at 37ºC. After incubation, 100uL DMSO were added to each well and the solutions in each well was read at 570 nm on multimode plate reader. Control samples were without nanoparticles under similar conditions. (*Tereza 2018*)

Result & Disscussion

The detailed study on biosynthesis of silver nanoparticles by natural ***Butea monosperma*** extracts such It was observed that the color of the solution turned from yellow to bright yellow and then to dark brown after 1,24 and 48 h of the reaction, which indicated the formation of silver nanoparticles (fig 1).

The formation and stability of the reduced silver nanoparticles in the colloidal solution was monitored by UV–vis spectrophotometer analysis. The UV–vis spectra show maximum absorbance at 420 nm, which increased with time of incubation of silver nitrate with the plants extract. The curve shows increased absorbance in various time intervals (1 h, 24 h and 48 h) and the peaks were noticed at420 nm corresponding to the surface plasmon resonance of silver nanoparticles. The observation indicated that the reduction of the Ag+ ions took place extracellularly. It is reported earlier that absorbance at around 430 nm for silver is a characteristic of these novel metal particles (Nestor *et al*., 2008). The synthesis of AgNPs from the ethanolic, aqueous, methanol & acetone extract of leaves of ***Butea monosperma*** was further confirmed by ultraviolet - visible spectroscopy (UV/VIS) in the range of between 200 nm to 800 nm and solvents were used as a blank. The spectrum has a maximum absorption peak at a which is reported to have an absorption maximum of between about 400nm to about 450nn. The presence of the maximum peak absorption peak at 400nm to about 450nn is therefore an indication and confirmation that the AgNPs were present. (Fig 1)

Fig 1. Synthesis of nanoparticles & presence of the maximum peak absorption peak at 400nm to about 450nn
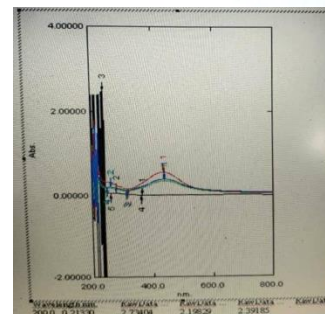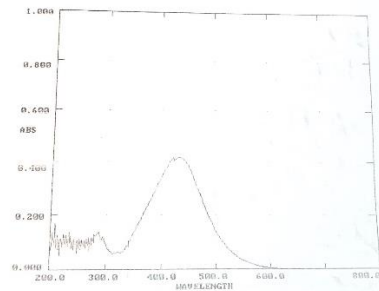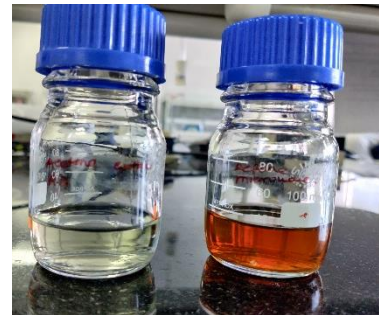
Fourier Transform Infra-Red Spectrometer (Equipped With ATR) Model Tensor 600 Brucker. As seen in figure given below, FTIR spectra of all samples shows similar pattern.

Fig 2. FTIR spectra of all four solvents of *Butea monosperma* synthesized Sliver AgNPs
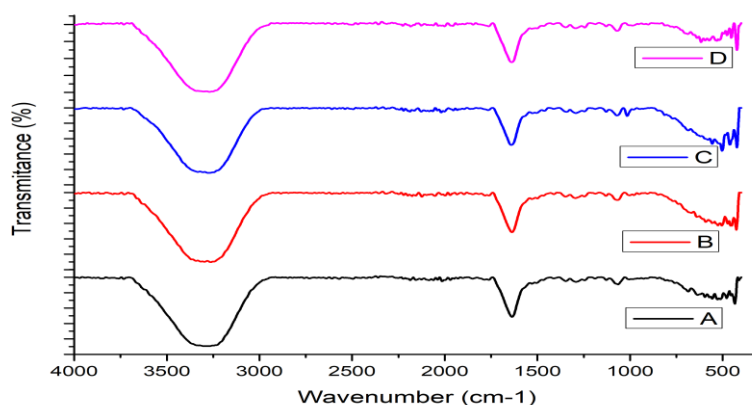

FTIR spectra depicts bands at ~3200-3300 corresponding to alcoholic O-H stretching, bands at ~ 1620 corresponds to; where as small band at ~1100 is corresponds to alcoholic C-O bond, metallic silver bond is seen at ~450 cm-1. Fig 2 where A-water, B Ethanol, C methanol & D acetone solvents respectively.

Field Emission Scanning Electron Microscopy (Fe-SEM) & Energy Dispersive X-Ray spectroscopy (EDS) Analysis. Thin film of the as obtained sample was prepared on cleaned glass plate using drop casting technique. This film is dried under Infra-Red lamp at room temperature. As depicted in electron micrographs, sample consist of clusters of ultrafine nanoparticles of size ~40-75 nm. Fig 4 To confirm the composition of the sample, EDS analysis is done. As seen from the spectra depicted in chart 1, Sample prominently consist of Ag along with S, P, O and Si.

**Fig 3 Field Emission Scanning Electron Microscopy (Fe-SEM)**
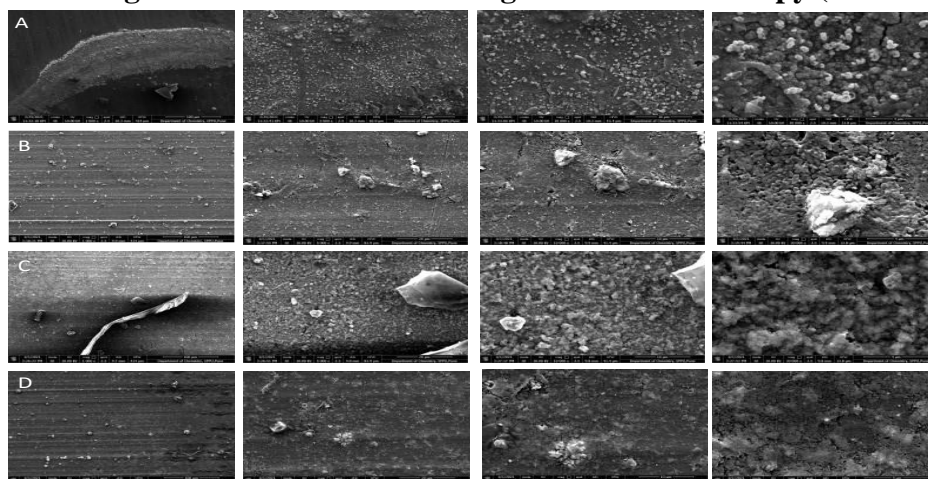
| Table 1. Elemental composition of as synthesized sample					
Element	Atomic No	A	B	C	D
Carbon	6	23.81	20.64	19.07	22.53
Aluminum	13	10.18	ND	ND	ND
Silver	47	47.10	45.49	44.70	45.60
Sulfur	16	5.20	ND	ND	ND
Phosphorus	15	1.50	ND	ND	ND
Silicon	14	1.23	ND	ND	ND
Oxygen	8	10.98	9.91	36.24	31.88

Antibioflim Activity

Anti-biofilm activity was performed using MTT assay to check cytotoxicity of nano particles on the ***C. albicans, P. mirabilis.*** All 4 nanoparticles synthesized from ***Butea monosperma*** extracts: viz water, 50% ethanol, 50% methanol & 50 % acetone AGNPs were screened for antibiofilm activity, and a mixture as well into 96 well plate containing various volumes (0-10uL) of different nanoparticles, viz., A-Y (water), B-Y (50% ethanol,), C-Y (50% methanol) and D-Y (50 % acetone) In 96 well plate and incubated at 37°C. After incubations, 10 ul of 10 mg/mL MTT solution was added in each well, and plate was incubated for 2 hours in dark at 37°C. After incubation, 100uL DMSO were added to each well and the solutions in each well was read at 570 nm on multimode plate reader. Control samples were without nanoparticles under similar conditions. When the cells of *Candida albicans*, *Proteas mirabilis* and mixed culture cells were allowed to form biofilm in presence nanoparticles, viz., A-Y, B-Y, C-Y and D-Y. A-water, B Ethanol, C methanol & D acetone solutions, the biofilm formation got inhibited (figure 4 A-C)
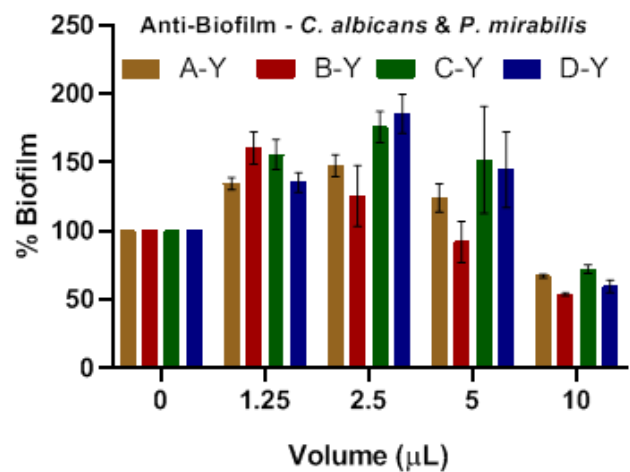
Figure 4 (A): *Candida* Biofilm inhibition
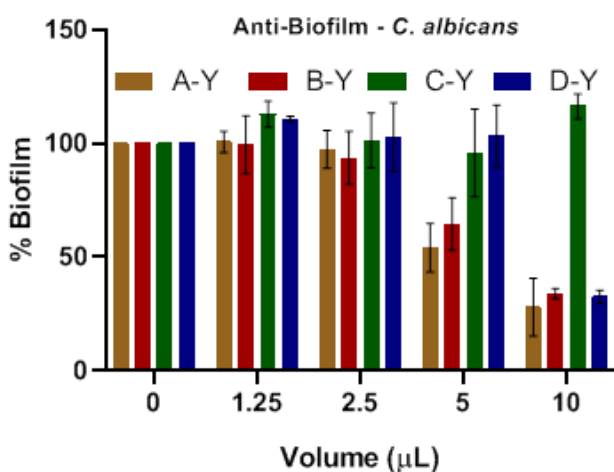
Figure 4 (B): *Proteus* Biofilm inhibition
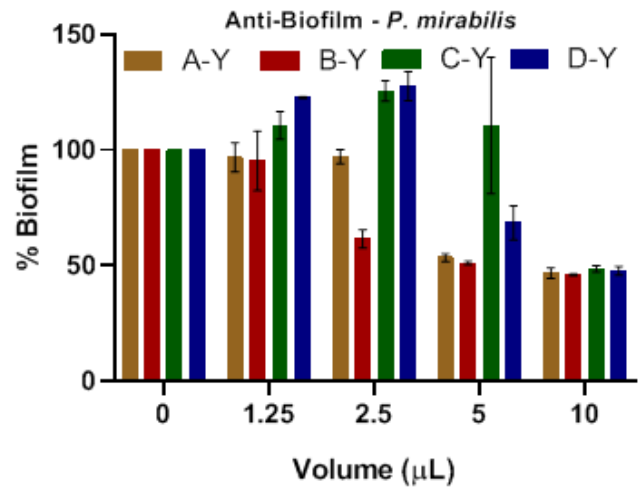
Figure 4 (C): Mixed Biofilm inhibition of *Candida* and *Proteus*

Form the biofilm inhibition data, it seems that A-Y (water AgNPs) is most active inhibitor of *Candida* biofilm (5 uL), whereas B-Y is most active inhibitor of *Proteus* biofilm (2.5 uL). Mixed biofilm was most efficiently inhibited by B-Y (Ethanol AgNPs) (5 uL).

Conclusion

The extract from the leaves of ***Butea monosperma*** synthesized Sliver AgNPs multiple solvent concentrations showed antifungal as well as antibacterial activity capable of inhibiting the growth of *Candida & Proteus* species as well as the formation of C. albicans *&, P. mirabilis* biofilm, Mixed Biofilm inhibition of *Candida* and *Proteus* was clearly observed.

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INTRODUCING WEANING FOOD FOR IMPROVING DEVELOPMENT DURING INFANCY

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ABSTRACT

When a child is born, he stays on her mother's milk for the primary few months of life. As he begins off evolved developing, his urge for food additionally begins off evolved growing and calls for the creation of stable ingredients step-through-step. This slow transition from breast milk to stable meals is referred to as weaning. Weaning from the breast is a natural, inevitable degree in an infant's improvement. It is a complicated system regarding dietary, immunological, biochemical and mental adjustments. Weaning ingredients are dietary supplements to breast milk pending the creation of a person weight loss program. The primary standards for a good-fine weaning meals are excessive balanced-protein content, excessive caloric cost in line with unit of meals volume, smooth texture with low fiber content, ok diet and mineral contents, and lack of antinutritional factors. Eating collectively is likewise an essential social activity. It is idea that toddlers can study talents like ingesting from looking others. Weaning additionally gives an excellent possibility for all participants of own circle of relatives to emerge as worried in feeding baby.

Keywords: Breastmilk, Infancy, Nutrients, Weaning Food

Introduction

The phrase weaning comes from the phrase 'weanion' because of this that to accustom. Generally, weaning denotes a system wherein semi-stable ingredients are brought in an little one's weight loss program and thereafter, composition and consistency of diets steadily boom and breast milk receives absolutely replaced. Weaning ingredients are complementary- that is, they supplement the mother's milk. The primary motive of introducing those ingredients is:
• to offer the flavor and range in a child's weight loss program,
• to offer the "missing" vitamins,
• to educate the child – a way to swallow, chunk and consume,
• to habituate the child with flavours & flavor of domestic meals.[1]
The WHO and UNICEF each suggest different breast feeding for the primary six months (one hundred eighty days), after that introduce supplementary feeds steadily at the side of breast feeding until the age of 1 year.[2]

In India, Hindu tradition commemorates the creation of first ingredients with the ceremonial ritual Annaprashana. Amongst the diverse Indian weaning ingredients, Rice is the primary meals presented to the toddlers. This grain initiation of the child at 6 months of age is a had fun event in Indian families. The little one's intestine improvement is slow and acceptability to new ingredients is slow. Lactation tapers down after the child is sort of 6 months of age and breast milk is inadequate to satisfy urge for food or assist increase that is fast up until the kid turns.[3]

Weaning Types:

Weaning is the system through which toddlers who have been completely reliant on milk are brought to stable ingredients. It begins off evolved with the primary mouthful of meals and ends with the final feed of breastmilk or formulation milk. Weaning is generally divided into fundamental approaches: conventional and child-led.[4]

Image no.1 Weaning type [4]
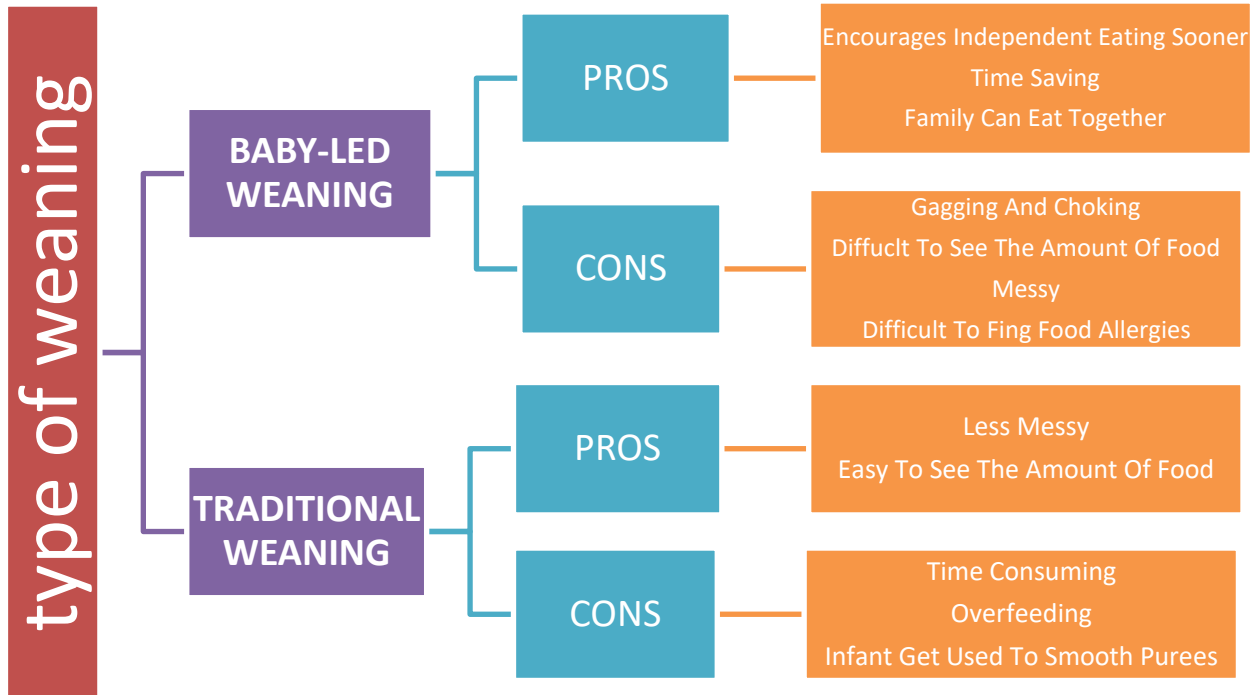
Baby-Led Weaning

In this method, toddlers are recommended to self-feed from the begin. Mother can introduce stable ingredients as finger ingredients and permit for infant to discover solids at their very own pace.

Traditional Weaning

In this approach, feed child and steadily introduce it to greater stable ingredients. Mother will start with easy purees earlier than shifting to mashed and chopped ingredients, then finger ingredients and ultimately small bites.[4]

Important Of Weaning

Weaning is essential due to the fact ingesting stable ingredients enables child to discover tongue, lip and jaw movements. Through the weaning system, toddlers discover ways to chunk and swallow earlier than the quit in their first year. child additionally learns to consume in a social setting, with different human beings round a desk that is extraordinarily essential for his or her cognitive and social improvement. Even aleven though breast milk meets maximum of the dietary necessities of a little one, it won't be simply sufficient to fulfill the desires of a developing child. Therefore, to assist the increase and improvement of the child, creation to distinctive varieties of stable meals for 6-month child is essential. Weaning additionally will become step one closer to a little one weight loss program.[5]

Benefits Of Weaning

Becoming more self-dependent:

Most people have observed our toddlers achieving out to meals whilst in our arms. They begin experimenting with the meals they locate inside their reach. Though this could emerge as a messy affair, it enables in selling higher hand-mouth coordination and has many sensory benefits. Hence, it's far essential to permit the child discover the textures and experience the burst of flavour.[5]

Developing preferences:

During weaning, a child is brought to an entire new international of ingredients and that is the time while he/she begins off evolved growing likes and dislikes closer to them. This, in turn, makes child greater aware about his selections and his liking, which enables increase his personality.[5]

Having a balanced diet:

The fundamental motive of weaning is to introduce toddlers to meals aside from breast milk. By introducing child to an entire new variety of meals products, you're boosting their

consumption of healthy vitamins which might be wished for increase and improvement. With the decreased dependency on breast milk, toddlers may have their proportion of iron, vitamins, and minerals from distinctive varieties of meals.**[5]**

Building the baby's developmental skills:

Babies discover ways to coordinate their lips, tongue, and jaw movement, which make a contribution significantly closer to speech improvement. They additionally discover ways to chunk and swallow and triumph over their gag reflexes. During little one weaning, toddlers construct diverse essential motor talents and developmental talents. Along with those, they study hand-mouth and hand-eye coordination as they select out up meals and begin.**[5]**

Nutrient In Weaning

A suitable weaning meal need to be excessive in nutrient density, wealthy in energy, good enough in suitable-fine protein, vitamins, and minerals, low viscosity, low bulk density and suitable texture. The meals, whilst stirred with bloodless, heat water or milk, need to shape a slurry or semisolid mass of smooth consistency, allowing the kid to swallow it effortlessly. Weaning meals need to be precooked and pre-digested or processed in this sort of manner that it wishes minimal instruction earlier than feeding and is effortlessly digested through the kid. The composition of the meals should observe the tips and requirements encouraged through equipped agencies, inclusive of the Bureau of Indian Standards. WHO recommends that babies should begin receiving complementary meals at 6 months of age further to breast milk. Initially, they need to take delivery of complementary meals 2–three instances an afternoon among 6–eight months and growth to three–four instances each day among nine–eleven months and 12–24 months. According to guidelines given through WHO, complimentary meals need to include as a minimum 15 g of protein consistent with a hundred g dry weight, and approximately 21% of its power need to come from fats. An imbalance of energy from special vitamins might also additionally have an effect on the fine of the eating regimen. **[1]**

Image no. 2 Food include in baby's diet **[8]**
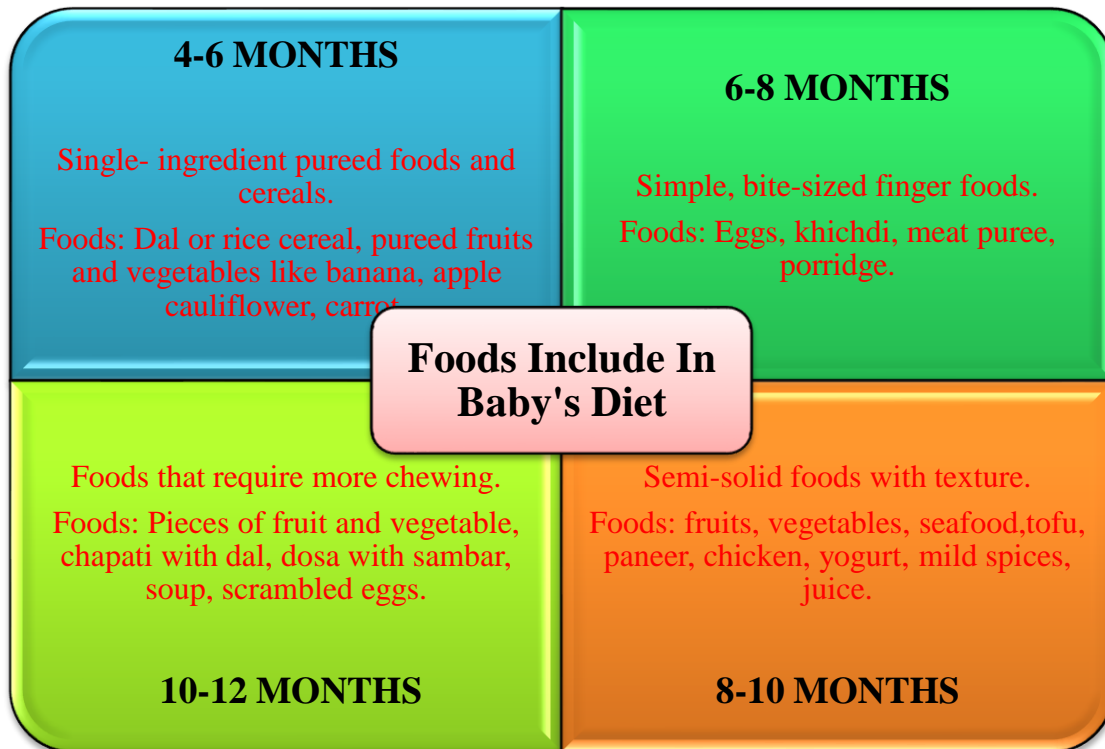
The characteristics needed in a weaning food are the following:

➢ The meals need to be wealthy in energy and good enough in suitable-fine protein, vitamins, and minerals.
➢ The meals, whilst stirred with bloodless or heat water or milk, need to shape a slurry or semisolid mass of smooth consistency, allowing the kid to swallow it effortlessly.
➢ The organized meals need to have low nutritional bulk.
➢ The meals need to be precooked and predigested or processed in this sort of manner that it wishes minimal instruction previous to feeding and is effortlessly digested through the kid.
➢ The meals need to be loose from antinutritional elements and occasional in indigestible fiber content material.
➢ It is beneficial now no longer to feature synthetic colorations and flavors to weaning meals, and the composition of the meals should observe the tips and requirements encouraged through equipped agencies, inclusive of the Bureau of Indian Standards. According to the tips of the Protein Advisory Group, weaning meals need to have a protein content material of as a minimum 20% (on a dry weight basis), a fats content material of 10%, a moisture content material of 5% to 10%, and a complete ash content material of now no longer extra than 5%.[6]

Some food and Ingredients should not give to the baby, such as;

Salt: Having salt in child's meal may be risky for his/her kidneys. Try to absolutely keep away from salt in kid's meal as much as the age of 1. [5]

Sugar: Sugar also can cause enamel decay and might reason an dangerous weight benefit in children. Offering sugar to infants might also additionally appear like a innocent component to do however sugar substantially contributes to coronary heart diseases, obesity, and excessive blood strain on the later degree of the child's life. Babies need to now no longer take delivery of any sugar as a minimum until 2 years of age. [5]

Honey: honey can include a form of microorganism that may be poisonous to a child's intestines. microorganism that may reason botulism in babies and need to be averted till 1 yr. of age. [5,7]

Undercooked eggs: The child needs to know no longer take delivery of undercooked eggs; it contains salmonella. Offer mashed hard-boiled eggs to the child to get rid of the danger of salmonella. [5]

Whole nuts: walnuts and dry culmination need to take delivery of the kid withinside the shape of paste. [7]

Grapes, raisins, and peas: Small meals like grapes, raisins, and peas can pose a choking danger to infants. It is extraordinarily vital to reduce or mash those meals earlier than imparting to a child. [5]

Certain fish: Shark, swordfish and marlin include strains of mercury. So do now no longer consist of those dishes in child's eating regimen.

Tea or coffee: Tanin is found in tea and coffee. So, the mom needs to know no longer be tempted to feature a bit tea to child's bottle to heat his milk. The tannin in tea might also additionally save you him from soaking up the iron in his meals properly.

Low-fat foods: Cow's milk: whilst the child is antique 365 days then do now no longer deliver cow's milk as a first-rate drink. It would not have sufficient vitamins and is likewise tougher on child's kidneys than breastmilk or components milk and may cause milk allergy. [7]

Table no. 1 Food/ingredient avoid during weaning. [5, 7]

S.No.	Food/ingredient	problems	Increase / Decrease Diet
1	Salt	Kidney problem	Less salt
2	Sugar	tooth decay	give diluted fresh fruit juice (without sugar)
3	Honey	botulism	Small amount and pure
4	Undercooked eggs	salmonella	Mashed boiled egg
5	Whole nuts:	choking	Paste of nuts.

6	Grapes, raisins, and peas	choking	Mashed or soup form
7	Certain fish:	mercury	Not add these food
8	Tea or coffee:	Unabsorbing iron	Don't give tea or coffee
9	Low-fat foods:	Lack of energy	Full Fat Diet
10	Cow's milk:	kidney	Small quantity of milk, Cook food

How To Introduce Weaning Foods

- Start with one- teaspoons at a time. Allow the kid to swallow and receive the brand-new texture.
- Offer extra one- teaspoons extra of the identical meals each day until the quit of the week whilst the kid could have a small bowl at a time.
- Introduce a brand-new aspect each week and be aware for acceptability, discomfort, or allergies.
- It is exceptional to introduce best one meals object at a time. and keep away from imparting too many meals objects on the identical time.
- Avoid force-feeding or strive a easy plate policy. Make feeding time, a simple, stress-loose practice. best then your infant will appearance in advance for his food.[3]

4 to 6 months: Cereals (single grain)

The child reaches its lowest stage of iron considering start at round nine months. Hence, along with fortified cereals in food serves as a very good supply of iron. Adding a spoonful of unmarried-grain cereal with breast milk on the begin of weaning may be extraordinarily beneficial. Single grain cereals may be a part of a 5-month child eating regimen or maybe a four-month child eating regimen relying at the infant's weaning eating regimen.

4 to 8 months: Pureed food (vegetables, fruits, and meat)

Pureed meals is one of the high-quality methods to begin weaning, mainly while one prefers conventional weaning over child-led weaning. It additionally broadens the flavor palate of the kid and offers him publicity to entire distinctive sorts of nutrients. The properly factor approximately a easy pureed meals is that it is able to be blanketed in a 5-month child meals chart or even now and again in a four-month child meals chart.[5]

6 to 8 months: Baby finger foods with a single ingredient

The subsequent degree after puree is beginning with finger meals. It is likewise a sincerely properly manner of experimenting with self-feeding for toddlers. Boiled veggies and end result reduce into small finger-sized portions which may be mashed the usage of palms may be given to toddlers on this age group.[5]

9 to 12 months: Mashed, ground, or chopped foods

As the child transitions from pureed meals, include finger meals with distinctive textures like yoghurt, banana, cottage cheese, mashed candy potato and scrambled eggs. [5]

Quantity Of Food While Weaning

Apart from the kind of meals, the number of meals for toddlers whilst weaning is any other query that maintains shooting up in each Indian mother's mind. You may also observe this advice for number of weaning meals to be supplied to the toddler; as advised with the aid of using Pediatric Dietetics Department at AIIMS Hospital New Delhi.

Table o. 2 Quantity of weaning food. **[3]**

S.No.	Age in months	Quantity of weaning food
1	5-6 months	Few spoon to 30ml at a time
2	6-7 months	50-75 ml/g at a time
3	7-8 months	75-100ml/g at a time
4	9-12 months	100-150 ml/g at a time

Dos And Don'ts of Weaning

Table no.3 Dos and Don'ts of Weaning [9]

WEANING	
DO	**DON'T**
• wait until baby can sit unsupported in a highchair. • continue breast and formula feeding. • sit with the baby during meals. • offer foods the size and shape of your finger. • offer soft foods. think avocado, ripe peach, bananas, roasted sweet potato, or egg yolk mashed on toast. • offer preloaded spoon of food too. • offer foods with healthy fats and nutrients. offer water in a sippy cup. • end the meal when baby shows signs of being done.	• don't leave baby unattended with food. • don't worry about messes. • avoid rushing through meals. • don't introduce new foods too quickly. • avoid serving foods that are hot, sticky, hard or too slippery. • don't panic if baby gags. • don't worry if baby prefers purees or if you want to serve both. • don't worry if baby takes time to show interest in food.

Conclusion

Weaning from breast feeding way Starting to breastfeed much less and changing breastfeeding with any other supply of nutrition, consisting of toddler method or strong ingredients. It's an essential manner that each one toddler wants to undergo as a way to expand healthy and properly. From the age of 6 months a child desires greater power and nutrients. Infants cannot devour cumbersome complementary meals, in enough quantities, power wealthy.

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A STUDY ON WOMEN PERCEPTION TOWARDS BRANDED JEWELRY IN CHENNAI

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ABSTRACT

Each event of family celebration can't be celebrated without gold Jewelry. In India, gold demand raised every year. Gold price also increase in unpredictable manner. An impulse cause shaped by means of well-informed entrepreneurs allows customers to quickly discuss with their memory and make the purchase decision. It is the second biggest unfamiliar trade work in the country. Each Indian family thinks about gold as an image of abundance, status and flourishing. The shopper scene in India is changing past creative mind. Current purchasers are having an intriguing blast of decisions – new classes, new brands, new shopping alternatives – and have expanding discretionary cash flow to satisfy their desires. Customer perception is an important factor to help sustain competitive advantages. Most of the people like it and they buying branded jewels only. Therefore, the cause of this studies is to go looking and examine the factors, which have an effect on patron notion toward branded jewels a number of the clients. This paper is descriptive in nature, and the primary and secondary date were collected by researcher for the study. After collected the data, researcher used chi-square test and Garret ranking technique for analyse the data. The major of the study is that majority of the customers are satisfied.

Keywords: Aspirational, Handmade, Jewellery, Designs, Business.

Introduction

India is having a fairly dynamic purchaser marketplace for Jewellery, which has grown hastily during the last a long time. This is fuelled via a variety of of factors like the quick increasing financial system, a widening client base and a tradition where valuable jewelry plays an intrinsic position in social events and circle of relatives traditions. Jewellery buying in India are normally consultative techniques, in which girls are the main choice makers, taking the opinion of own family and buddies. Retailers additionally play an important role in supplying reassurance and recommendation. Jewellery is an 'aspirational' product in India and is greater desired than another luxury merchandise. Jewellery is the maximum favored present given by using the dear ones to express their love, affection and gratitude. Jewellery has no longer handiest been taken into consideration for the motive of decoration, but it also acts as a safety in instances of contingency. Gold is likewise valued as an vital savings vehicle in India, and is the second preferred funding in the back of bank deposits.Indian jewellery is unique in its design and workmanship. India and jewellery, jewellery and Indian women - the terms are linked inherently.

Statement of Problem

`Jewellery has been an essential part of the Indian lifestyle and civilization because ancient records. They were in demand and style when you consider that ancient civilization of Harappa and Mohanjadora. It has always performed a pivotal role within the Indian social material. Even today, Jeweler remains the Indian brides' streedhan, the only wealth women take with them when they go to their new home. In India, jewellery is not just a means of adding glitter and attraction to the personality. It is worn to strengthen various religious beliefs and for social security. Earlier both men and women used to wear ample of them but with the passage of time, men didn't really seem keen on wearing them. However, they still use simple jewellery like chains, rings and bracelets. Even men wear simple gold ornaments like rings, bracelets and chains. The average customer now wants designs that are unique and contemporary. A woman buys jewellery today not just for investment and as a status symbol but also to express her individuality. India has well established capabilities in making handmade and machine made jewellery in traditional as well as modern designs. The Indian jewellery retail sector continues to be dominated by the unorganized jewellers. People in Tamil Nadu have a culture

of buying gold from their savings and the yellow metal is seen as an investment here because of its liquidity. Indian jewellery industry plays an important role in Indian economy. But the industry faces certain problems that act as bottlenecks for the industry to compete globally. Being largely unorganized, the jewellery sector mainly uses labour-intensive and indigenous technology that affects their growth prospects. This sector is mainly constituted by small and medium jewellers who face stiff competition from large and organized retailers. Further, banks and financial institutions hesitate to provide financial assistance to these retailers who mainly carry on jewellery retailing as family-owned business. It provides the ability to buy the branded products. However, the future for jewelers market looks bright and promising. This is especially true in the context of customer in women Therefore, this study aims to examine the women perception towards branded jewelry in chennai

Review of Literature

Dr. V. Selvarani and Ms. T. Chitradevi (2020), "A Study on Women Perception Towards Branded Jewelry in Tiruchirappalli District" they concluded that the gold jewellery in India varies from region to region and within regions. The Sector is hugely dominated by fragmented unorganized players. The growth of branded jewellery segment is fuelled by the 'retail revolution'. The Indian jewellery consumer is getting more & more trend conscious. The branded gold jewellery segment occupies a small share of the total jewellery market because of the mindset of the average Indian buyer still considers jewellery as an investment. Women today have realized that they do not have to wait for long periods of time to buy the piece of jewellery which they wanted. It would take long time to choose the design and make an order and wait till the jewellery was ready. Today they can buy the trendy and contemporary designs they want in less time in any outlets. This study aimed at analyzing various perceptional aspects of women which influence in purchasing the branded gold jewellery and thereby help to design market strategies to promote the sale of branded gold jewellery.

Dr. B. Revathy, (2018)), "A Study on Customer Satisfaction towards Jewellery in Marthandam Town", This examination started by investigating basic strategies for show used to introduce contemporary adornments in the exhibition space delineated the viable and hypothetical endeavours that were embraced in an offered to address the connection amongst protest and watcher. This examination coordinated my enquiry towards methods of show that impart the part of the body in contemporary gems and are intended to draw in a group of people. The techniques utilized amid this examination empowered me to draw without anyone else hone as a method for setting up methods for speaking to the individual and social body that are perfect with the display condition. The underlying viable examination, as itemized in concentrated my enquiry on crowd cooperation and real procedures. As a reaction to my logical discoveries, a blend of computerized media and customary specialty strategies were utilized to record and speak to the missing body in the exhibition space. This brought about two useful results that were planned to give a perpetual show of the transient connection between the body and adornments. Perceptions were made of adornments while on the body, utilizing advanced media to catch and present the point by point developments and conduct of the wearer. This approach was created to consolidate sound and visual strategies; these were proposed to speak to the suggestions for the specialty question of group of onlooker's cooperation. Advanced strategies for introduction were utilized as an elective method of association to contact and enabled watchers to encounter the materiality of a question through a mix of tactile techniques. The two results were intended to present or incite an emotive response from the watcher in light of adornments in plain view.

Objectives

➢ To know socio economic background of sample respondents
➢ To measure the frequency of buying gold jewellery

➢ To find out the compare between socio economic factors and perception level of the respondents.

Research Design

The present study is Descriptive in nature. Sample size selected for the study was 90 respondents in Chennai city of Tamil Nadu State. For analyzing the data, percentages, Chi square test and Garrett ranking techniques were applied.

Limitations of the Study

➢ The present study considers only the selected respondents in Chennai city.
➢ The research work is based on the primary data which are collected from the selected respondents. Therefore, the findings are not to be generalised.

Results and Discussions

Table 1: Demographic Variables

VARIABLES		No of Respondents	Percentage
Age	Upto 25	12	13
	25 to 35	28	31
	35 to 45	23	26
	45 to 55	20	22
	Above 55 years	7	8
	Total	**90**	**100**
Marital status	Married	**58**	64
	Unmarried	**32**	36
	Total	**90**	100
Educational Qualification	Upto SSLC	26	29
	HSC	25	28
	Graduation	27	30
	Post-Graduation	12	13
	Total	**90**	100
Occupation	Homemakers	14	16
	Business	19	21
	Private Employees	20	22
	Government employees	21	23
	Professionals	16	18
	Total	**90**	100
Income Per Month	Less than Rs.10,000	12	13
	10000-20000	22	24
	20001-30000	23	26
	30001-40000	19	21
	Above 40000	14	16
	Total	**90**	100

Sources: Primary Data

Table No.1 shows demographics wise distribution of the respondents. It reveals that. Majority of respondents' age group of 26-30 and Graduates were high as compared to other Educational groups. Majority of the respondents were Government employees and 20001-30000respondents were high as compared to other Income per Month.

Table 2: Frequency Of Buying

Frequency of purchase	No of Respondents	Percentage
Monthly	4	4
Once in 3 months	13	14
Once in 6 months	18	20
Once in a year	36	40
Very rarely	19	21
Total	**90**	**100**

Primary Data

The above table shows that consumers buying gold jewellery in which most of the respondents said that they buying Once in a year.

Table-3: OCCASIONS OF BUYING

S.No	Factors	No of Respondents	Percentage
1	Marriage / other ceremonies	14	16
2	Diwali	7	8
3	Christmas	8	9
4	Ramzan	5	6
5	New Year	9	10
6	Aadiperuku	6	7
7	Akshaya Tritiya	13	14
8	After harvest	4	4
9	On receiving bonus	10	11
10	Price decrease	11	12
11	No such occasion	1	1
12	Maturity of savings	2	2
	Total	**90**	**100**

Primary Data

The above table reveals that occasions of buying gold jewellery these consumers buy gold jewellery on occasions like marriage and other ceremonies for the purpose of giving it as a gift.

Table-4: JEWEL COLLECTIONS OF WOMEN

S.No	Statement	No of Respondents	Percentage
1	Necklace	9	10
2	Earrings	18	20
3	Bangles	14	16
4	Chains	11	12
5	Maalai	7	8
6	Rings	15	17
7	Bracelets	10	11
8	Nose pins	6	7
	Total	**90**	**100**

Sources: Primary Data

The above table mentioned that most of the respondents prefer earrings.

Table 6: PERCEPTION LEVEL OF JEWELLERY

Variables	No of Respondents	Percentage
Very Frequently	13	14
Frequently	32	36
Sometimes	26	29
Never	19	21
Total	**90**	**100**

Sources: Computed Data

The above table reveals that perception level of consumer. In which, 32 percent of the respondents were frequently, it is a highest level out of others.

ASSOCIATION BETWEEN SOCIO-ECONOMIC CHARACTERISTICS AND PERCEPTION LEVEL OF THE RESPONDENTS

The non-parametric chi-square test is applied to find the association between perception level of the Respondents and Socio-Economic factors such as sex, education, and Experience.

Table - 7: Age and Opinion of the Perception Level of the Respondents

Age	Very Good	Good	Poor	Very Poor	Total
Upto 25	2	1	5	4	12
25 to 35	5	8	10	5	28
35 to 45	2	11	5	5	23
45 to 55	2	10	4	4	20
Above 55 years	2	2	2	1	7
Total	**13**	**32**	**26**	**19**	**90**

Sources: Computed data

Results of chi-square test are as follows

	Calculated value	Df	Table Value	Result
Chi-Square test	15.58	12	21.03	**Accepted**

Above table indicate that the Table Value is less than calculated value. Therefore, test is accepted.

Table - 8: Marital Status and Perception Level of the Respondents

Sex	Very Good	Good	Poor	Very Poor	Total
Married	8	19	17	14	58
Unmarried	5	13	9	5	32
Total	**13**	**32**	**26**	**19**	**90**

Sources: Computed data

Results of chi-square test are as follows

	Calculated value	Df	Table Value	Result
Chi-Square test	1.12	3	7.81	**Accepted**

Above table indicate that the Table Value is less than calculated value. Therefore, test is accepted.

Table - 9: Education and Perception Level of the Respondents

Age	Very Good	Good	Poor	Very Poor	Total
SSLC	4	8	9	5	26
HSC	4	11	7	3	25
Graduation	3	12	6	6	27
Post-Graduation	2	1	4	5	12
Total	**13**	**32**	**26**	**19**	**90**

Sources: Computed data

Results of chi-square test are as follows

	Calculated value	Df	Table Value	Result
Chi-Square test	19.55	9	16.92	**Rejected**

Above table indicate that the calculated value Table Value is less than table value. Therefore, test is rejected.

Table - 10: Occupation and Perception Level of the Respondents

Occupation	Very Good	Good	Poor	Very Poor	Total
Homemakers	2	3	5	4	14
Business	6	4	5	4	19
Private Employees	2	10	5	3	20
Government employees	2	6	9	4	21
Professionals	1	9	2	4	16
Total	**13**	**32**	**26**	**19**	**90**

Sources: Computed data

Results of chi-square test are as follows

	Calculated value	Df	Table Value	Result
Chi-Square test	19.38	12	21.03	**Accepted**

Above table indicate that the Table Value is less than calculated value. Therefore, test is accepted.

Table - 11: Income and Perception Level of the Respondents

Occupation	Very Good	Good	Poor	Very Poor	Total
Less than Rs.10,000	2	3	3	4	12
10000-20000	6	4	7	5	22
20001-30000	2	10	5	6	23
30001-40000	2	6	9	2	19
Above 40000	1	9	2	2	14
Total	**13**	**32**	**26**	**19**	**90**

Sources: Computed data

Results of chi-square test are as follows

	Calculated value	Df	Table Value	Result
Chi-Square test	21.75	12	21.03	**Rejected**

Above table indicate that the calculated value Table Value is less than table value. Therefore, test is rejected.

Table 12: REASONS FOR PREFERRING MODERN DESIGNER JEWELLERY

Variables	Garrett's Mean Score	Rank
Innovative designs	67.31	I
Suitable for all occasions	66.19	II
Light weight	63.78	III
Graceful to wear	61.25	IV
Suits all attires	60.52	V
Affordable price	58.82	VI
Stylish and sleek	55.35	VII

Sources: Computed Data

The above table reveals that reasons for preferring Innovative designs jewellery with mean score of 67.31 points is the prime reason for consumers preferring designer jewellery.

Findings

- Majority of respondents' age group of 26-30.
- Graduates were high as compared to other Educational groups.
- Majority of the respondents were Government employees.
- 20001-30000, respondents were high as compared to other Income Per Month.
- Majority of the consumers buying gold jewellery once in a year account for 40 per cent.

Suggestions

- Jewellers should try to provide better quality of jewellery to customers at reasonable price.
- Jewellers should concentrate to provide better services to each valued customers.

Conclusion

Nowadays branding is an important tool for every business. Especially, Branded jewellery confirms the quality, purity, durability and several social, environmental standard of the jewellery. From the study undertaken, it is found that, maximum number of consumers, they were frequently buying the branded jewellery and they have a very good opinion about branded jewellery. Branded jewellery is always priced high as most of the consumers hesitate to purchase branded jewellery. When researcher compare with socio economic factors and perception level of the consumer. There some factors like age, marital status and occupation were accepted. But some other factors like education and income level were accepted. By these, researcher understood their perception level of branded jewels.

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ROLE OF NUTRIENTS AND DIET MANAGEMENT IN COVID

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ABSTRACT

Currently Covid-19 pandemic is a leading challenge across the globe. It is mandatory to attain and maintain good nutritional status to fight against virus. Nutritional status of individual is affected by several factors such as age, sex, health status, life style and medications. Nutritional status of individuals has been used as resilience towards destabilization during this COVID-19 pandemic. Optimal nutrition and dietary nutrient intake impact the immune system, therefore the only sustainable way to survive in current context is to strengthen the immune system. There is no evidence found that supplement can cure the immune system except Vit C, which is one of the best way to improve immune system. A proper diet can ensure that the body is in proper state to defeat the virus. However along with the dietary management guidelines the food safety management and good food practices is compulsory. This article explores the importance of nutrition to boost immunity and gives some professional and authentic dietary guidelines about nutrition and food safety to withstand COVID-19.

Keywords: Nutrition, Immunity, Corona pandemic

Introduction

With the COVID-19 pandemic turned into a global threat, it is increasingly important to take care of your body to beat the virus. While we all are taking precautions against it by washing our hands frequently and wearing masks, it may not be enough. It is also important to maintain optimum health and nutrition to beat this virus. Diet is one of the key elements that play a crucial role in having a healthy immune system[1] The food we consume directly impacts our bodily functions. To strengthen our immunity, it is mandatory to eat a balanced diet full of nutritious foods so that our body is better able to evade any outside threat, include the coronavirus.[2] To begin with, we should start understanding the specific role of diet and nutrition in building strong immune health. Keeping in mind the dietary guidelines, we must adhere to good food practices to positively influence how our bodies function.[3]

Nutrition and Immunity

The scientific findings show that nutrition and immunity are interlinked.[4] (Especially, the ongoing COVID-19 pandemic calls for better diet and nutrition status to prevent the risk of infection. Poor nutrition and dietary habits put individuals at greater risk for such viral infections and lifestyle diseases. Alternatively,

such chronic illnesses may put individuals at a higher risk of nutritional disorders.

As shown by the clinical research on COVID-19, older individuals and those with chronic diseases or conditions are at much greater risk of acquiring this deadly virus. Most of these chronic conditions include metabolic disorders, cancers and hypertension which are linked with nutrition, however partly. Therefore, the lack of optimal nutrition may worsen the chances of getting an infection during the COVID-19 pandemic.

Another interesting finding is the role of boredom in nutrition. With COVID-19 declared a pandemic worldwide, a large population is under quarantine to reduce and prevent its spread. With the majority of people working from home, the routine of such individuals has been impacted leading to boredom and undue stress. We have been incessantly worrying or under stress due to news and lack of work-life balance. These factors have severe repercussions on people's lives. With everyone hoping for the pandemic to end while living mostly indoors, it is natural to crave comfort foods that give a boost of serotonin and make us feel good. Boredom is promoting a sedentary lifestyle and leading to a higher intake of foods rich in carbohydrates and fats. All in all, food cravings are common due to behavioral, psychological and emotional factors. We are increasingly consuming mood-boosting foods mainly consisting of

carbohydrates. With everyone mostly in isolation, it is hard to motivate oneself to exercise or stick to a balanced diet plan. The fear amidst the ongoing pandemic is adding up to constant anxiety thereby changing our food habits.

Quarantine-induced stress is taking a toll on the diet and physical health. Resorting to unhealthy food habits and stressing about the pandemic is a vicious cycle that is further impacting immune health. Furthermore, quarantine prompted people across the globe into hoarding packaged and processed foods. Limited access to fresh and seasonal produce contributes to unhealthy dietary patterns. However, it is possible to tweak your diet with just a handful of ingredients available. It is up to us if we want to put any effort into understanding the food we eat and then follow healthy dietary practices based upon that knowledge.

While dietary habits vary globally, nutrition is of utmost importance when it comes to fighting or preventing the COVID-19 pandemic. Optimal nutrient intake is required to keep your body and immune system healthy to resist infection. Nutrition impacts gene expression to eventually shape our immune response. Through proper cell activation and signaling molecules modification, dietary nutrients can help decide the immune response. Our body needs adequate amounts of nutrients such as iron, zinc, vitamin A, B, C and E to maintain as well as strengthen the immune system.

Therefore, a healthy and nutrient-dense diet is particularly important to protect us against the spread of COVID-19 and to eventually flatten the curve.

A healthy and balanced diet emphasizes the intake of fresh fruits, vegetables, legumes, whole grains, nuts, seeds, high-quality proteins, carbohydrates and healthy fats. [5]It is recommended to consume dairy, poultry and seafood in moderation and intake of alcohol, sugar, refined carbohydrates and processed meat should be limited. Eating lean proteins and fewer carbohydrates help in maintaining a healthy weight. It is not an appropriate time to indulge in crash or fad diets. The body needs healthy and adequate calories apart from

essential vitamins and minerals to maintain immune health.
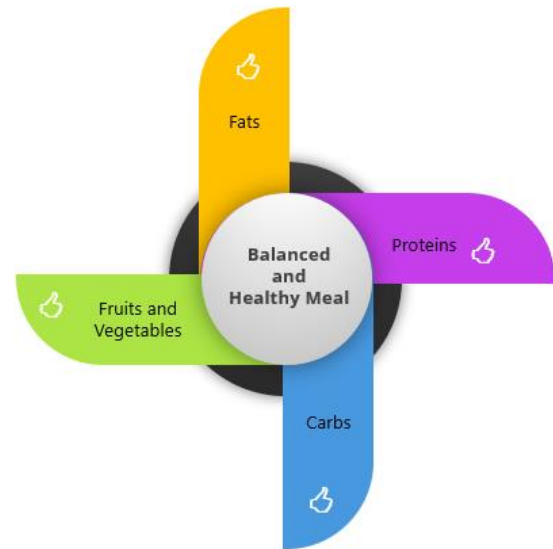
Nutritious and antioxidant-rich foods are also necessary to make antibodies for a better response to infection. Additionally, it is vital to pay attention to physical activity as well. Low physical activity could negatively affect our health. This often leads to a sedentary lifestyle with high calorie intake and binge eating that leads to obesity and other lifestyle diseases. Our normal response to stress and anxiety often translates into overeating unhealthy foods. The consumption of unhealthy or junk food can be drastically reduced by managing stress and thereby managing frequent cravings. By continuing to eat a balanced diet that supports good immune and overall health, we can withstand COVID-19.

The human immune system

Our immune system works round the clock to keep us healthy and defend against a variety of microorganisms that may cause infection. A vast network of interconnected cells works in conjunction to defeat a virus, bacteria, or any disease-causing pathogen and defend the healthy tissues. Some of such responses occur instantly while others take time depending on the infecting agent. [6]

The immune system gets triggered by any foreign pathogen such as coronavirus, also known as an antigen. The B-cells of the immune system are the first cells to recognize the antigen and immediately start producing antibodies. These antibodies attach to the

surface to antigen thereby destroying it. This is how our body acquires immunity against a specific disease. This phenomenon is also known as acquired immunity.

Many viruses and pathogens are resistant. Even in the case of COVID-19, new strains keep emerging, such as the Delta strain. As you age, the general immunity reduces. Also, individuals who have preexisting conditions such as diabetes, hypertension, cardiovascular or respiratory diseases are at a higher risk of getting infected.

Therefore, it is of paramount importance to take key hygiene measures and consume foods that improve immunity.

Role of specific nutrients and foods in maintaining the optimal immune system

A balanced and nutritious diet can supplement immune health. Choose foods that help build resilience in the body against infections. Some examples of such foods include spinach, broccoli, mushrooms, bell peppers and other green leafy vegetables. Eating low carb and high-protein diet is beneficial to keep you in good shape. This will also prevent the occurrence of metabolic disorders which often result in decreased immunity. Regular consumption of foods rich in vitamins, minerals, probiotics, fiber and powerful antioxidants support our immune system and ensure a reliable support system against COVID-19 infection.

Certain vitamins and minerals are laced with powerful antioxidant properties that help prevent oxidative damage in the body and boost natural immunity.

Vitamin D

Vitamin D is produced in the body when it is exposed to sunlight. Reduced sun exposure or staying indoors for a prolonged time can reduce the production of vitamin D in the body. The lower levels of vitamin D have been linked with respiratory illnesses and immune-related disorders. Proper intake of vitamin D can help protect us against coronavirus and reduce the chances of severe infection leading to hospitalization.

The best way to get vitamin D naturally is by exposing your skin to the sun. Around 5 to 10 minutes of sun exposure is enough to produce an adequate amount of vitamin D in the body.

However, one needs to be careful and avoid sun burns or other skin problems.

Benefits
● Vitamin D is crucial for maintaining good bone and teeth health.
● It offers protection against diseases and conditions such as Type 1 diabetes.
● It supports immune health and protects against respiratory infections. It activates the immune response, enhances the function of immune cells such as T cells and macrophages to protect the body against pathogens.
● It supports a healthy nervous system.
● It influences cardiovascular health.

Dosage

The recommended intake of vitamin D for adults up to 70 years is 600 IU or 15 mcg (microgram). Vitamin D stores in the body run low, especially in the winter months. Soaking in the sun for just 5 to 10 minutes around 3 times a week is sufficient to get adequate vitamin D. Alternatively, supplements can also be taken if you don't have access to natural light during extreme winters. Around 1,000–4,000 IU per day of vitamin D supplements is sufficient for most individuals.

Vitamin A

A fat-soluble vitamin, Vitamin A is an intrinsic part of the body's defense system against infections. Both plants and animals are rich sources of vitamin A. Foods rich in vitamin A include pumpkin, carrots, trout, egg yolks, cabbage, red peppers, parsley and pumpkin, to name a few.

Benefits
● It is essential in preserving eyesight and slow age-related deterioration of the eyesight.
● It plays an important role in preventing the development of various cancers.
● Vitamin A is a crucial part of the body's first line of defense - the mucous membranes.
● It is involved in the production of a healthy immune response by regulating the production and function of white blood cells which trap and clear pathogens of the body.
● It reduces the risk of skin-related disorders.

Dosage

The recommended daily allowance of vitamin A is 900 mcg for males and 700 mcg for females. It must be kept in mind not to exceed

the tolerable upper limit of 3000 mcg to prevent toxicity.

Vitamin A supplements can also be taken after consulting with an expert. Caution must be taken against supplements with a high dose of vitamin A.

Vitamin C

Also known as Ascorbic acid, it is a water-soluble vitamin found in many citrus fruits. Our bodies can not produce vitamin C, so people often rely on foods and supplements to meet their needs. Foods rich in vitamin C include oranges, lemons, grapefruit, strawberries, broccoli, potatoes and Brussels sprouts to name a few.

Benefits

● A powerful antioxidant, vitamin C strengthens our immune system and assists the body in fighting inflammation. It also encourages the production of lymphocytes and phagocytes that fight infections.

● It boosts antioxidant levels in the body and helps reduce oxidative stress due to free radicals.

● It helps protect against seasonal colds and flu-like symptoms such as runny eyes and nose.

● Consumption of vitamin C helps lower blood pressure and maintain heart health.

● It is strongly linked to the improvement of memory and prevention of conditions like dementia.

Dosage

The recommended daily allowance for vitamin C is 75 mg for females and 90mg for males with a tolerable upper limit of 2000 mg per day.

B Vitamins

These are the group of 8 water-soluble vitamins that include - B-1 (thiamine), B-2, (riboflavin), B-3 (niacin), B-5 (pantothenic acid), B-6 (pyridoxine), B-7 (biotin), B-9 (folic acid) and B-12 (cobalamin).

Benefits

● B vitamins are the building blocks of the body and support healthy cell growth.

● Vitamin B12 is essential for regulating healthy nervous system function.

● Vitamin B6 helps the immune system to fight pathogens and is needed in protein metabolism. It is also in charge of making new red blood cells and amp up the production of T cells.

● Vitamin B3 is helpful in strengthening lung tissue and protecting it against infections such as COVID-19.

● Vitamin B2 assists the immune system in its fight against viral or bacterial infection.

Dosage

The recommended daily allowance of each B vitamin varies -

● B1 - 1.1 mg (females), 1.2 mg (males)
● B2 - 1.1 mg (females), 1.3 mg (males)
● B3 - 14 mg (females), 16 mg (males)
● B5 - 5mg
● B6 - 1.3 mg
● B7 - 30 mcg
● B9 - 400 mcg
● B12 -2.4 mcg

Zinc

Zinc is a trace mineral that forms the component of various enzymes in the body. Its deficiency can suppress immune function and make one more prone to infectious diseases. Foods rich in zinc include shellfish, legumes, chickpeas, kidney beans, milk, cheese, oats, brown rice, quinoa, peas, mushroom, kale and more.

Benefits

● Zinc is of paramount importance for the immune system to mount an adequate response to a pathogen.

● Intake of zinc can reduce the occurrence of respiratory infections and boost the recovery rate.

● It is required in the body for DNA and protein synthesis.

● Zinc is essential for wound healing.

● It reduces oxidative stress on the cells and promotes immune response in older individuals.

● It can inhibit the spread of COVID-19 by impairing the replication process of SARS coronavirus (SARS-CoV).

Dosage

The recommended daily allowance per day for zinc is 8 mg for females and 11mg for males with a tolerable upper limit of 40 mg per day. If you choose to take supplements, prefer zinc citrate or zinc gluconate which are readily absorbed by the body.

NAC (N-Acetyl Cysteine)

Semi-essential amino acid and a powerful antioxidant, NAC is important for improving immune health and prevent several diseases in the body.

Benefits

● It scavenges free radicals and fights cellular damage that contributes to a longer lifespan.

● It plays a key role in the body's detoxification process to prevent kidney or liver damage.

● NAC is known to relieve symptoms of respiratory infections and helps in clearing mucous pathways. It also reduces inflammation in the lungs and relieves shortness of breath or coughing, especially in bronchitis.

● NAC also boosts glutathione levels in the body which, in turn, improves immune response. According to one study, high levels of NAC in the body may suppress the spread of HIV-1. [5,7,8]

● NAC also prevents the development of cancer cells and blocks their replication.

Dosage

Our body can produce small amounts of NAC so there's no specific RDA for cysteine. Foods that are rich in cysteine include sunflower seeds, eggs, chicken, turkey, legumes and more. You can also take supplements but they usually are not well absorbed by the body.

Covid-19 and nutrition - Recommendations for prevention and immune optimization

It has been established that some micronutrients play a key role at one or more stages of the immune response. Out of all micronutrients, these three offer the strongest support for the immune system -

● Vitamin C
● Vitamin D
● Zinc

Other beneficial nutrients to include in your diet -

● Vitamin A
● Vitamin E
● B vitamins
● Omega 3
● Zinc
● Selenium
● Plant phytonutrients

Some dietary recommendations that can help you prevent COVID-19 infections include -

● Eat plenty of fresh and seasonal fruits and vegetables. They are loaded with essential vitamins and minerals to support immunity. Include fruits such as pear, guava, apple, pineapple, papaya and more in your daily diet with a serving size of 1 to 2 cups. Include about 4 to 5 servings of vegetables such as kale, broccoli, ginger, spinach, lime, coriander and more. Remember not to overcook vegetables or they will lose essential nutrients.

● Consume unprocessed or minimally processed whole grains such as oats, wheat, maize, brown rice, etc.

● Nuts like almonds, walnuts, pistachios are great for healthy snacking.

● Use healthy sources of oils such as olive oil, coconut oil, etc. for cooking. These unsaturated oils support immune health and also help in reducing inflammation in the body.

● Limit the intake of added sugar and salt. When cooking, use less salt and limit the daily intake to less than 5 grams. Avoid foods and beverages high in sugar such as sodas, packaged fruit juices, bakery products, chocolates, sweet snacks, sweetened yoghurt, etc.

● Eat a lot of protein-rich foods. Limit your intake of animal-based proteins such as poultry and meat. Limit it to 2 to 3 times a week and instead look for plant-based alternatives such as soy, legumes, lentils and more. Prefer lean meat and organic or free-range poultry for consumption.

● Read the food labels carefully to learn more about the nutritional value of the food that you are buying.

● Avoid saturated fats and include healthy fats in your diet. Some examples include fish, nuts, corn oil, avocado and more.

● Limit the mindless snacking. Instead, indulge in eating healthy snacks such as fresh fruits, vegetables, nuts and seeds.

● Make sure that food is prepared fresh and served fresh as well.

● Hydrate thoroughly to make sure that the body is getting toxins out regularly. You can also increase the intake of hydrating foods and beverages such as fresh coconut water, lemon water, fresh fruit and vegetable juices. Eating at least 8 to 10 glasses of water regulate body

temperature, ensure good digestion, and proper removal of waste from the body. During the winter months, you can drink warm water to avoid seasonal health issues.

● Avoid processed and packages foods laced with additives as they can be detrimental to health. They often come loaded with preservatives, sugars and salt that are high in calories but low in nutrients.

● Avoid or reduce the consumption of alcohol as it can weaken the immune system.

● Apart from the dietary recommendations, it is also important to practice good food hygiene. Cook food thoroughly with clean hands and store it at optimum temperature - below 5 °C or above 60 °C.

● Make sure to indulge in physical activity such as walking to boost your overall health and maintain your fitness. You can also practice yoga or Tai chi.

● Take adequate sleep to ensure proper immune function as sleep is essential for the body's repair work.

● Drink herbal teas or concoctions made with herbs and spices that can further support strong immune health.

Health benefits of alkaline foods

Alkaline foods help in altering the body's pH levels to restore and boost health. The proponents of an alkaline diet believe that alkaline foods leave alkaline residue as metabolic waste after digestion which does not the acidity of our body. On the contrary, it makes our body more alkaline or healthy and our body cells work more efficiently.

Healthy cells are better at absorbing nutrients and fighting foreign invaders or pathogens.

Therefore, consuming alkaline foods will boost immune health because of their alkalizing properties.

If the blood is overly acidic, it drains the body of its energy and makes it susceptible to various illnesses and conditions. Consumption of alkaline foods over time will boost energy levels of the body and ensure proper cell functioning.

This diet encourages eating fresh fruits, vegetables and plant-based whole foods while restricting processed and packaged foods. Use of spices and herbs is also encouraged. Some examples include ginger, garlic, cinnamon and pepper.

It is recommended to eliminate sodas, sugars, alcohol and caffeine from the diet. Avoid red meat, fish, canned and packaged meats. Avoid microwave foods as the microwave is known to change the chemical structure of cooked food. Additionally, you should ensure proper hydration by drinking 8 to 10 glasses of water.

01 Highly Alkaline
Cucumber, Kale, Kelp, Spinach, Parsley, Broccoli, Sprouts, Green Drinks

02 Moderately Alkaline
Avocado, Peppers, Mustard and Collard Greens, Cabbage, Okra, Celery, Onion, Radish, Ginger, Beets, Lettuce

03 Low Alkaline
Artichokes, Asparagus, Brussels Sprouts, Cauliflower, Carrot, Chives, Zucchini, Red Potatoes, Peas, Olive oil, Coconut oil

Examples of Alkaline Food

Conclusion

The health of an individual is a direct reflection of his diet and food habits. It is imperative to maintain optimum health when dealing with a deadly infectious disease like COVID-19. So far, we have observed this as a specific feature of this pandemic that prevention is definitely better than cure. Therefore, maintaining good physical and mental health along with other precautionary measures are essential for our battle against this pandemic. Eating a well-balanced and nutrient-rich diet is of paramount importance to support a strong and healthy immune system regardless of where you live.

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TRADITIONAL ARABIC GRAMMAR AND SCIENTIFIC STUDIES OF EUROPEAN LINGUISTS

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ABSTRACT

This article is devoted to a chronological analysis of studies of issues of Arabic philology of a traditionally Arab and European direction. In the process of analysis, the scientific activity of scientists in the field of Arabic grammar, literature, the history of Arabic linguistics and dialectology is noted.

Studies on the Arabic language are currently being conducted in Cairo, Damascus, Beirut, Baghdad, Algeria and Tunisia, where most of the studies in these linguistic centers are based on the traditions of Arabic schools. Scientists from the universities of Leiden, Paris, Oxford, Cambridge, Halle, Prague and Rome are more committed to studying Arabic grammar, adhering to European linguistic traditions. This tradition is also observed in the activities of scientists working on the Arab grammar system in the institutes of Russia, Azerbaijan, Armenia, Uzbekistan and Tajikistan.

Keywords: linguistics, traditional Arabic grammar, manuscript, language norms, teachings of Arabic studies, Arabic literary language and dialects, syntax, morphology, phonetics.

Introduction

Currently, research in Arabic studies is conducted at universities such as Cairo, Damascus, Beirut, Baghdad, Algeria, Tunisia. Most of the research in these schools of linguistics is based on the traditions of Arabic linguistics.

Scholars from the universities of Leiden, Paris, Oxford, Cambridge, Galle, Prague, and Rome are more committed to the traditions of European linguistics. We observe this tradition in the research of institutes in Russia, Azerbaijan, Armenia, Uzbekistan and Tajikistan.

In the study of Arabic linguistics, it is observed that European researchers conduct research based on the traditions of Arabic linguistics, and in Arabic schools using theories specific to European languages.

To describe these two traditions, we have studied the research of Russian scholars who have modeled on Arabic, European, and European studies and have made significant contributions to the development of Arabic studies.

The study of Arabic manuscripts played an important role in the formation and development of Arabic philology. The department of Oriental Studies, which studies Arabic literary language and manuscript monuments in this language, was first formed in Europe. Later, this tradition entered Russia. Russian Arab scholars have made a number of achievements in this area. In particular, the study of manuscripts kept in library funds and personal funds became the task of scientific research at that time. Along with Europe and Russia, the study of Arabic manuscripts began in Uzbekistan, especially in Bukhara, Samarkand and Khorezm. But in these areas the study of manuscripts was seen more as a religious field. It should be noted that, in contrast to Russia and Europe, large-scale theoretical research on the Arabic language was conducted in Uzbekistan until the XIV century. This indicates the early development of Arabic studies in Uzbekistan. The reason for the subsequent decline of this sector in Uzbekistan was the end of the Arab influence after the Mongol invasion, and during the reign of Amir Temur, much attention was paid to the development of the old Uzbek language. During this period, the neglected Arabic language was studied as a direction of religious fields. The study of Arabic as one of the Sami languages in Europe from the point of view of special linguistics began in the 16th century. The Arabic grammar of Pedro de Alcal (1505) and then Guillemma Postellus (1538) was born first. In the XVII-XIX centuries T. Erpenius, I. Representatives of several Dutch schools of Arabic studies, such as Ludolf, laid the foundations for the grammatical theory and

lexicology of the Arabic language. In these theories, the traditions of Arabic linguistics were reflected.

Material and Methods

In the early nineteenth century, great strides were made in the linguistic direction of Arabic studies, i.e., A.D. I. Sylvester de Sasi's grammar, which reflected most theories of the Arabic linguistic tradition, was compiled.

In the nineteenth century, when the question of language norms was relevant, G. Evald (1831-33), K. P. Kaspari (1848), E.G. Palmer (1885), U. Wright (1896-98), G. Feysher, T. Nyoldeke's generalization research has emerged. Research has also been conducted on specific sections of grammar. From the 19th century onwards, the problem of morphology began to be studied from the point of view of comparative semitology. K. Brockalman's "Fundamentals of Comparative Grammar of the Sami Languages" (1-2 vols. 1908-37), "Arabic Grammar" (14 editions 1960) were published. G. Rekendof's (1898 and 1921) syntactic works on syntax emerged. Phonetics (1925) U. X. Gerdner's monograph on the phonetics of literary language and the phonetic features of the Egyptian spoken language, 1941 J. Cantino wrote a fundamental work on phonetics. Major works on the subject of modern Arabic dialects appeared in the second half of the XIX century. By the twentieth century, much attention had been paid to the study of dialects, and during this period the study of the traditions of Arabic linguistics continued.

Research on the history of Arabic linguistics was conducted in the mid-twentieth century. As an example, Y. One can mention Fukka's "Arabia".

J. from the representatives of the field of general linguistics. Vandries, E. Kurilovich and semitology researchers L. Gray, P. Dorm, M. Cohen, M. The Godfrua-Demonbins devoted their scientific work to the development of the theory of the Arabic language.

In Russia, Arabic studies as an independent science was formed in the early nineteenth century. The first research in this field was conducted in 1872 by A. V. Boldirev's "Short Arabic Grammar in Tables" was published. In 1867, M. T. Navrotsky's "Experiment on the Grammar of the Arabic Language" is a description of the first Arabic literary language system in Russia. M., who gave impetus to the development of the Moscow School of Arabic Studies. O. Atay's Grammar (1884) and A. F. Hashab's "Grammar of the Arabic Language" (1910), V.F. Girgas's Essay on the Grammatical System of the Arabs (1873) is a study of the traditions of Arabic linguistics. V. F. Girgas was the first scholar to study the concept of Arabic linguistics, its theory and methodological foundations in Russian Arabic studies.

During this period, the teachings of Arabic were propagated in cities such as St. Petersburg, Moscow, Kazan, Kiev, Kharkov, and Baku. In the form of practice in these schools A. Burakov, M. Skibenevskiy, N. A. Mednikov's textbooks, A. V. Boldirev, I.F. Gotwald, V.F. Girgas, V. R. Rozen, F. I. Kelz, A. E.. Krestsky's Chrestomathy and Dictionaries, P.K. Juze's "Russian-Arabic complete birth" ("Full Russian-Arabic Dictionary", 1903) was used.

The main object of study of Russian Arabic studies was the Arabic literary language, and gradually Arabic dialects also began to be studied and introduced into the educational process. As an example, M. A. Tantavi's treatise on the Arabic spoken language (Traktat ob arabskom razgovornom yazyke, 1848), G. A. We can cite Vallin's monograph "Sounds and meanings of the Arabic language" ("On the sounds of the Arabic language and their recognition", 1855). In this monograph, sounds were first described scientifically not only in literary but also in their use in dialects. A. on dialects. E.. Krimskiy, I.Yu. The Krachkovskys also conducted research. I.Yu. Krachkovsky was the first linguist to apply dialectology to the educational process (1915-16). In the 1930s, when dialectology was developing, previously unknown dialects of Central Asian, Bukhara and Kashkadarya Arabs were discovered. Egyptian, Iraqi, Tunisian, and Western, Moroccan, and Algerian dialects were also studied in the mid-20th century.

In Russia, N. V. Yushmanov laid the foundation for the study of the analysis of the Arabic literary language using modern methods in linguistics. His Grammar of the Arabic Literary Language (1928) is a clear example of

this. He analyzed the issues of phonology, morphology, syntax separately, but using the traditions of Arabic linguistics, and formed the linguistic basis of education.

In the field of phonology, the representation of elongated vowels in the combination of two organized two-phoneme sounds has been studied. E.. N. According to Trubetsky's concept, the unit of phoneme with such signs of harmony is the mora.

Russian scientists have done a lot of research on morphology. They tried to explain and describe word formation on the basis of affixation, not internal inflection. It was pointed out that the reason they were not associated with the phenomenon of internal inflection was that the word unit was the core and that the core consisted of consonants. However, the concept of dividing the Arabic word into syllables was put forward. In this approach, the "interdependence of the consonant and the vowel that follows" is presented as a syllable-sound model of Sami languages. Opinions were expressed against the possibility of applying such a model to the Sami languages, as the fact that the word is based on such a model does not correspond to its morphological structure. The phenomenon of internal inflection, based on Arabic traditions, was also put forward, in which the letter-speech segment, which is combined to form a word, serves as a consonant and forms a moran consisting of a short vowel. Such a model does not promote division into sounds and morphs. The core is taken as a unit, the core is formed by a morpheme content and an internal inflection phenomenon. Affixes that do not affect the core are involved in word formation. It was denied that a core consisting only of consonants had a lexical meaning, and that a vowel had only a grammatical meaning.

The grammatical category of precision, inclination, and negation phenomena were studied in relation to syntax. In 1941, D.V. Semyonov described the Arabic literary language syntactically and structurally. G. M. Gabuchan's monograph "Theory of Articles and Problems of Arabic Syntax" (1972) ("Article Theory and Problems of Arabic Syntax") analyzed the main issues of Arabic language syntax. V. X. Auxiliary verbs are described in detail in Khrakovsky's Essays on Community and Arabic Syntax (1973). The play deals with theoretical issues related to the semantic and syntactic aspects of the sentence. Problems related to the syntax of the text of written monuments A. G. Belova's "Syntax of written texts of the Arabic language" (1985) ("Syntax of written texts in Arabic").

The traditions of Arabic linguistics play an important role in Russian Arabic studies. V.A. Zvyagintsev, Yu.V. Rojdenstvenskiy, V.G. Axvlediani grammar, V.M. Belgin, A.A. Sanches and D.V. Frolov's research is an example of this. Terminology, phraseology Yu.P. Gubanov, I.S. Danilov, N.V. Kiladze, V.M. Mamedaliev, V.D. Ushakov, G. An example is the research of Sh. Sharbatov. H.K. on Lexicology and Lexicography. Baranov, V. M. Belkin, V.M. Barisov, G.Sh. Sharbatov's scientific work deserves recognition. B., which describes in detail the norms of Arabic grammar studied on the basis of the historical-comparative method. M. Grand's work "Course in Arabic grammar in comparative and historical development" (1963) is particularly noteworthy.

From the 19th century, Russian branches of Arabic studies were opened in Tashkent and Baku. In these branches, the tradition of Russian Arabic studies of that time, such as the study of manuscripts, cataloging, was carried out. During the former Soviet era, more manuscripts were studied and cataloged in the field of Arabic studies. After independence, the scientific heritage of these regions began to be studied in terms of content.

From the 19th century onwards, at a time when a number of other branches of Arabic philology, such as rhetoric and modern literature, were developing, the study of manuscripts still retained its status.

The formation of Uzbek and Russian Arabic studies is mainly connected with the collection and study of Arabic manuscripts.

Academician V.R., who focused on the study of manuscripts. Rozen (1849-1908) V.V. Bartold, A.E. Schmidt, I.Yu. The Krachkovskys continued their research. In the 20-30s of the XX century, manuscript collection and storage centers were established in Tashkent, Samarkand, Bukhara, Baku, Tbilisi, Makhachkala, Dushanbe.

Details were given when it came to the above medieval research on the traditions of Arabic linguistics.

Result and Discussion

Even in modern Arab countries, the study of literary language is based more on the traditions of Arabic linguistics. In the XVI-XVIII centuries on the basis of pamphlets on ancient grammar textbooks on grammar and stylistics were compiled and a lot of work on lexicography was carried out. Feruzabadi's dictionary "Qomus" of the XIV-XV centuries dates back to the XVIII century. Farhadi reworked. During this period, Muhammad al-Zabidi compiled a 10-volume annotated dictionary, Toju-l-arus, which was widely used in European Arabic studies as a source of Arabic lexicography. The nineteenth century was a period of cultural upsurge for the Arab people, during which Arabic literature flourished in the social and economic spheres. These factors, in turn, contributed to the further development of Arabic studies in these countries and were reflected in the field of education. Nassif Yazij, Ahmad Foris's commentaries on textbooks, dictionaries, and medieval grammar treatises are proof of this. In the second half of the 19th century, new dictionaries were published, which also expressed post-classical Arabic lexicon. Such a lexicon can be found in Peter Bostani's dictionary Muhitu-l-environment (1867-70). In the twentieth century, research on lexicography continued. It should be noted that in this century, dictionaries were created on the basis of non-Arabic principles used in European lexicography. These dictionaries used the European system of alphabetical order, not the order of words based on the Arabic tradition according to the core system.

In the second half of the twentieth century, the range of issues in Arabic linguistics expanded, and new research methods emerged. Scholars such as Ibrahim Samarrai, Abdurrahman Ayub, Ahmad Mukhtar Amar, Kamal Muhammad Bishr, Hasan Zaz began to study the history of language and its comparative-historical. Scholars such as Ibrahim Anis, Muhammad Mubarak, Subhi Salih, Ibrahim Samarrai, Murad Kamil, Mahdi Mahzumi took part in the analysis in the field of general linguistics, and the study of Arabic dialects was started. During this period, one of the main problems was the detailed development of perfect and unique terminology and views on assimilation.

Academic and educational institutions of Egypt, Syria, Lebanon, Jordan, Kuwait, Tunisia, Morocco, and Algeria have played an important role in the study of current problems of Arabic studies.

In modern research, the study of Arabic syntax follows two major principles based on Arabic and European traditions. These two principles are absolutely different from each other. But this does not mean that the views peculiar to the first school and the achievements they have made cannot be applied in enriching the theories of the representatives of the second school. On the contrary, the application of such experiments is effective, revealing new facets of the Arabic language system. The exchange of ideas also intensified, while retaining the originality of the theoretical system of Arabic grammar. Of course, this practice requires great care and attention. The study of syntax based on European traditions forms certain rules, concepts and develops new views in the theory of Arabic grammar. This situation requires a perfect knowledge of the grammar written in the Arabic tradition, not to go beyond the original theoretical system of the Arabic language. Otherwise, the generation of new ideas will create obstacles in knowing the true nature of the Arabic language.

It is known that the syntax in Arabic was given by European researchers under the term nahv, morphology consumption. In our opinion, the term syntax does not fully reflect the field of grammar, and the term morphology does not fully reflect the science of consumption.

If we look at the works where the topics of grammar and expenditure are given together, they are given first nahv, then nahv and expenditure issues, then rules of expenditure. It can be seen that some grammatical issues are covered in the general field of grammar and spending, and they apply to both aspects. Therefore, some of the categories studied in morphology cannot be found in consumption.

Conclusion

The phonetics section is also studied after the description of grammar topics, in which the most basic phenomena related to lexicon, morphology, syntax are studied. It also retains a sequence of phonetic issues related to syntax, morphology, and auxiliary words.

The main reason for studying spending topics in the syntax section of Arabic grammar occurs only in spending syntax. Because if there is no effect on the word due to any factor, the expenditure-specific function does not take place. The sum of the words under the influence of the factor is syntax. According to European tradition, the basic unit of syntax is a sentence, and it should be noted that this term does not appear in the first works of Arabic grammar, and there is no need for it. If the speaker fully expresses the intended point in his speech, he meant the same sentence. The peculiarity of the Arabic syntactic system is that it has such factors and auxiliary words that it is possible to continue the speech continuously at the discretion of the speaker, without sentences.

Sibavayhi applied the term speech (kalam) to a fully expressed syntactic phenomenon of thought. According to Ferstex, the term sentence meaning "speech" may have been introduced into linguistic terminology by al-Mubarrad. Zamakhshari argues that both the sentence and the word term can be used for this phenomenon. Ibn Hisham acknowledges that the sentence represents this general concept, while the word can convey complete information.

Modern annotated dictionaries describe it as "a sentence - a word that gives any complete meaning." But the sentence does not explicitly express the term word. Because a sentence is a predicative compound and a word is a speech consisting of several predicative combinations. For example, in Uzbek, a unit of speech such as "If you hit me, I will be upset" is a word consisting of two sentences. In the Uzbek language, such sentences are one of the following compound sentences. In Arabic, such sentences are a word that fully expresses an idea.

Thus, if the term of a sentence used in Arabic corresponds to a simple sentence in the grammar of European and Uzbek languages, the term kalam is probably applied to the following conjunctions. We can call a word in Arabic, i.e. a model of speech structure, synthetic. In European research, the word is studied mainly as an analytical model. According to N. Hoski, the Arabs regard the matter of speech as an event formed by the speaker, and not as an object that has already been formed and then analyzed.

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PROFESSIONAL COMPETENCIES OF TEACHERS IN ENGAGING THE STUDENTS OUTSIDE THE CLASS: A STUDY IN AP GOVERNMENT RESIDENTIAL SCHOOLS

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ABSTRACT

Engaging the students in Residential Schools is a challenging task for the teachers as compared to the day schools as they play the role of parents. Further, engaging the students outside the class through co-curricular and extracurricular will make the students more focused and improves the learning. However, many of the teachers are not thought of improving this professional competence in the system of school education. In the present research, a study has been done on the perception of professional competencies of teachers in engaging outside the class of Andhra Pradesh (AP) Tribal Welfare Residential Schools, North coastal Andhra Pradesh.

Keywords: Professional competencies, engaging the students, school education, tribal welfare residential schools, co-curricular and extracurricular activities.

Introduction

National Education Policy, 2020 has been affirmed that Education is key for achieving full human potential, and thereby promoting National development. However, providing quality education plays a major role in India's continued growth, scientific advancement, national integration, and cultural preservation. The Government of India has taken a landmark initiative called the Digital India program aimed at transforming India into a knowledge-based economy and a digitally empowered society. The schools & higher education institutions in India should equip to fulfill the core objectives of the Digital India program such as ensuring digital access, digital inclusion, digital empowerment, and bridging the digital divide (Ministry of Electronics & IT, 2019). The role of the information and communication technologies (ICT) education system is important.

School education plays a significant role in achieving the strategic goals of our country. Primary and Secondary educations are important sections in school education as well as in the educational ladder. Primary education is a foundation for getting quality students for the secondary level. Further, quality school education will provide good input to higher education. One will learn the basics of writing, listening, and reading as well as computing and communicating in school education. It is an accepted fact that the quality of school education is majorly influenced by their teachers. Many researchers worked on the professional competencies of teachers in the area of engaging the students with curricular and co-curricular areas. Some of them also worked in studies related to residential schools. However, there are limited studies have been attempted in the area of professional competencies in engaging the residential schools managed by the government through co-curricular and extracurricular activities.

More recently, Zaragoza, M. C et.al (2021) worked on the teacher of the 21st century: professional competencies in Catalonia today. Jabbarova, A. (2020) has undertaken the formation of professional competencies in the course of preparing and conducting business games in English classes. Desmita, Y et.al (2021) worked on pedagogic and professional competencies of Social Science Subject Teachers concerning Motivation and Learning Achievement. Zulfahmi, H.B et.al (2020) presented their work on Students' Pedagogic and Professional Competencies in the Teaching Practice Program. Wong, L. H., & Wang, T. H. (2020) worked on Professional Competencies for Science Teachers. Ramsaroop, S., & Petersen, N. (2020) worked on building Professional Competencies through a Service Learning in Primary School Teacher Education and Blömeke, S., & Kaiser, G. (2017) studied the development of teachers' professional competencies through the personally, situationally and socially determined. Kaiser, G et.al (2017) worked on professional competencies of (prospective) mathematics teachers and their cognitive versus situated approaches. Hoth, J., Kaiser, G.

et.al (2018) conducted a study to assess teachers' professional competencies using classroom videos.

Wilk, P. et.al (2017) worked on residential schools and the effects on Indigenous health and well-being in Canada. Devara, R., & Deshmukh, D. (2017) studied the Impact of nutritious meals on the nutritional status of the tribal students and performed a comparison between centralized kitchens (Annapurna) and regular kitchens in government tribal residential schools from two Districts of Maharashtra, India. Sinha, M., et.al (2020) worked on childhood adversities and self-esteem in girls of residential schools in Kolkata. Jain, S. (2020) researched the vocational Interest of Tribal Adolescents of Eklavya Model Residential Schools of Madhya Pradesh.

Rathore, K., Chaudhry et.al (2018) conducted a study on the relationship between Co-Curricular Activities and Exam Performance and Mediating Role of Attendance. Jepketer, A. N. N. A. H. (2017) worked on the influence of teaching strategies on students' performance in academic achievement and co-curricular activities in public secondary schools in Nandi County, Kenya. Batool, T., & Raiz, J. (2019) studied the variations in parental participation in curricular and Co-curricular activities of university students. Bekomson, A. N et.al (2020) worked on interest in Extra-Curricular Activities and Self Efficacy of Senior Secondary School Students in Cross River State, Nigeria. De Vera, M. R. G. T., & Queroda, P. G. (2020) studied the effects of Extra Curricular and Co-curricular Activities on the Academic Performance of Intermediate Pupils. Siddiky, M. R. (2019) worked on developing co-curricular activities and extra-curricular activities for the all-around development of undergraduate students. Bølling, M.et.al (2018) worked on the association between education outside the classroom and students' school motivation.

In this paper, the researcher has undertaken a study to know the perceptions of teachers towards Professional Competence in Residential Schools of North Coastal Districts of Andhra Pradesh especially in the area of engaging the students outside the classroom.

Objectives of the study

The aim of the present study is to explore professional competencies of teachers in Government managed residential schools in North coastal Andhra Pradesh in the area of Engaging outside the Class. More specifically

• To collect the opinion of the sample respondents on professional competencies of teachers of residential schools in north coastal Andhra Pradesh.

• To study the specific professional competency significantly resulting in co-curricular and extra-curricular activities in government-managed residential schools of north coastal Andhra Pradesh.

Methodology

In the present work, to examine the impact of demographic variables on the professional competencies of teachers especially in the area of engaging outside the classroom (using co-curricular and extra-curricular activities) of government-managed residential schools in North coastal Andhra Pradesh, primary data has been thoroughly evaluated to determine if there is any variation in the teachers' (respondent's) opinion on it. Null hypothesis are prepared for all the objectives and statistically analyzed using SPSS package.

Variables of the study

1.	Gender	:	Male / Female
2	Age (in Years)	:	Below 35 /35 to 45 / Above 45
3	The locality of the School	:	Rural/Urban/Tribal
4	Type of School Management	:	APSW / APBCW/ APTW School
5	General Qualifications	:	B.A., / B.SC.,/ M.A., / M.Sc.,. /Others.
6	Professional Qualifications	:	B.Ed. / M.Ed.
7	Teaching Experience (years)	:	Below 10 / 10 to 20 / Above 20
	Teaching Subject	:	Mathematics/Science/Social/Language

Sample

The researcher adopted a simple random sampling technique in selecting the schools. The researcher selected a total of 26 schools in Srikakulam; Vizianagaram and Visakhapatnam districts were selected covering rural, urban, and tribal management.

Tool of the study

A tool is prepared by selecting nine components. It is into 9 different areas such as – 1) Supporting for Learning, 2) Maintaining an Effective Learning Environment, 30 Organizing Subject Matter for Student Learning, 4) Planning for Teaching, 5) Assessment, 6) Professionalism, 7) Co-curricular & Extra Curricular Activities, 8) Teaching Learning Material and 9) Parent/Community Co-ordination. However, in the present work, the questioner is customized to meet the research objectives based on the (i) Professional competencies by NCTE (1998) document and Professional competencies suggested by Bürgener and his team (2018).

The questionnaire is prepared with 130 questions and they are based on Likert five-point scale in which responders specify their level of agreement to a statement typically in five points: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree

Analysis and Interpretation

Analysis of respondents' opinions based on Mean, SD, and 't'/'F'- values on the perceptions of teachers on socio-economic variables concerning Co-Curricular & Extracurricular Activities are shown in Table.1. It shows the mean perceptual scores of teachers concerning Co-Curricular & Extracurricular Activities. The mean perceptual score of male category respondents is 51.51; whereas it is for the female category respondents is 52.80. The derived t – value is 2.65 and the p-value is 0.00 which is statistically significant at 0.01 levels. This shows that male and female category respondents differed significantly in their perceptions and female category respondents expressed high perceptions towards Co-Curricular & Extracurricular Activities than that of male category teachers.

Table 1. Mean, SD, and 't'/'F'- values on the perceptions of teachers based on their socio-economic variables concerning Co-Curricular & Extracurricular Activities.

Variable	Category	N	Mean	SD	t' / 'F'-Value	p-value
Gender	Male	154	51.51	3.52	2.65**	0.00
	Female	80	52.80	3.56		
Age	Below 35	52	53.14	3.78	4.08*	0.02
	35 to 45	83	51.88	3.61		
	Above 45	99	51.40	3.33		
Locality	Rural	120	52.38	3.53	3.62*	0.03
	Urban	36	51.06	3.46		
	Tribal	78	52.44	3.75		
Management	AP Social Welfare	133	51.59	3.47	1.98 NS	0.14
	AP BC Welfare	39	52.00	4.57		
	AP Tribal Welfare	62	52.57	3.59		
General Qualification	B.A.,	25	51.13	3.60	0.92 NS	0.43
	B.Sc.,	50	52.04	3.09		
	M.A.,	79	52.38	3.70		
	M.Sc.,	80	51.73	3.73		

Professional Qualification	B.Ed.,	221	51.99	3.55	0.77 NS	0.44
	M.Ed.,	13	51.00	4.44		
Teaching Experience	Below 10	78	52.69	3.91	2.84*	0.05
	10 to 20	120	51.70	3.50		
	Above 20	36	51.17	2.78		
Teaching Subject	Mathematics	60	52.00	3.41	0.71 NS	0.55
	Science	60	51.85	3.88		
	Social Studies	46	52.58	3.40		
	Language	68	51.59	3.58		

The mean perceptual scores of teachers for the below 35 years age group is 53.14, whereas it is for the 35 to 45 years age group is 51.88 and it is for above 45 years age group is 51.40. The 'F'-value is 4.08 and the p-value is 0.02, which is statistically significant at 0.05 level. This shows that age group category respondents differed significantly and below 35 years age group respondents expressed high perceptions towards Co-Curricular & Extracurricular Activities than that of 35 to 45 and above 45 years age group respondents.

The mean perceptual scores of teachers belong to a rural area is 52.38 whereas it is for the urban and tribal is 51.06 and 52.44 respectively. The 'F'-value is 3.62 and the p-value is 0.03 which is statistically significant at 0.05 levels. This shows that there is a significant difference among the perceptions of teachers based on their locality and tribal area category teachers expressed high perceptions towards Co-Curricular & Extracurricular Activities than that of rural and urban area category teachers.

The mean perceptual scores of teachers working in AP Social Welfare schools are 51.59 whereas it is for the AP BC Welfare Schools is 52.00 and it is for the AP Tribal Welfare Schools is 52.57 respectively. The 'F'-value is 1.98 and the p-value is 0.14 which is statistically not significant at any level. This shows that there is no significant difference among the perceptions of teachers based on their school management and they expressed similar opinions towards co-curricular & extracurricular activities.

The mean perceptual score of B.A., qualified category respondents is 51.13, it is for B.Sc., qualified category respondents is 52.04,

it is for M.A., qualified category teachers is 52.38, whereas it is for M.Sc., qualified category respondents is 51.73. The derived F –value is 0.92 and the p-value is 0.43, which is statistically not significant at any level. This shows that all the categories of teachers basing on their educational qualifications did not differ significantly and they expressed similar opinions towards co-curricular & extracurricular activities.

The mean perceptual score of B.Ed., qualified category respondents were 51.99 whereas it is for M.Ed., qualified category teachers are 51.00. The derived t – value is 0.77 and the p-value is 0.44, which is statistically not significant at any level. This shows that all the categories of teachers basing on their professional qualifications did not differ significantly and they expressed similar opinions towards Co-Curricular & Extracurricular Activities.

The mean perceptual score of teachers for below 10 years' experience category is 52.69 whereas it is for the 10 to 20 years teaching experience category teachers is 51.70 and it is for above 20 years teaching experience category teachers is 51.17. The derived F –value is 2.84 and the p-value is 0.05 which is significant at 0.05 level. This shows that all the teacher category respondents based on their teaching experience differed significantly in their perceptions and below 10 years teaching experienced category teachers expressed high perceptions towards Co-Curricular & Extracurricular Activities than that of 10 to 20 and above 20 years teaching experienced category teachers.

The mean perceptual score of teachers for Mathematics teaching subject is 52.00 whereas

it is for the Science subject teaching teachers is 51.85 and it is for Social Studies teaching subject teachers is 52.58 and it is for Language teaching subject teachers is 51.59. The derived F – value is 0.71 and the p-value is 0.55 which is not significant. This shows that all the teacher category respondents based on their teaching subject did not differ significantly in their perceptions and they expressed similar opinions towards co-curricular & extracurricular activities.
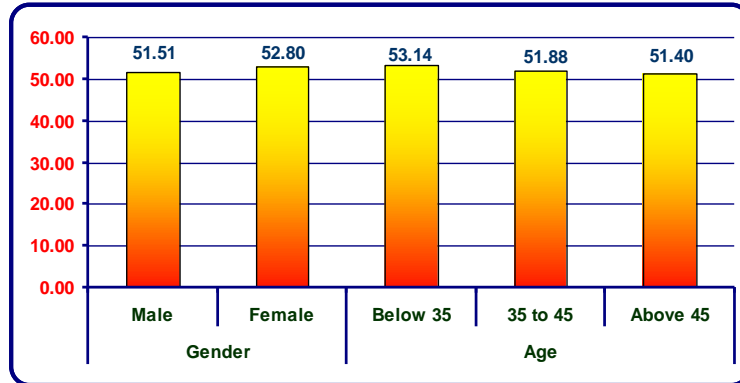
Graph-1: Mean comparison between the perceptions of teachers based on their Gender and Age concerning Co-Curricular & Extracurricular Activities.
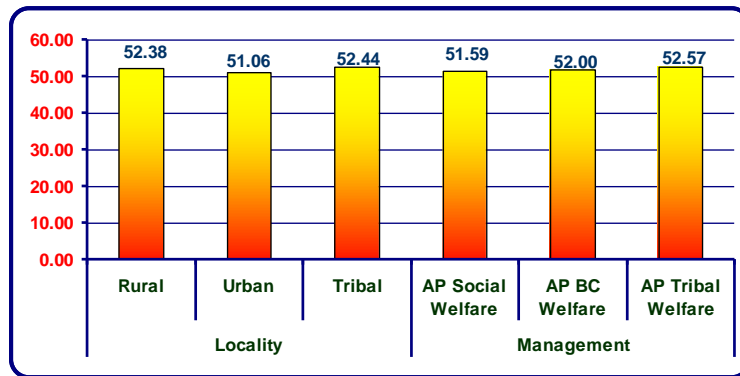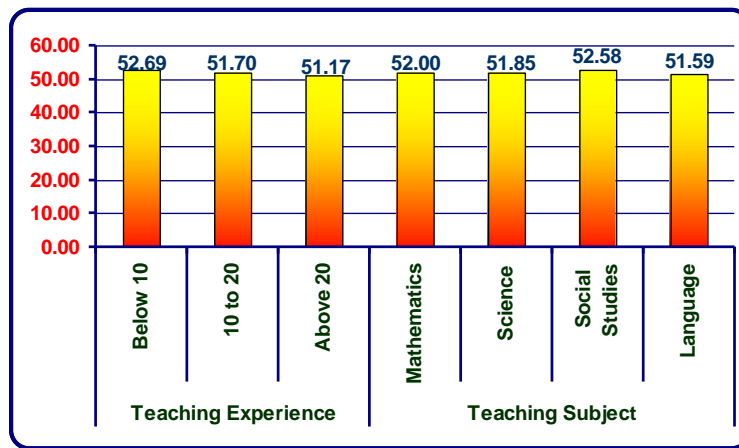

Graph-2: Mean comparison between the perceptions of teachers based on their Locality and Management concerning Co-Curricular & Extracurricular Activities.
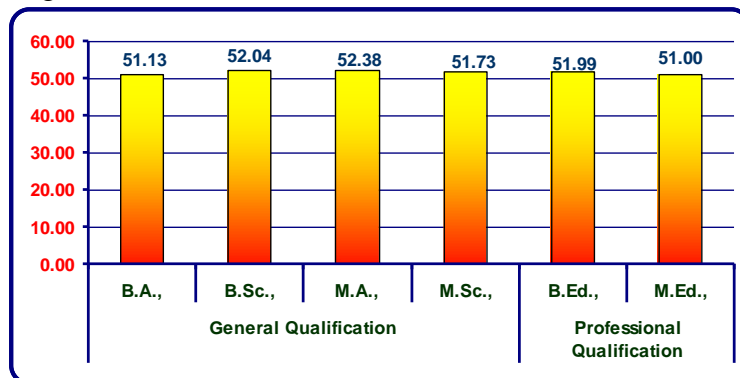
Graph-3: Mean comparison between the perceptions of teachers based on their General and Professional Qualification concerning Co-Curricular & Extracurricular Activities.

Graph-4: Mean comparison between the perceptions of teachers based on their Teaching Experience and Teaching Subject concerning Co-Curricular & Extracurricular Activities.

Conclusion

It is observed that engaging the students outside the classroom through co-curricular and extra-curricular activities plays a significant role in learning and also in overall development. However, the teachers and parents need to understand the importance of engaging the students through co-curricular and extracurricular activities. This aspect is considered as a professional competence of a teacher. Continuous development programs, workshops, and other training programs are necessary to improve this competence. Some special training programs are to be facilitated for the teachers to use web tools and mobile apps for sharing information and collaborative learning.

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THE SUBJUGATION OF PEOPLE OF COLOR IN LINE WITH BEAUTY STANDARDS IN TONI MORRISON'S "THE BLUEST EYE"

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ABSTRACT

The Bluest Eye is Toni Morrison's first novel and a book heralded for its richness of language and boldness of vision. Set in the author's girlhood hometown of Lorain, Ohio, it tells the story of black, eleven-year-old Pecola Breedlove. Pecola prays for her eyes to turn blue so that she will be as beautiful and beloved as all the blond, blue-eyed children in America. In the autumn of 1941, the year the marigolds in the Breed loves' garden do not bloom. Pecola's life does change- in painful, devastating ways. It is a vivid evocation of the fear and loneliness at the heart of a child's yearning and the tragedy of its fulfillment. The Bluest Eye remains one of Toni Morrison's most powerful, unforgettable novels- and a significant work of American fiction. This research shed light on how whites subjugate black people psychologically in line with beauty standards.

Keywords: Beauty, Subjugate, Standard, Black People, Pecola.

Introduction

Toni Morrison was born in Lorain, Ohio, on February 18, 1931. Among her three siblings, Morrison was the second-oldest and lived in an integrated neighborhood. As a child, Morrison was unaware of racial segregation until she was in her adolescent years. Her parents were both employed, with her father taking on many jobs and her mother working as a housewife. They instilled a love of novels in her and helped her better understand what it means to be a person of color in today's world. Morrison told a reporter for The New York Times that she was the only one in her first-grade class who could read. Morrison has always been an excellent student. For her undergraduate degree, she attended Howard University.

For her master's degree, she chose Cornell University. She was dubbed "Toni" by her classmates after graduating from Cornell University. Chloe Wofford is her valid name, although Toni has been used in the publication of her works. As an African American woman novelist, she is most recognized for portraying powerful African American protagonists. Her first novel, 1970's "The Bluest Eye," was a critical and commercial failure. As a writer and university lecturer, Morrison has achieved a great deal despite the shortfalls of her debut novel. Pulitzer has been awarded the Nobel Prize for Literature.

Accolades and honorary degrees abound for this award-winning American author. Former President Barack Obama bestowed the Presidential Medal of Freedom on her in 2015.Obama. In 1957, Morrison returned to Howard University, where she had previously taught English. Harold Morrison, an architect from Jamaica, was also met there. In 1961, they had their first child, and Morrison departed soon after.

After graduating from Howard University in 1963, she returned to Ohio to start a family with her second child. Morrison relocated to Syracuse, New York, in 1964 to work as a senior editor for a text novel publisher. It was not long before she became a publisher's editor at Random House.

Pecola Breedlove lives in Lorain, Ohio, a little African American girl in Toni Morrison's first novel, "The Bluest Eye." Pecola's two best friends, Claudia and Frieda MacTeer, can see the tragic events in her life through their eyes. Pecola confides in the MacTeer sisters about her insecurities while staying with them for a short period. In Pecola's mind, she is unattractive because of the hues of her complexion, eyes, and locks. Pecola feels that if she were white with blue eyes and blonde hair, she would be more popular and have a better life. Pecola appears to have a special place in Claudia's heart, but she resists both of their concerns since she was taught to be more self-

aware. Pecola finally returns to live with her parents and siblings. A drunken father, an obsessed mother, and a sibling who is always on the run characterize her family. As Claudia continues to read, more terrible things happen to her, including domestic violence, racism, and prostitution. Claudia is sympathetic to Pecola's plight and does her best to be a friend to her. Pecola is a victim of her family's circumstances, having been mistreated by her parents, raped and pregnant by her father, and left to deal with the fears of a young teenage girl by those she felt she could trust. Throughout the work, the harsh facts of life and the loss of youthful innocence are laid bare.

The novel's key topics include beauty standards, adolescent development, and the importance of family ties. Regardless of their age or ethnicity, all women are held to a high level of beauty by cultural norms. Pecola and Claudia's presence in the narrative is perceived as a source of uneasiness for them. Their ebony complexion, brown eyes, and dark hair are stigmatized by a culture that values fairness and fairness above everything else. This issue still exists in the real world, where young women are pushed to conventional beauty standards. Beauty standards are an issue in the real world, regardless of whether they are based on skin color, body form, or weight. As a woman of color, these beauty standards have a more significant impact.

In work, the subject of growing up too quickly or losing one's childlike innocence is a recurring one. As youngsters, Pecola and Claudia are exposed to life-altering events. While many young people wish they could grow up quicker, they often lack a grasp of the world's harsh realities. Although Pecola has little option but to grow up quickly, she encounters things she should not look at at such a young age. As they encounter and experience things they do not yet comprehend, these girls lose their innocence. It does not matter what it is, and they know it is not correct.

In most cases, growing up involves having one's family act as a mentor and provide moral support. It is hard to obtain love and direction from a healthy family from a broken one! Family ties are crucial to this tale because they may have protected these girls from having to suffer the horrors they did had they stayed together. As a result of her upbringing in a dysfunctional household, Pecola ended up being a lost soul. Even though Claudia's family was too busy making ends meet, she was reared in a loving and nurturing environment.

When the going got difficult, she was strong enough not to let herself down.

Morrison's writing style is captivating, clear, and unabashed. She has no qualms about addressing the racial disparities that exist in our society. She depicts the horrific narrative of neglect, sexual assault, and bigotry through the eyes of a little child. As a result, readers consider Morrison's story problematic since a young girl narrates the graphic scenes. However, that is her point. This highlights the characters' loss of innocence throughout the narrative. "The Bluest Eye," one of her best-known works, deals with racism and the subjugation of people of color. Pecola is a "black little bitch" by a white lady in Morrison's novel. The tales she shares are uncensored. She spills the beans. There are three primary emblems in the novel: marigolds, marigolds, and marigolds.

A short story about a white picket fence home with a beautiful family is told at the novel's opening. After then, the heart-breaking tale of families torn apart by shattered homes is exposed. So that people of color who are less fortunate and who value family may see it, this is Morrison's method. As a result of her upbringing in a dysfunctional household, Pecola's outlook on life is clouded. Because she comes from a lovely family, Claudia has a more positive outlook on life. We see with our eyes. Pecola's parents wanted her to have blue eyes because they thought they would make her and the rest of the world more lovely. They had blue eyes, thanks to their well-off families and well-kept properties. Pecola's blue eyes set her apart from the others. Eventually, Claudia perceived Pecola's blue eyes as a threat and a hindrance to their relationship. Pecola is pregnant with her father's child after the story. Claudia and her sister plant marigolds for Pecola in light of her pregnancy since they symbolize safety and well-being. They felt that if the marigolds grew, Pecola's baby would be delivered without complications. Pecola had

anticipated a new beginning with the growing cycle of flowers.

Toni Morrison's "The Bluest Eye" has become one of her best-known and best-selling works. On Commonsense Media, her novel now ranks five out of five and four out of five on Goo dreads. Despite her work on behalf of people of color and the changing standards of beauty, Morrison has received acclaim and scorn for some of the subjects she has chosen to address in her novels. The story's themes have also sparked debate, making it a hot-button subject. Because of its "inappropriate" content, several schools and libraries have attempted to prohibit the novel. For discussing rape and prostitution, some have referred to her novel as "pornographic." Criticism of the novel's substance by members of the educational board is a common theme. According to Alabama State Senator Bill Holtzclaw, "the novel is simply absolutely unacceptable, from language to substance," he told Alabama Media Group in 2013. In the eyes of some, Morrison's work serves as a source of inspiration for young women and a window into the human condition. The Guardian says that the novel "...would not allow readers to leave the narrative without evaluating the hazards of societal norms and altering the way you look at how society functions." Morrison spoke out against "unyielding language satisfied to admire its own immobility" and language that "suppresses human potential" during her acceptance speech. Though she did not want to, she was often criticized for pushing political correctness in literature. "You know, the word "political correctness" has become a shorthand for disparaging ideas," she says in response to the critiques. In critics' opinion, strong, incisive, critical language is not reliant on hurtful words or curses, nor is it dependent on bloodshed or drama. By forcing individuals to be sensitive to the grief of others, are not erasing language."

Morrison demonstrates her commitment to her racial community by highlighting the plight of non-black people. However, she does not try to make readers feel sorry for people of color in her own words. She is only expressing her views on current societal issues.

Women in their early twenties will find this narrative interesting, dramatic, and relatable.

When the novel ends, left contemplating how we might work together as a society to promote equality in the face of pressing social issues. Rape, beauty standards, and racism are just a few of the societal ills this narrative touches on. Being a Black woman with a college degree, she defies the racial stereotype while raising three children, receiving prestigious honors, and working full-time. It takes many guts to stand up and speak mind, especially if a woman of color. Morrison opposes the oppression of people of color and women, although it persists. Racism and beauty standards are issues that can identify with a woman of color. Being a woman in today's culture is difficult enough, but proving as an Asian woman is much more difficult. It is easy for young ladies to get caught up in social media and conceptions of beauty.

Critical Analysis

This is the first Morrison novel, and it does not get any easier. However, in this case, the first novel she wrote, the tricky thing was to read it without it devastating. There is this sense of impending doom even with the little bit of innocence that there is.

This one starts with a description of a family amid war and depression in the 1940s, and its way of narration reminded of this (which seems quite silly now) children's song in Hindi - Aao Milo Seelo Salo—used to clap animatedly after pairing up with another person, while reciting the rhyme in a complete sing-song voice. Of course, this is a story narrated by a nine-year-old child who at once drips with innocence while carrying a vat of pain. The beginning itself will numb because it is evident that this story will be full of agony. However, it is equally interesting to note how such a complex, 'grown-up' story was narrated in part by such a young child. Especially when we often refuse to believe them to be worldly-wise and aware, to the extent of having banned the novel then, in schools and libraries.

"Jealousy we understood and thought natural – a desire to have what somebody else had, but envy was a strange, new feeling for us."

What is beauty? In one way or another, most of us can be accused of defining beauty through unnatural standards. Share the blame for being harsh on not only others. Moreover, however

much we speak about inner beauty is the only thing that matters. Some of us have tried the rub-de-dub once in a while for that glowing, fairer skin. An unnecessary legacy that resurfaces in almost all the dark-skinned Indian households every once in a while.

Was that magical realism when Pecola wished for herself to disappear? How sad felt for her, even before her major problems began. To be living with constantly feuding parents, to be wishing for death. Either for self or the others. Moreover, to feel such an inadequacy that she ended up wanting blue eyes was all so heartbreaking.

"All were engrossed in early-night reminiscences about dreams, figures, and premonitions. Their stuffed comfort was narcotic and had produced recollections and fabrications of hallucinations."

Pecola's experience with the White Mr. Yacobowski reminded of Untouchable by Mulk Raj Anand. Quite the same premise, where shame at being less than deserving morphs into anger for the inequality in the world. Astounded at the way Morrison wrote about Pecola's inferiority complex of being an African-American in a White community and inserted internalized racism in the form of a mixed-race girl and how a scale is brought out to measure who is lighter in the skin and prettier than whom.

The overbearing – will do what want to, others (especially women) be damned – men of this story need to be mentioned too. Pecola's father's childhood does not let him hate him, while his deeds do not make him like him! This was a female-dominated story, with a significant chunk of the female characters, especially the three prostitutes who constitute a significant part of the story even after not being one of the central characters. Nevertheless, will we call it a feminist story? Honestly do not know, since this is such a sad story where women do not seem to understand the plight of a young girl, where apart from men, women are also bringing down others of their kind, be it conditioning or judgment.

"He responded to his father's controlled violence by developing hard habits and a soft imagination."

"We looked for eyes creased with concern but saw only veil."

Conclusion

According to the critics, her work, "The Bluest Eye," shed light on society's ills and provided readers with food for thought. Morrison slammed the absurdity of society's expectations of beauty in her novel, which serves as a helpful lesson for young girls who read it. The novel's central message to readers is one of self-acceptance and self-love. Racism should not be omitted from the story since some people are still unaware of its presence.

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21. Yes, it is a good read. Toni Morrison's "The Bluest Eye." www.goodreads.com/novel/show/11337.1The Bluest Eye.html.

WILLIAMS BLAKE′S RELATIONSHIP WITH JOHN MILTON IS ONE OF REBELLIOUSNESS MORE THAN ADMIRATION.

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ABSTRACT

When it comes to becoming a great person, there is always someone to look up to. William Blake's writing was influenced by John Milton, as was Milton's influence on Blake. Moreover, Blake demonstrated Milton's work, Paradise Lost, more effectively than any other author. Blake is the only author who has done a better job illustrating John Milton's Paradise Lost than any other. Other works by Milton, such as Paradise Lost, were also a source of inspiration for Blake. Consequently, Blake's relationship with Milton is characterized more by respect than by admiration. In this research, Milton's Paradise Lost and Blake's "Proverbs of Hell" are compared to see any common themes.
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Keywords: Inspiration, Respect, Admiration, Rebelliousness, Illustrating.

Introduction

In the works of Milton and Blake, religion is the first commonality. Both of these poets had faith as a source of inspiration for their work. Many authors of Milton and Blake's era appear to have had a common theme of religion (Blake, 1974). The [Blake, W.] (1974). Apocalyptic sayings from the pits of hell In both the lost paradise and the hellish proverbs, faith is a common theme. To that end, Milton's Paradise Lost influenced Blake to write more religiously-themed material later in his career. Lost paradise and the classical epic: Blessington, Francis C. As of 2019, Routledge Milton and Blake wrote about the Bible's myths. "Extracts from John Milton's paradise lost." [Kennedy, Valerie, and Jonathan Williams.] (2019).

Joseph Viscomi, author. When William Blake's Large Color Prints Aren't Read. Wordsworth God and Satan are defined by several distinct characteristics in both of the authors' works. God's character is described in similar terms in both the lost paradise and the proverbs of hell. God is depicted as a loving and compassionate spirit. Heaven and creatures were created by the power of God's essence. Also, Satan is represented in both poems in a very similar way. Satan is depicted by Milton as a resentful and chaotic individual (Milton, 1859). The Poems of John Milton by Milton, J. (1859). (Vol. 1). C.H. Chapman and Company It seems that Satan is more concerned with

making trouble for those spirits he thinks are better off than him than he is with creating beauty and kindness. The religious themes in these two materials go beyond simply depicting the characters of God and Satan. A deeper meaning of faith suggests that people should treat each other with respect and create a happy and kind environment. This is why Satan was so concerned with causing as many problems as possible. Having been unable to embrace his fellow demons, God banished Satan from Paradise but gave him the authority to rule hell as punishment. Lost paradise and the classical epic: Blessington, Francis C. As of 2019, Routledge Milton, in turn, inspired Blake to write a poem centered on the theme of religion.

Imagery

Imagery is a standard stylistic device in both the lost paradise and the hellish proverbs. Milton's depiction of imagery in Blake's poem is similar to Blake's. In both of these poems, there are a lot of visuals (Blake, 1974). It is [Blake, W. (1974). Apocalyptic sayings from the pits of hell To make their points, the two authors used both beautiful and graphic imagery. Graphic and beautiful depictions of God's creatures like Adam and Eve, for example, are used. Some words and phrases are used to describe God's work. Nakedness is used as a metaphor for God's beautiful creation. Images of the Garden of Eden are also used to describe it. For the audience to

understand God's purpose in creating Eden, Eden is depicted in a visual medium.

It's also clear that the creatures' actions are beyond our comprehension. Among the behaviors of animals that are too large for the human eye are wolves' howling and lions' roaring. Stormy seas are yet another metaphor for God's intervention for humans to comprehend it.

Hell is also depicted in such a way that humans can't take it literally. The plowing of dead bones is a striking illustration of hell's true nature as a place of vengeance and torment. In addition to depicting suffering and Eden, imagery is also used to describe the acquisition of knowledge. There is a reason why the path of excess is necessary to get into wisdom.

Knowing what you're doing and being able to do it

Comparing the depiction of knowledge and control in Milton's Paradise Lost and Blake's proverbs of hell shows that Blake was influenced by Milton in his writings (Milton, 1859). The Poems of John Milton by Milton, J. (1859). (Vol. 1). C.H. Chapman and Company Writers like Blake and Milton used the concept of knowledge and control in their works. For the vast majority of people, religion serves as a source of power and knowledge. David A. Harper [Harper] "Paradise Lost Annotator and the Origins of English

Literary Criticism "No. 3 (2019) in Studies in English Literature 1500-1900: 507-530.] Eve's inability to eat the forbidden fruit symbolized her lack of control, while her ability to eat it symbolized her knowledge of the consequences of her actions (Blake, 1974). The Proverbs of Hell by Blake, W. After eating the fruit, Satan wanted Eve to understand her surroundings better. Due to her lack of understanding of what Satan was suggesting, Eve initially refrained from succumbing to temptation.

On the other hand, Satan was adamant that Eve be endowed with God's knowledge, which he claimed would be critical to her survival. Eve eventually caved into the devil's enticements, which led to her eating the cursed fruit. When she ate the fruit, she became more aware of her surroundings and her impact on the environment. The moment they finished the fruit, Adam and Eve realized they were naked. In this context, the state of bare skin represents wisdom (Milton, 1859). Their future was bleak due to God's decision to remove them from the Garden of Eden. Not only were these people punished harshly, but they are still being punished even today. Trying to learn more had all of these adverse outcomes.

According to the apocryphal writings of the underworld, knowledge cost Satan his standing with God and his fellow Angels. As we can see in Blake's poem, Satan exhibits ambivalence. He can boast of his superior knowledge in some situations, but in others, Satan remains calm because he has been banished from heaven. Satan prefers to be knowledgeable than uninformed (Milton, 1859). J. Milton, Jr. (1859). Milton's works of poetry (Vol. 1). C.H. Chapman and Company Because he gained knowledge, Satan was also able to become more powerful. The fruit that God had forbidden to be eaten was made available to Eve through the use of her sway over him. With the knowledge and abilities that he had, Satan was content.

Blake was influenced by a mystical approach to religion and spirituality when it came to knowledge and control. He was more concerned about an individual's direct relationship with God while deviating from the established religious norms. Besides Milton, Blake responded to other authors who wrote about religion in their works.

It is worth noting that, for example, Blake replied to philosopher and theologian Emmanuel Swedenborg's writings. The Swedish theologian adopted a traditional Christian dualism conception of Heaven and Hell as dwelling places for the righteous and the damned, with hell being the last destination for the former. On the other hand, Blake strongly disagreed with this reductionist view of the cosmos. Blake, both passionate and rebellious, saw Angels and Demons as two facets of the same archetypal pendulum. Demons, in his view, represent the liberal, feminine, and creative energies that are at the core of greatness in human beings.

As an alternative, he said that angels symbolize masculine, conservative spirits that aim to restrain and stifle creativity for the sake of restoring order. Blake recognizes the need

for both forces, but he sympathizes with the bad one. Apart from the proverbs of hell, Blake learns that devils want freedom while angels are solely interested in limiting creativity via his many other works of literature and art. 12 In his book, he explains how the angels have a tendency to boast about their wisdom, despite their arrogance. Blake shows how angelic logic is put to use here on Earth to keep the people in line. As far as I can tell, he even believes that angels serve as humans, whereas devils are libertarian libertarians who aim to save mankind from tyranny and social order.

The author also demonstrates how society has been controlled via the employment of false structures. Swedenborg's religious vision of the cosmos, according to Blake, is unimportant. Even the Swedish author lacks innovative ideas that may help free mankind; instead, he repeats old tropes about good and bad people, Heaven and Hell. An Angel and a Demon got into a furious disagreement over the nature of God in Blake's conclusion to his discussion of Heaven and Hell. The devil's perspective of religion, he said, was exemplified in Christ, who was a renegade who resisted religious traditions throughout his earthly ministry. The Church did, in fact, resist Jesus' ideas and deeds. At one point, Jesus was so irritated by the activities taking on in the Church that he expelled individuals from it. Milton's effect on Blake's idea of knowledge and control may be observed in this context. Blake, like Milton, has a freeing set of ideas.

Blake and Milton seem to believe in the liberation of human beings from the shackles of society. In a similar way to Milton, Blake confronts the accepted norms of society (Milton, 1859). People in the community were bound by the standards and ideals of the group, and they felt powerless as a result. Individuals in society may use Blake's concepts to free themselves from such social structures. A novelist develops proverbs that are in direct opposition to the book of proverbs in that they present different and distinct concepts that may be considered together as themes.." Blake's anti-mental slavery views show that the freedom of self-expression is ensured for all individuals. An overabundance of anything, according to the author, provides space for further knowledge.

To become intelligent, he advises individuals to keep going and accomplish more. It still makes literal sense since it's essential to know as much as possible about a subject. When someone returns to the exact location often, they get a deeper awareness of the environment than someone who just goes there once. Blake claims that the path of excess leads to an abundance of insight. However, there are many paths to enlightenment, but they seldom show there. That being said, the way to wisdom must be aligned with the direction of excess. Without an action plan, ambitions are nothing more than dreams or nightmares. There is also a strong emphasis on self-discipline on the path to surplus.

Archetypes

Another method to see how Milton and Blake were impacted by one other is to look at the archetypes in their works. As a hero dedicated to advancing the education of animals, Satan has shown himself to be an inspiring role model (Milton, 1859). Because of his wisdom, he was expelled from heaven for plotting to undermine God's Kingdom. Satan may have a bad reputation, yet he cares so much about educating the world's animals. One of Eve's archetypes is the damsel in distress, a naive heroine who has no idea what she's doing. As a result, she has no one to shield her from Satanic influence and deception when confronted by him.

Blake's employment of Milton-like archetypes led to his being hailed as a master poet. Apocalyptic poet Blake was seen as a result of his capacity to employ models in his materials, which he received from Milton. Many of his contemporaries thought he was insane because he was able to decipher religious parables so quickly. It was said by several of his contemporaries that he painted and wrote in a hallucinatory state. This preoccupation with the lost paradise in Milton's mind ultimately led to the creation of such enthralling and outlandish poetry. As a result of this, archetypes may be found in both Milton and Blake's works.

"Spiritual" as a topic

Blake's poetry, like Milton's, was presented in a spiritual setting. It is possible to view things

spiritually when reading Blake's poetry. The occult is brought into focus via his works. A new outlook on life is what he urges others to do. For example, he exhorts his listeners to study during the planting season and pass on their knowledge during the harvest season. In addition, he urged the reader to take advantage of the winter months. This is by far the most enlightening spiritual journey you'll ever take. Blake's use of imagery aids in conveying the story of God and Satan in a spiritual context. Spiritualism is prevalent throughout Paradise Lost. Milton uses a dove to illustrate how God's spirit may be found in both the past and the present. In the exact translation of the Bible, Milton utilized the dove to depict God's heart.

Blake uses the concept of spirit to describe concepts such as good and evil, right and wrong, and knowledge and ignorance. On the other hand, Milton uses the notion of spiritualism to explain why Satan tempted Eve in Eden. Paradise lost uses mysticism to portray things that can't be seen by the naked eye. Milton and Blake's works are fascinating to study because of their emphasis on spiritualism. As a result, the readers are more eager to decipher the consequences of God's conflict with Satan. That being stated, spiritualism is the most excellent way to understand God and Satan's conflicts.

Innocence vs. Knowledge

Other notable similarities between Blake and Milton include their works' use of knowledge in place of innocence. In both paradise lost and the proverbs of hell, the storylines are similar. Towards excellent and bad. Good and evil are described in the Bible in both stories. God and Satan are utilized as figures to represent good and evil, respectively, to show what is right and wrong. While Satan's nature is revealed as wicked, God's is depicted as good. When he was expelled from paradise for trying to destroy God, Satan was originally an angel. The characteristics of Satan are understood to be in opposition to those of God. He was sent to hell due to his endeavor to outdo God, where he remains to this day.

Satan is often depicted in the Bible and other religious texts as someone who seeks to obscure God's benevolent purposes to deceive people. Even though Adam and Eve were warned not to eat the forbidden fruit, God was pleased that they did not. In contrast, Satan persuaded Eve that eating the forbidden fruit was the most pleasing thing that God had denied her. As a result, God and Satan are seen as being on opposing sides of the spectrum. Furthermore, good and evil are considered to be in opposition to each other in this way.

On the other hand, Blake argues that these opposites are necessary for human advancement. Human nature dictates that we flourish in environments with conflicting forces. Life would be dull if it weren't for the presence of God and Satan. As a consequence of the characters' enthusiasm, mankind has been left yawning for more to advance.

When the natures of God and Satan are involved, the issue of knowledge vs. innocence is brought out clearly. The absence of sophistication is connected with simplicity. Since God created angels, including Satan, it is clear that he knows what he is doing. In the future, he produced the human race as well. When God finished making people, he gave them the ability to think and make decisions independently. Satan, on the other hand, believes that people are naive. Even though God gave them the capacity to think and decide, Eve could not make an educated choice when Satan challenged her to do so.

Satan, on the other hand, is much more intelligent than we are. Because of his cunning, he concocts the story that eating the forbidden fruit will make Eve smart. To understand why God forbids humanity from eating the forbidden fruit, he asked Eve to think about it.

When Satan aided her reasoning skills, she came to believe that God had actually buried wisdom in the fruit. A woman who had eaten the fruit said that eating it would make her husband, Adam, more intelligent. Following this calamity, Satan and mankind were shown to be both naive and incompetent. Satan may seem bright since he successfully persuaded Eve, yet God regards him as a fool. According to Milton, Satan had no idea why the forbidden tree was ever there in the first place. As Blake also noted, people are dumped this way; he claimed that what a wise man sees is unlike what the idiot sees. " In light of this, it is clear

that people lack God's understanding. Humans can't distinguish between good and evil.

On the other hand, Satan lacks God's wisdom and only has his own selfishness to blame for his desire to destroy him. Blake compares Satan to a bird that wishes the sky was dark, likening him to the devil. Satan desires to have all of mankind join him in hell as a method of retaliation for what God did to him. Satan's endeavors toward understanding bring him back to the pit from which he was exiled by God in the Garden of Eden. When it comes to combating the evil that Satan has brought to the world, God is on the side of humanity. Before Satan attempted to influence Eve, God warned Adam and Eve that they would be deceived by the temptation of the forbidden fruit. When Satan understood that he might use the forbidden tree to incite people against God, he saw a chance to strike back.

In his selfish deeds, he does not care whether the human-God connection is ruined. According to the ideal scenario, humans were seen by Satan as his money in his relationship with God. Throughout history, Satan has tried to convince people that the bond between God and humanity is shaky. Individuals may, however, use God's support in the battle against the devil. Satan, on the other hand, continues to try to ruin all that God has made. Milton's depiction of the connection between God, Satan, and humanity affected Blake's depiction of knowledge and innocence. In Milton's view, Satan lost his light and wisdom when he descended from heaven. Satan was able to sabotage humanity's connection with God because of human ignorance, according to Blake.

God. The devil, on the other hand, is not only foolish but also self-centered since all of his attention is focused on fighting back against

Thank you, God, for exiling him from paradise

Foreshadowing

The foreshadowing in the proverbs of hells is another impact of Milton on Blake. The audience was forewarned by both authors about what was to follow. Eve predicted the future when she saw herself in the river in the Paradise of Lost. In the beginning, she was woken when she encountered a black shadow in the light. To understand what she was seeing, she went to the river and walked along with it. She regrets pursuing topics she was interested in because of her desire to learn more about them. Despite this, no one cautioned her about the destructive nature of her wants. It's possible she was hoping to hear the voice of God or Adam, but neither did. In the absence of notification, she pursued the path she believed would lead to her goals.

Nonetheless, her yearning for direction and the distance from God prompted her to ponder what the future could contain. In the absence of God's intervention, she was able to discover who she really was. Even realizing that she was descended from Adam, she contemplated becoming the mother of the human race. Blake, like Milton in Paradise Lost, makes use of foreshadowing in Proverbs of Hell. Blake asserts that the creation of time leads to tremendous accomplishments. Human eternity is a product of time. Sometimes, knowing that something will happen for the better makes life seem a little less uncertain.

Hell's Wisdom in Logic

The other resemblance between Milton and Blake in poetry is that both the writers portray the dialectic understanding of hell. Good and evil deeds serve as excellent metaphors for hell's features. The poem Proverbs of Hell demonstrates human intelligence about heaven and hell. Blake goes into great depth on the punishment of human wickedness in hell vs. the reward of virtue in paradise. The dialectic wisdom of hell is portrayed in Milton's lost paradise by his request to the Holy Spirit for counsel leading to understanding. When Blake says that no one can become a star if their face does not provide light, it clarifies that knowledge cannot come from Satan.

Put another way, it means that no matter how hard someone tries, they will never be able to achieve stardom in something they have never tried. When Satan attempted to dethrone God, he lacked intelligence from the start. Consequently, he was not really displaying God's wisdom to Eve. Hell's knowledge was limited to those who excelled in committing evil deeds like Satan.

Differences

However, despite the parallels between the lost paradise and proverbs of hell, both Blake and Milton express themselves differently. Readers may identify the author's style by comparing these two poems. The depiction of paradise and hell is the first distinction. Hell is characterized as the worst place to be in heaven lost. Using the proverbs of hell, Blake rewrites the power connection between Satan and God. While Satan is the voice of the revolution, Jesus is the voice of restraint, he claims in this passage. According to Blake, Satan is a spiritual being who aspires to educate humankind. Detailed illustrations depict the process by which Satan was expelled from heaven. Satan is ecstatic to be there as the only one who has access to the information that God has consigned to hell.

God has the right to chastise Satan, yet Satan occasionally appreciates God's decisions and acts since they spare him the misery of ignorance that would otherwise befall him and his fellow-creatures. When it comes to depicting Satan, one poem portrays him as a ruthless killer, while another shows him as an honest man who wants Eve to know what God has kept from her. To people, Satan reveals that their minds may be both paradise and hell. Scholars like Blake have a special place in their hearts for Satan because of this revelation. Despite God's efforts to hide the truth from us, Satan was opposed to it.

Conclusion

Milton's effect on Blake may be seen in the parallels between the lost paradise and the proverbs of hell. Furthermore, individuals may learn how Milton was a legend to Blake via the Proverbs of Hell and through various other works. On the other hand, Blake was more fascinated with the loss of paradise than Milton's poetry. As a result, it is possible to draw several conclusions from the examination of Milton and Blake. The first conclusion is that both writers had a strong religious foundation in their compositions. It's safe to assume that these two authors read the Bible to better understand God's and Satan's storylines. The second conclusion is that the story of heaven and hell and good and evil and the angels and demons are all held together by knowledge. In the same way that the writers were more interested in what was going on between God and Satan, everyone else is.

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A COMPARATIVE COUNTRY WISE STUDY OF THE CONTRIBUTION OF LEADING CORPORATES TOWARDS COMMUNITY DEVELOPMENT

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ABSTRACT

Community Development is one of the most important and integral components of social performance in today's scenario for business organizations. Increased Social performance is the ultimate result of coordinated efforts of the government, business organizations and society. Corporates all across the globe have put efforts for the betterment of the public and society at large. In this paper, an attempt is made to study and compare the community development practices of different countries by taking a sample of 10 leading corporates on the basis of market capitalization from each country. The technique of ANOVA has been applied and the results show that there exists a significant difference in community development practices of 10 countries. India is at the top with 101.34 mean score, followed by the USA, Canada, Russia. France has attained the least mean score of 30.620 with respect to community development.
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Keywords: Social Performance, Community Development, Corporates, Stakeholders

Introduction

Corporate social performance is gaining importance worldwide and the corporates all across the globe have indulged in social performance. The stakeholders give importance and preference to those business organisations that give prime importance to the fulfilment of the requirements of stakeholders rather than focus on earning profits. Due to the technological advancements, liberalization and globalization, the entire world has become a global village. All the developed and developing nations are covered under the ambit of globalization. They consider social performance as a tool to enhance their profitability, goodwill and value. The various areas covered under the ambit of social performance are- community, human resources, environment, energy, product safety, innovation, etc. The business organizations meet their requirements of resources from the society and in return, it becomes the responsibility of the organizations to give back to the community and society. All the loss caused to the society and mankind by business organizations is irreparable. Therefore, the corporates must take a step for making good the loss.

The corporates have developed an understanding with regard to social performance and community development. They contribute to the community through the establishment and growth of educational institutions for underprivileged, setting up libraries, providing scholarships etc. They provide health care facilities to the public by setting up hospitals, provision of medicines at lower prices, take steps for reducing child mortality, etc. Measures are taken by business houses to eradicate hunger, poverty and malnutrition by providing mid-day meals to the poor, safe drinking water, the creation of employment and entrepreneurial opportunities in society. Infrastructure development is one of the components of community development and corporates are undertaking various projects with regard to the community. The corporates have understood that it's not the sole responsibility of government to work for the betterment of society and community but corporates have to come forward to share the responsibility.

The Review of Literature

Priya & Ajay (2013) in the paper have emphasized that development of a nation is not the sole responsibility of the government and business organizations must come forward and take initiatives for the growth of the nation and its people. They studied the approach of HPCL and IOCL towards the CSR activities and found out that education, community development, childcare, livelihood, healthcare and environment are the main focus areas.

Sharma & Kiran (2013) discussed the various developments taking place in regard to CSR practices in the time period ranging from 1975 to 2011. It was observed that globalization has acted as a catalyst in promoting corporate social responsibility, and it has become indispensable in a large number of sectors of the world.

Tripathi & Bains (2013) highlighted the growing importance of CSR from 2000 onwards. A number of global voluntary regulations, codes, guidelines and initiatives such as Global Reporting Initiative (GRI), UN Global Compact, the Principles for Responsible Investment (PRI), the redrafted Organization of Economic Cooperation and Development (OECD) guidelines for multinational enterprises, the Dow Jones Sustainability Index, Accounting for Sustainability Report have been framed from time to time for making accountability of CSR better.

Marquis & Qian (2014) in their paper entitled "Corporate Social Responsibility Reporting in China: Symbol or Substance?" have focused on how and why firms strategically respond to the government with regard to corporate activity. The study has been conducted on listed Chinese firms between 2006 and 2009. It was observed that over past years, the number of firms issuing CSR and sustainability reports have increased due to change in China's political system and government involvement.

Singh & Verma (2014) have analysed the reasons behind the enactment of legislation making CSR mandatory in India so that the quantitative and qualitative aspects of CSR are attained. The government observed that corporates have generated wealth for the shareholders for decades, whereas on the other hand, the country is facing acute problems of poverty, unemployment, illiteracy, malnutrition, etc. Corporate growth has widened the gap between modern India and rural Bharat, making it imperative for the corporates to lay emphasis on socially responsible business practices that leads to equitable distribution of wealth in the community.

Farooq et al. (2015) studied the relationship between corporate governance and CSR performance by taking a sample of 247 US companies listed on the New York Stock Exchange for the period ranging from 2007 to 2011. It is found that firms with strong governance give better CSR performance by making investment in social activities which proves a positive and significant relationship between them. The relationship between firm size and CSR score is also positive which implies that large sized firms invest more in CSR as they have sufficient finance and are more sensitive to stakeholders also.

Gherghina & Vintila (2016) tried to explore the impact of CSR on firm value by taking a sample of 65 listed companies in Romania. A questionnaire was framed relating to CSR policies, covering four main dimensions with 40 items under them. Four broad areas covered were- social involvement, employee development, quality and safety of products and services and environmental protection. Multivariate regression models were employed and it was found that overall CSR had a positive impact on the value of listed firms. Further, it was concluded that out of the four CSR subindices, three subindices: social involvement, employee development, quality and safety of products and services had a positive impact on the firm value while one subindex, environmental protection had no influence on firm value.

Shyam (2016) has described CSR as an important business practice which has received recognition from large international companies as a means of promoting their brands and enhancing goodwill. It was realized by the Indian corporates that they must maintain responsible relationships with the community that contributes to sustainable development. Moreover, business organizations have the facilities and expertise to bring social change.

Chauhan & Dawra (2017) have made an attempt to broadly categorize the evolution of CSR in India into two phases- the Philanthropic Era and the Legal Era. They mentioned that CSR is of the utmost importance in India as 51% of its population is poor as per study conducted by Oxford Poverty and Human Development Initiative. The main areas of focus under CSR should be the reduction in poverty, availability of education and health, skill development, provision of drinking water, etc.

Sila and Cek (2017) used stakeholder theory as a base to find out the impact of CSR performance on economic performance of corporates. The technique of regression analysis was applied on the ESG data of Australian firms from 2010 to 2016 and it was found that the main component that provides maximum contribution to financial performance is the social performance. Environmental performance also contributes to financial performance but the impact is less in comparison to social performance and there is a very weak relationship between corporate governance and economic performance.

Hategan et al. (2018) tried to find out the strength of the correlation among CSR activities and Profits. The term CSR activities has been related to "Doing good" and profits related to "Doing well". They have studied the impact of doing good on doing well, and it has been observed that business organizations that perform CSR activities with dedication and commitment are more profitable as compared to the ones which are lagging behind in performance of CSR activities. It has been realized that in recent years' corporates have made a shift from the traditional goal of earning profits to the modern era of sustainable development.

Kakade (2019) explained the journey of CSR in India from 1800 till the present times. Prior to 1850s, CSR was influenced by religion, customs and culture. Shipping companies and corporates helped society in situations like starvation, pandemics, etc. After 1850s, the main lead was taken by renowned business families such as Tata, Birla, Shriram, Godrej to scale CSR to new heights in the form of philanthropy. Nowadays, CSR is viewed in a different way and is regarded as a means to create brand awareness among people and enhance the reputation of concern.

Bhatia & Makkar (2020) made an attempt to study and compare the CSR reporting practices of companies in developed and developing nations. The developing nations included in the study are BRICS nations- Brazil, Russia, India, China and South Africa and developed nations comprised of USA and UK. Content analysis was applied on reports of 325 companies listed on stock exchanges of their countries. T-test was employed and the results found that the mean CSR score of developed nations is 53.5% and that of developing nations is 49.4% which shows a significant difference in CSR scores. Therefore, it suggests that developing nations should endeavour to implement CSR more effectively and wisely.

The Need of Study- Community development is becoming popular all over the world. The development and growth of a community is essential for the growth of an economy and world at large. Corporates must understand and recognise that their contribution towards community and society will play an indispensable role for the growth of nations and will uplift various segments of the population. They must consider community growth as their prime responsibility and must perform activities pertaining to it with full commitment and dedication. The need for the study was to make the countries and their governments aware of their contribution to communities and the country wise comparison will motivate them to perform as per the highest standards achieved.

Objective of the Study- To study and compare the community development performance of leading corporates of 10 selected countries.

Research Methodology

Sample Size- On the basis of G 20 (The Group of 20)- an international forum, a sample of 10 countries have been drawn and the list of countries is- India, USA, Japan, Germany, UK, France, Russia, Canada, Australia and South Korea. Further, from each country, 10 leading companies (excluding Banking, Finance & Insurance companies) have been selected on the basis of highest market capitalization subject to the availability of annual reports, CSR and Sustainability reports.

Time Period of Study- Study is confined to a period of 5 years from 2014 to 2018.

Sources of Data Collection- Data relating to community development activities has been collected from CSR Reports, Annual reports and Sustainability Reports.

Techniques applied- Community Development Index has been prepared comprising of 40 statements and Content analysis has been employed to calculate Community Development Score on the disclosure scale of 0 to 8. The technique of

ANOVA has been applied to check whether there is a significant difference in the Community Development Score of 10 countries.

The Formulation of Hypothesis

H0: There is a statistically significant difference among countries with respect to their contribution to community development.
H1: There is statistically no significant difference among countries with respect to their contribution to community development.

Data Analysis and Interpretation
Table 1: Country Wise Mean Score under Community Development

Country Name	N	Mean	Standard Deviation	Minimum	Maximum
India	10	101.340	15.3557	77.8	123.8
USA	10	65.580	18.4941	32.8	90.4
Japan	10	52.220	13.2455	32.8	75.6
Germany	10	49.020	25.6301	12.6	83.6
UK	10	47.280	13.1390	24.8	68.2
France	10	30.620	10.0317	14.6	46.6
Russia	10	61.780	14.8112	43.8	83.2
Canada	10	62.860	18.1240	38.2	90.4
Australia	10	56.140	23.1173	26.6	95.8
South Korea	10	51.000	18.1989	25.4	84.6
Total	100	57.784	24.1869	12.6	123.8

Table 2: Country Wise Ranking according to the Mean Community Development Score

Rank	Country	Mean Score
1	India	101.340
2	USA	65.58
3	Canada	62.86
4	Russia	61.78
5	Australia	56.14
6	Japan	52.22
7	South Korea	51
8	Germany	49.020
9	UK	47.280
10	France	30.620

On the basis of Table 1 and Table 2, it has been found that the mean community development score of India (101.340) is the highest among the 10 countries. The USA has attained a mean score of 65.580 and has achieved second rank. Canada has achieved a mean score of 62.86 and Russia is on fourth rank with a score of 61.78. The mean score of Australia is 56.14, Japan is 52.22 and of South Korea is 51. Germany has attained a score of 49.020, UK has got 47.280 and the least Community development score of 30.620 has been attained by France.

Table 3: Community Development through ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Community Development	Between Groups	30043.446	9	3338.161	10.779	.000
	Within Groups	27872.128	90	309.690		
	Total	57915.574	99			

As per Table 2, the results show that null hypothesis stands accepted as the p value is .000 which signifies that there is significant difference among countries on the basis of the community development score. It shows that the performance of leading companies with regard to community development is different among the 10 selected countries.

Findings of the Study

The results show that there is a significant difference among countries on the basis of Community Development Score. It shows that the performance of leading companies with regard to community development is different among the 10 selected countries. Community Development Score of India (101.340) is the highest among the 10 countries. The USA has attained a mean score of 65.580 and has achieved second rank. Canada has achieved a mean score of 62.86 and Russia is on fourth rank with a score of 61.78. Germany has attained a score of 49.020, UK has got 47.280 and the least Community Development Score of 30.620 has been attained by France. It has been observed that countries like France, UK, Germany, South Korea must put sincere efforts for the growth and development of the community. Countries like India, USA, Canada and Russia are performing quite well for the development of the community.

Conclusion

All the developed as well as developing nations have to put efforts for the growth and development of communities. The corporates must consider expenditure on communities as an investment rather than a cost. The corporates all across the globe must understand the requirements of their nations in terms of community development and must give back to the society. Instead of making voluntary contributions, the corporates must imbibe social performance and community development as a mandatory act of their performance as it will ultimately help in raising the standard of living of the people and lead to the growth and development of nations.

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INTERNSHIP' IMPACT ON STUDENT'S CAREER DECISION IN THE HOTEL INDUSTRY

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ABSTRACT

The goal of this study is to look into students' internship experiences and how they affect their career decisions in the hotel industry, as well as to look into the variations in undergraduate students' opinions of hotel internship procedures. This research also attempts to determine the students' degree of happiness with their internship experience, as well as the stakeholder who has the most effect on the students' overall satisfaction. Data were collected from hotel management students at several institutions around Jaipur using a structured survey questionnaire with non-probability convenience sampling. A total of 120 students (N=120) took part in the survey. The results were based on the factors' mean values and regression analysis to determine the influence of internships on students' career choices. The more students enjoy their internships, the more interested they will be in pursuing a career in this industry. The studies also revealed that internship experiences have a minor influence on students' career decisions.

Introduction

In tandem with the tourism industry, the hospitality business is expanding. People travel to other areas for various purposes such as corporate jobs, business, pleasure, education, pilgrimage, research, and so on, resulting in an increase in growth. This expansion provides a cause for the hospitality business to grow, as well as contributing to the economics of the whole hospitality sector. This service-oriented hospitality business includes hotels. One employee belongs to the hotel business among every 10 employees, according to popular belief. With the increased expansion in the tourist and hospitality industries, hotel management colleges play a critical role in supplying trained labour.

The Industrial Training programme combines theory and practice. It allows trainees to go into the realm of dreams. Hospitality is a way of life. Internships in the hotel management programme have proven quite important throughout the year. A student must complete 22 weeks of industrial training according to the curriculum and course structure. Each student is required to participate in industry exposure training. This exposure to the business aids each student in obtaining the finest employment possibilities during campus recruitment.

Most of these programmes require their students to participate in off-campus internships in order to meet industry standards. These internships will prepare them to apply the knowledge, attitude, and professional skills they gained in school to a real-world setting. As a result, students will be expected to expand their knowledge and experience, as well as get familiar with industrial procedures and company management.

(Imran Rahman, 2010) As hospitality education is so closely related to the industry, it is generally emphasised that some level of industry engagement is important in assessing the programme. According to (Immaneni and Sailaja, 2017) the major goal of the internship is to increase employability skills and ensure a smooth transition into their employment.

Internships are usually viewed as a win-win situation for all parties involved, including students, hotel management institutions, and hotels. During their internship, students can get practical experience. Hotel management schools can establish professional relationships with the industry, allowing their students to get industry experience. Hoteliers, on the other hand, can hire people to manage their businesses. As a result, each stakeholder plays an essential role in making the internship a success. An internship is a type of experiential learning that combines classroom knowledge and theory with real-world application and skill development in a professional context. Internships allow students to get important practical experience and build contacts in

professional sectors they are interested in pursuing as a career path, as well as employers to coach and assess talent (National Association of Colleges and Employers, 2011).

According to different research, when hotel interns realise that their actual job experience is the complete antithesis of what they imagined, they develop misunderstandings about the business and feel bewildered about their career options (Lu & Adler, 2009; Roney & Oztin, 2007). However, according to another research (Chiu, 2012), some students were able to enhance their employability, professional core competencies, communication skills, time management, and confidence while completing the same internship, resulting in correct demeanours and outlooks.

Literature Review

Importance of Internship

A study by (Tse, 2010) found about student satisfaction and internship experience must be in a positive manner. Content analysis was applied to the placement reports submitted by 279 students. Based on a simple counting of placement attributes mentioned by students, the analysis yielded nine themes. (Hou, 2018) says Internships can play the role of triangular partnership among schools, students, and industries. However, internship experiences that fail to meet students' expectations may also discourage them. Findings revealed that genders and multiple intelligences did make a difference in students' expectations of an internship.

Another researcher (Kaşli & İlban, 2013), aims to identify the problems undergraduate students encounter as interns in tourism programs and document their views on the tourism sector after their internships. Results of Structural Equation Modelling (SEM) show that problems encountered during internships negatively affected the students' attitudes toward tourism-related jobs. According to ("Internship program: A study on students' satisfaction," 2017), many hospitality graduates are sceptical to join the industry once they have graduated. This phenomenon is believed to be because they endured hardship during their internship program. Pearson Correlation Analysis was used to determine the relationship between the variables. The findings revealed that all the factors are significantly related to the student's satisfaction with the internship.

Internship Practices and Students Perception

A study by (Siu, Cheung, & Law, 2012) shows that many hotel management students show negative attitudes toward entering the hotel industry. Work-life balance is recognized as one of the top five important challenges in human resource management. Different hotel job characteristics would lead to different internship experiences, according to the author's research. A study was done by (Pusiran, Janin, Ismail, & Dalinting, 2020) also highlights some issues pertaining to internships from the students and the industry's perspective. Findings reveal that the sources of conflict arising between the two parties need to be addressed carefully to create a win-win situation. The paper offers some suggestions for higher education institutions as to how to establish better guidelines for student internships as well as for industry operators.

Factors contributing to students' satisfaction during the internship

(Chen, Shen, & Gosling, 2018) expressed that a primary goal common across hospitality internship programs is to make students more employable. This study investigates enhanced competencies in employability leading to student satisfaction with an internship program and the relationship to key stakeholders in the program. The school and the student's own self-commitment show a positive effect on employability, however, satisfaction with the employer was not significant suggesting areas for improvement. (Marinakou and Giousmpasoglou, 2013) also, investigate internships in the hospitality sector and identify factors that contribute to student satisfaction from this working and learning experience. The findings suggest that overall students demonstrated a favourable perception towards their internship experience. Long working hours, low or poor pay, and lack of coordination are issues that were raised as challenges and may contribute to low satisfaction.

A researcher (Ko, 2007) investigates the factors associated with hospitality students'

satisfaction with internship programs and the relationships between training, job satisfaction, and confidence about future careers. A principal component analysis was used to determine the degree of satisfaction with the supervisor, the educational program, the environment, the administration, and relationships. The regression analysis showed that training satisfaction played a positive role as a predictor of participants' job satisfaction and confidence about their careers.

Career Decision Making

According to (Zhang, Rashid, & Mohammed, 2016), a great proportion of Hotel and Tourism Management graduates fail to make their career decisions to work in the hospitality industry. This study contributes literature by clarifying the relationship between two motivational factors and students' career decisions as well as by determining the moderating effect of an internship programme on such a relationship. (Robinson, Ruhanen, & Breakey, 2016) put their views that students often change their career choices relating to the tourism and hospitality industries following work experiences. This study investigates how participation in one specific type of work experience, an internship, impacts student participants' career choices and goals. Many participants indicated they had switched their goals away from pursuing a career in hospitality in favour of developing a career in tourism. (Park, Kim, & Lee, 2017) shared his research which explores the key factors influencing potential employees in the hospitality and tourism industry. The study suggests that the career decision-making process is related to job selection. Attitudes toward behaviour and job selection had significant effects on career decisions. Students with internship experience were more likely to form positive attitudes toward the industry, suggesting internships to be a useful source of a stronger relationship between the industry and job aptitudes.

Research Questions

The following research questions were created based on the preceding literature analysis to represent the study's major purpose:

RQ1: To what extent, the Internship program Influence hotel management students' Perception of the Hospitality Industry?

RQ2: To what extent do internship experiences impact students' career decision making?

RQ3: To what extent do students during internships feel satisfied?

Research Methodology

Research objectives must be determined to make an accurate and fruitful decision on research methods. The following are the research's four key goals:

- Investigating students' current perceptions towards the internship experiences in the hotel industry.
- Investigating students' current perceptions towards the hotel industry as a career choice.
- Identify the relationship between gender, willingness and number of times internship completed to students' perceptions towards working in hotels.
- Providing a list of concrete corrective actions that hospitality stakeholders should take to improve the industry's reputation as a viable career option.

Sampling Procedure

A sample of hospitality students enrolled in the hotel studies department was chosen to fulfil the stated objectives. A non-probability convenience selection method was adopted due to the practical difficulties of using a systematic random sampling strategy in selecting the targeted sample. The term "convenience sampling" refers to picking objects from a population-based on their accessibility and ease of selection (Groebner et al., 2005). All undergraduate students studying hotel management at Jaipur's hotel management colleges (2nd, 3rd, and 4th-year students) are included in this study's target population. Because specialisation in the faculty began in the second year, first-year students were excluded. Due to the time constraints of this study, it was not able to cover students from across all hotel management colleges in the Indian region. As a result, four hotel management colleges have picked a case study that will serve as a foundation for future research in this field.

Questionnaire Design

To test the hypotheses firstly the internship experiences in the hotel industry, workplace environment scale designed in (Nelson and Ryan, 1987) and (Aiken et al, 2000) research was adopted. The questionnaire includes three major categories. The three major categories are 1. Internship experience and workplace environment; 2. Internship and training & development opportunities, and 3. Co-worker's behaviour towards interns. There was an additional attention-seeking question on the favourite tourist destination to find out that students filled the questionnaire after proper understanding. The above questions used a 5-point Likert scale (1 implies very dissatisfied while 5 implies very satisfied).

Data Collection

Following the design of the questionnaire, 155 questionnaires were given to four hotel management colleges. To improve the study's usefulness and reference value, students from several hospitality-related schools were polled. The surveys were delivered to the faculty in charge during their class, and they were distributed and given time for all students to fill out the questionnaires in the same class and return them once they were completed at the end of the class. The respondents were chosen because they participated in internship programmes during their studies. They had completed internships in the hospitality sector and come from a total of four core departments. All of the questionnaires were returned, and 120 of them were considered authentic and eligible for analysis, with no missing data or inconsistent responses. Because the survey was conducted in a classroom context, it received a high response rate of (77.41 per cent).

Data Analysis

The Statistical Package for the Social Sciences was used to analyse the data (SPSS 22.0). Descriptive analyses (mean and standard deviation) were used to create a demographic profile of the respondents and establish the importance of each element, as well as the amount to which the students' internship experience provided these factors. A paired sample t-test was conducted to see if there were any statistically significant variations between the importance respondents set on internship factors and the amount to which they thought hospitality provided these. The paired sample t-test is used to test for differences between related or paired samples, such as when the scores or values whose means are to be compared case-by-case come from the same subject, according to (Ukaga and Maser, 2004). The standard null hypothesis states that the difference in mean values is 0 percent. If the alpha level (p-score) is less than 0.05, there is a significant difference. This test is useful in this study because it allows researchers to see if there are significant disparities between students' perceptions and their internship experiences. Regression analysis was also performed in this research to check the cause and effect between internship experiences and career decision making of students.

Reliability Analysis

Cronbach's coefficients ranged from 0.717 to 0.900 in reliability analysis of the factors in the student's internship experience (Table 1). The workplace environment during the internship has the highest mean (2.65), while job satisfaction has the lowest mean (2.35). Cronbach's alpha value for training and development is 0.90, the workplace environment is 0.86, co-workers' attitude toward interns is 0.75, and job satisfaction during internships is 0.72.

Table 1 Reliability Analysis of Variables

Variables	Items	Cronbach's α
Workplace Environment for Internship	Workplace is safe and secure for employees.	0.864
	Equipments are properly maintained for working on it.	
	Working conditions are hygienic	
	Proper lighting and ventilation are at a workplace	
	Emergency services are available at the job i.e., Doctor, First Aid, Fire extinguishers)	
Training & Development	During the internship, how much training have you had on hotel operations	0.900
	During the internship, how much training have you had in a specific department	
	Team building and group dynamics training are given to interns	
	Business skills training is given to interns	
	Resources are made available for training to all interns	
Co-worker Attitude	Employees help interns with work-related problems	0.752
	Managers give useful suggestions to interns on how they can improve	
	Employees provide you guidance for your betterment	
	Defend the organization when outsiders criticize it.	
	Supervisor organize proper induction for new interns	
Job Satisfaction	You receive recognition for a job well done	0.717
	You feel close to people at work	
	You feel good about working at this company	
	You get a sufficient stipend against your work	
	You feel good about your job.	

Research Findings

Characteristics of Respondents

This study surveyed 120 respondents (as shown in table 2), respondents tended to be male (55.80%) and (44.20%) were female. The respondents involved (36.70 %) 2nd-year students, (40.00%) 3rd-year students, (23.30%) 4th-year students. Most of the students reported that they are willing to choose industry as a career (65.80%). A sizable part of respondents (46.00%) claimed that they have experienced industry only one time as a trainee (59.00%) students went twice for hotel internship and only (15.00%) students have completed their internship three times.

Table 2 Characteristics of Survey Sample

Item		Percent*
Gender	Male	55.80
	Female	44.20
Year of Study	2nd Year	36.70
	3rd Year	40.00
	4th Year	23.30
Willingness to Work	Yes	65.80
	No	34.20
Internship Completion (No. of Times)	One time	46.00
	Two times	59.00
	Three times	15.00
*Adjusted (Valid) percentages excluding missing observations		

Factors Affecting Students' Internship Experience And Career Decisions

As indicated in table 3, a number of statements were created to look into students' career decisions based on their experiences and satisfaction during a hotel internship. Respondents were specifically asked to describe their experiences with 20 factors and to what extent they believe a career in the hotel industry provides them with the factors they value. With a mean score of 2.55 out of 5, the overall perception of the hotel as a career choice was somewhat neutral, based on the mean score obtained from the 20 attitudinal statements.

Findings indicate that the highest-ranked statement related to co-worker attitude was, "Supervisor organize proper induction for new interns" (mean score = 3.06); "a workplace environment that is safe and secure" was second-ranked (mean = 2.90) and third-ranked was "Emergency services are available at job i.e., Doctor, First Aid, Fire extinguishers etc.)" with (mean score = 2.69). The least ranked statement was "You get sufficient stipend against your work", which may be attributed to the fact that students are aware that they will either not get a stipend or very less stipend, hence stipend during internship is having least mean score (2.29). "Resources are made available for training to all interns" is also having the 2nd lowest mean score (2.31) in our findings. The findings reveal that students' satisfaction levels during internship and career decisions are positively influenced by their work environment and the behaviour of hotel' employees towards them.

Table 3 Perceptions of Hospitality Students toward an Internship experience and Career in the Industry

Factors	Mean	Std. Deviation
Workplace is safe and secure for employees	2.90 (2)	1.18
Equipment are properly maintained for working on it.	2.61(8)	1.06
Working conditions are hygienic	2.67 (5)	0.83
Proper lighting and ventilation are at a workplace	2.38 (15)	0.89
Emergency services are available at the job i.e., Doctor, First Aid, Fire extinguishers)	2.69 (3)	1.07
During the internship, how much training have you had on hotel operations	2.36 (16)	0.92
During the internship, how much training have you had in a specific department	2.44 (13)	0.99
Team building and group dynamics training are given to interns	2.46 (12)	0.86
Business skills training is given to interns	2.48 (11)	1.09
Resources are made available for training to all interns	2.31(17)	0.99
Employees help interns with work-related problems	2.41(14)	0.97
Managers give useful suggestions to interns on how they can improve	2.68 (4)	0.82
Employees provide you guidance for your betterment	2.46 (12)	0.87
Defend the organization when outsiders criticize it.	2.64 (6)	1.11
Supervisor organize proper induction for new interns	3.06 (1)	1.08
You receive recognition for a job well done	2.50 (10)	0.88
You feel close to people at work	2.57 (9)	0.86
You feel good about working at this company	2.63 (7)	0.94
You get a sufficient stipend against your work	2.29 (18)	0.91
You feel good about your job.	2.63 (7)	0.83

Variables Affecting Students' Internship Experiences Toward The Hotel Industry As a Career.

This section examines the relationship between several characteristics that may have an impact on hospitality students' perceptions and attitudes toward the industry, as well as their career prospects. (1) Gender, (2) Work Experience, (3) Years of Study, and (4) Study Major Willingness are the contingent factors.

Gender

An independent-sample t-test was used to see if there were any significant differences in respondents' perceptions of hospitality careers during their internships based on gender. Female students have less favourable perceptions of hotel careers ($\bar{\chi}$=2.65) than male students ($\bar{\chi}$=2.48), but there was no significant gender-based difference in student perceptions of hospitality careers overall. (See table 4 for details.)

Study Major Willingness

Referring to table 4, the test revealed that the mean value of respondents willing to work in the hotel industry ($\bar{\chi}$=2.46) is significantly higher than that of those who were not willing ($\bar{\chi}$=2.73). Students' willingness to work and their perceptions of the industry as a career choice was found to have a substantial positive association.

Table 4 Variables Affecting Students' Perceptions of the Career During Internship

Variables		M	SD	t (120)	p	Cohen's d
Gender	Male	2.48	0.602	-1.59	0.114	0.29
	Female	2.65	0.600			
Willingness to Work	Yes	2.46	0.510	-2.109	0.39	0.29
	No	2.73	0.710			

Number of Times Internship Completed

Table 5 shows the mean, standard deviation and F-value of internship completion and year of study across career choice groups. Results indicate a significant mean difference across career choice on internship completion with F (2,117) = p>0.05. Findings revealed that those who completed internships three times during their curriculum exhibited a higher level of a career choice as compared to two times internship completed. The value of n² was 0.028 (<.50) which indicates a small effect size. The post hoc comparison indicates significant between-group mean differences of each group with other groups.

Year of Study

Finally, statistically significant correlations between years of study, and career perceptions of the respondents were found. Post-hoc comparisons made using the Tukey HSD test showed 3rd year students are more likely to have positive attitudes towards the industry ($\bar{\chi}$=2.39), followed by their junior 2nd-year students ($\bar{\chi}$=2.51) but final year students have slightly unfavourable regarding a career in the hotel industry with ($\bar{\chi}$=2.90). In other words, students reach to final year and they complete their internship more times compared to other students, their perceptions of the industry become slightly negative. (See Table 5)

Table 5 Variables Affecting Students' Perceptions of the Career During Internship

Variable	One Time		Two Time		Three Time		F (2,117)	n²	Post-Hoc
	M	SD	M	SD	M	SD			
Internship Completion	2.56	0.38	2.48	0.75	2.81	0.43	1.69	0.028	3>1>2

Variable	2nd Year		3rd Year		4th Year		F (2,117)	n²	Post-Hoc
	M	SD	M	SD	M	SD			
Year of Study	2.51	0.37	2.39	0.77	2.90	0.4	7.04	0.100	3>1>2

We have conducted the regression analysis to check the cause and effect of all variables, to what extent student's internship experiences impact their satisfaction and career decision making in the hotel industry are shown in table 6.

The impact of the workplace environment, training & development and co-workers' attitude seeking on the satisfaction level of students. The R^2 value of .21 revealed that the predictors explained a 21% variance in the outcome variable with F (3,116) = 25.81, p<.001. The findings revealed that the workplace environment positively predicts the satisfaction of students during internships (B = .43, p<.001), whereas training & development has a significant effect on the satisfaction of students during internships (B = .06, p>.05).

Table 6 Regression Coefficients of the workplace environment, training & development and co-workers' attitude

Variables	B	SE	t	p	95%CI		
Constant	24.01	3.22	7.45	0.001	(17.54, 30.47)		
Workplace Environment	0.87	0.14	6.29	0.001	(.59, 1.22)		
Training & Development	0.24	0.26	0.94	0.349	(.25, .76)		
Co-workers Attitude	0.43	0.21	1.08	0.047	(.38,.85)		

CI=Confidence Interval

Discussion And Implications

This study was conducted to learn about students' experiences during their internships in hotels, how they influenced their decision to pursue a career in the industry, and how well they thought the hospitality sector would provide them with the desired job. According to the findings of the study, students who completed all three internships are less likely to want to work in the hotel sector than those who just took training once or twice. Although students have expressed severe concerns about the quality of internships in hotels. Respondents are dissatisfied with their working environment in the hotel, and they also do not feel connected to the hotel' employees. Employee behaviour is also a matter of concern, according to respondents, since they do not treat interns well. Interns are less concerned about training and development during internships than they are about the workplace atmosphere and internship satisfaction. Female interns' impressions are more negative than male interns' since they confront more challenges throughout their internship in Jaipur's hotels.

Students have a generally neutral attitude toward internships and career-building in the industry, but the findings show that respondents consider hospitality jobs to be low-paying jobs and that during internships, most respondents report receiving very little or no stipend, which echoes the findings of previous studies of hospitality settings (Kusluvan & Kusluvan,2000; Richardson, 2008). One of the key motivations for wanting to work in the industry after college could be this. Students have unrealistic expectations of the jobs they undertake in the industry, with the majority believing that they will work in an office doing white-collar jobs with set hours.

This is in line with (Casado, 1992) and (Sciarini, 1997), who discovered that most graduates thought they were qualified to serve as assistant managers and were searching for a managerial post rather than an hourly operational position. As a result, it is beneficial for students to understand the realities of the hotel industry working environment, as this will help them establish more realistic and lower expectations for internships and jobs in the industry. As students progress in their studies and have work experience in the industry, their perception of hotel-related jobs is affected in a slightly negative way. This goes well with the findings of many previous studies, such as (Barron and Maxwell, 1993), (Jenkins, 2001), and (Richardson, 2008), but, highlights the importance of the design and implementation of effective internship programs. So that educators should continue to refine internship programs that promote students' professional growth as well as realistic expectations of the industry.

Conclusion And Recommendations

The current study looked into students' perceptions of the hospitality industry as a career option based on their internship experiences. According to the findings of this study, the majority of students intend to work in hotels after graduation and acquire natural experience through internship programmes. They still do not see the industry as an appealing career path since many of the elements they value in a job are lacking. These findings underscore the necessity for the business to implement tactics and strategies to ensure that potential employees, hospitality students, do not leave the profession or fail to enter it after graduation. One of the purposes of this research was to identify a series of concrete corrective steps that hospitality

stakeholders should do to improve the industry's reputation as a career choice. The recommendations in this section are aimed at (a) industry employers and (b) university leaders and educators.

The Industry Employers

The hotel industry must continue to concentrate on improving several aspects of the industry's working conditions. Students say the industry lags behind other industries in a number of categories, including stipends or salaries, career opportunities, co-workers' attitudes, and working atmosphere. Unless and until the industry can improve people's opinions of a career in the business, it will continue to lose highly talented and trained workers. Industry companies are also encouraged to actively seek collaboration with the university to establish internship programmes for hospitality students that ensure pleasant experiences. This creates a win-win situation in which both parties can benefit.

Hotel Management Institutes and Educators

Tours to local hospitality establishments were organised by the university and educators. Hotel management institutions must work with industry professionals to conduct field trips that allow students to experience the genuine picture of the industry. Educators must play a role in ensuring that students have realistic expectations about the types of jobs available in the business, the working culture and time, salary, and career routes. When developing future courses, they must collaborate more closely with industry partners.

Research Limitations And Further Research

This study's findings are useful; however, they are not without limits. Only hospitality students from four institutions in Jaipur were polled, making it difficult to generalise from the data collected. Extending the number of participants and institutions would be considered in a future study. This technique would improve the topic's legitimacy as well as generalizability. Furthermore, this study takes a quantitative method. More research on the same topic might be conducted by conducting qualitative evaluations, which would provide a more in-depth insight into the students' opinions and career choices. A similar questionnaire might be used in a future study to examine if the same impacts and perceptions apply to students in the coming years.

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SLAVERY IN ANCIENT GREECE AND ROME

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ABSTRACT

It is said that slaves in millions were omnipresent in Greece and Rome making both societies very distinct in antiquity. Generally assumed to be the product of different factors, ancient slavery covered very different slave systems – from helotry in Sparta to private slave owning chattel slavery in Athens and in Rome. Such differentiation makes it difficult to reach any possible generalisation about Greco – Roman slavery. Still reflections can be made that provide emphasis in recognising the inhumanity that ancient slaves faced and also to examine how slaves, or even ex – slaves, were made part of the wider society in Greece and Rome. While the scholars emphasise and bring forth the idea of "good master" and "good slave", the condition of Greco – Roman slaves remained precarious and it is generally believed that to be a slave was a destiny that one wished to avoid. Over time, slaves were also subject to considerable change. The paper concentrates on the nature of slavery in ancient Greece and Rome and argues that the slaves were treated harshly, they were humiliated, even murdered, yet they retained an identity to fight and offer resistance.

Slavery in antiquity was the producer of labour, amounting to the physical ownership of a human being by another and it involved utilisation of such a human being as a piece of property owned by the master. As property a slave could be bought, sold, mortgaged and bequeathed after being deprived of social and political rights. The totality of a master's control over his slave gave powerful advantages to the slaveowner, permitting the dramatic differentiation between the master and the slave. This practice was as old as the beginning of the civilised economy and society in which certain people were stripped off of all the rights, being forced to work for those who enjoyed a more privileged position as free citizens in the society. Very harsh treatment given to slaves was integral to such a system which is viewed as an extreme form of servitude that was practiced in ancient Greece and ancient Rome. In fact, slavery was institutionalised in the political economy and society of the two worlds, believed to be the most advanced cultures in ancient times. It has been argued that slavery was the distinct invention of the Greco – Roman world.

Ancient slavery was rooted in distinctiveness because of certain factors. Firstly, there was no uniform slave system as applied to Greece and Rome. A number of very different slave systems prevailed in ancient times in such civilisations that valued liberty, freedom and democracy very highly. Yet, they bred "inferior" people in their hundreds and thousands from all walks of life, including males, females and children. The sheer scale of slave enterprise from the Dark Ages onwards in Sparta, from the 6th century BC in Athens and in Roman Italy from early in the 4th century BC to the 3rd century AD contribute to recognising the inhumanity of slavery. Still, a question needs to be posed -- how were slaves able to function so successfully as long as they did, when neither race nor capitalism were the crucial issues? Slavery was an enormous boom industry in ancient times as there were too many markets across the Mediterranean basin where slave service providers were needed as labour resource. Slaves existed wherever productive or service area existed, it was highly likely to find slaves engaged as basic service providers in antiquity.

Slavery was widespread in ancient Greece and Rome as an integral part of their cultures in one form or the other. It was generally understood that any free person who could afford a slave would own one. It was also a general maxim that the number of slaves a person owned was based on the wealth and status of that person. Conversely what this meant was that the number of slaves owned increased as the wealth of the slave owner increased. Estimates have been made regarding the number of slaves present in ancient Greece and Rome at a given point in time. It is stated that between 450 and 320 B.C. in Athens at

least 1 in 4 persons owned a slave, with the number of slaves estimated to be anything between 80,000 and 100,000. Another illustration in Greece is provided by the city - state of Sparta which was using slave labour on an unprecedented scale towards the end of the Greek Dark Ages (8th century BC). Sparta had converted the entire population of conquered regions of Laconia and Messenia in the Peloponnese into slaves. It is said that slaves outnumbered the Spartans by twenty times. Scholars have made estimates about the number of slaves in Rome too. Attention is drawn to the estimates that on the eve of the second Punic War the population of Italy was about 5 million. According to the figures worked out for the year 225 BC, at least 4.4 million were free inhabitants while about 600,000 were slaves and by 43 BC the slave population had risen to about 3 million. In comparison to Greece, therefore, slaves in Rome were present on a huge scale.

Greco – Roman slaves were acquired primarily through wars, piracy (at sea), banditry (on land) and the slave trade. However, children born to captured slaves was another source of slave supply. In some cases, even free humans could be enslaved by coincidence. Enslavement by the rules of the war meant that the victor possessed absolute rights over the defeated, or, the vanquished. This was the common practice in Greek city – states which remained arenas of trouble and conflict throughout their existence, and, also in Rome where it is famous that Romans fought wars for almost 600 long years. The significance of piracy and banditry in providing consistent supply of slave varied according to the region, and time. As pirates and brigands, they demanded ransom for their catch and whenever the ransom was not paid, they sold their captives to traffickers thus allowing the slave trade to prevail and flourish. In antiquity, slave trade was most prominent in the Mediterranean system which served both Greece and Rome.

For centuries Greeks fought endless conventional foreign wars conducted against the races whom Greeks called the "Barbarians" besides fighting numerous battles among themselves or indulging in *stasis* i.e. domestic political conflicts. There were also piracy wars lurking permanently on the edges of the Greek world. Yet, the Greeks themselves were rare in the stock of slaves. In foreign wars, their victories led the Greeks to enslave the enemies by laying hands on everything, including persons, property and the land of the defeated. After the Homeric era, enemy fighters were either massacred or taken as prisoners of war, along with their women and children, including those found not guilty of any crime but because they belonged to the defeated enemy. The vanquished were sold in Greece and to the Greeks. Sometimes the entire conquered cities were enslaved with hundreds and thousands taken to Greece. Thracians, Paphlogians, Phrygians, Syrians were found to be enormously preponderant in the stock of slaves at Athens, generally characterised as "bought Barbarians". There were famed slave marts like Delos, Savos, Chios, and some other regions of North Greece, where slaves exchanged hands among Greeks on a daily basis. Apart from direct warfare, pirates as "insatiable slave dealers" sold slaves to Greeks from the thousands of slaves captured by them in the second half of the 2nd century BC. However, Spartan Greeks made slaves of people from the end of the 8th and middle of the 7th centuries, as by then Sparta had converted the entire communities of Messenia and Laconia into slaves.

Use of slaves assumed huge magnitude in Rome too as slavery remained connected with Roman conquests and Roman victories, and war captives were easily converted into slaves by the Roman conquerers. The Macedonian War resulted in large influx of slaves into Rome. Another large - scale influx of about 250,000 Carthagian slaves occurred when Romans destroyed the city of Carthage at the end of the 3rd Punic War in 146 BC. Thereafter followed the Mithridatic Wars in the 80s BC placing more slaves at the disposal of the Romans. However, nothing could compare the enslavement of the Gauls, in millions, after Julius Caesar's conquest of Gaul in 50s BC or the late Republic. The slave supply continued to be augmented under the Roman Empire, with Delos becoming a primary slave mart. The tendency remained to import slaves hugely to Italy, with regular slave importation from North Africa, Gaul, Spain, Bithunia, Galachia,

Capodiccia and Syria. Piracy of slaves was also very dense. The wars from Alexander's invasion to the Battle of Actium allowed ample opportunities to the pirates to sell slaves to the Romans. The practice of *vernae* or acquiring house - born slaves remained another source of Roman slave supply. Sometimes Romans made slaves of Romans, those charged with violent crime were placed in the category of slaves or even Romans facing acute financial difficulties could sell themselves as slaves, though these methods, we are told, became unpopular by the 1st century AD. This was the time when piracy boosted Roman slave trade particularly after the establishment of Pax Romana. As wars became fewer, pirates and military adventurers targeted the tribal communities, and encouraged raids in the eastern Mediterranean region, allowing slavery to remain important.

How Greeks and Romans perceived their slaves was reflected in the names and terminology used by them as expressions of their relationship with slaves. In Rome slaves were subjected to a common status and were referred to as the *Instrumentum Vocale* meaning the speaking tool. The Roman slaves did not have a free choice to name their own selves as individuals. They could not even name their children. Until late in the Republic a slave was called *por*, explained as *puer*, meaning "boy". This term often preceded the derivation from the master's name so that Lucipor from Lucius was Lucius's slave and Marcipor from Marcus was Marcus's slave. These were more like labels, hardly a name. However, slaves began to be given individual names by their masters when their numbers became numerous. The slave owning masters gave names to individual slaves, as they pleased. These were based on a slave's nationality or ethnicity so that their foreign origins remained marked. And when the masters changed hands, the slaves had to take the name given by the new master. It is informed that the term *por* / *puer* was supplanted eventually with *servus*, etymologically meaning 'most humble servant'. However, on attaining freedom a Roman slave became the *libertus* (freedman).

In Greece, Spartan and Athenian slaves were by no means the same thing. Spartans called their slaves *helots* i.e. owned by the

state. When freed a *helot* was called *neodamodes*. In Athens slaves were owned by individuals as a general practice. Athenians viewed their slaves from a variety of perspectives, as reflected in the vocabulary used for slaves. In Homer, Hesiod or Theognis of Megara the slaves were called *Dmos* generally, the term was indicative of the status accorded to the prisoners of wars. However, the use of the word *Dmos* died out as slaves began to be called the *doulos,* a slave or *oiketai*, a servant. But Athenians saw the most important features of slavery in the term *doulos* and used it in contradiction to *eleutheros,* freedman. Thus, the social position of people who lacked freedom was distinctly reflected in the terms used to describe slaves.

Rights, privileges and claims existed in antiquity but not everyone had equal access to it. In Greece, Spartan slavery was established on an unprecedented scale after Sparta had defeated Laconia and Messenia enslaving their population en masse and treating them as helots. The helots held an inferior and subordinate status i.e. they were the collective property of all citizenry in Sparta and were owned by the Sparta state. The state assigned helots to Spartan citizens but they had no power to sell them or to free them. The Sparta state controlled the regulation and distribution of helots. Spartan helots were the original inhabitants in the Peloponnesian region but they became the largest slave population in terms of numbers, reducing the free Spartans themselves to a minority. It is stated that for every Spartan citizen there existed seven helots. Helots were a unique form of slavery controlled by the state Sparta, in contrast to other Greek city states. Sparta allowed the conquered Laconian and Messinian communities to remain settled as family units and continue to maintain their kin ties across the conquered lands. For Spartans, the helot population remained reliant on birth rates to augment the number of slaves as opposed to acquiring slaves through sale and purchase. As for Spartans, they were afforded greater privileges and security of life over the helots.

Helots were unique in the social system of the Spartan society which was intensely focused on the military training and the notions of superiority of its citizens. Sparta functioned

under an oligarchic system having a highly regimented society. The political edifice of Sparta's formal military power enabled it to subdue many Greek city – states. As a land fighting force Sparta fought for supremacy against Athens, the Thebans and the Persian invaders and became a dominant military power. Sparta inaugurated its hegemony in Greece towards the end of the 5th century BC. Their esteem remained strong as that of victors. The more wars they fought the more they relied on the helots for subsistence and other economic support.

The main justification to possess and own helots by Sparta was economic although they were treated as inferiors. Laconian and Messenian helots provided labour to Sparta and their performance became the bedrock on which Spartan power, wealth and leisure rested. Helots were tied to their land, working in agriculture primarily, and supporting Spartan citizens by handing over large percentages of their produce to Spartans and supporting the warriors, their families as well as widows. An important function of helots was to accompany their masters on military campaigns, carrying arms and armaments. According to scholars, contemporary Greek writers refer to helots as making up the mass of the Spartan army and guarding crucial supply lines. Sometimes helots even served as fighters for example in the battles of Plataea and Thermophylae. Helots also carried on domestic work for Spartan citizens and looked after cultivation on the *Kleoris,* the portion of land assigned to Spartan citizen. Helots also served as servants to young Spartans while they were under training in the *agoge*, the Spartan education system of imparting military training. Helots also served the Spartan citizen as tradesmen and artisans. Thus, a Spartan citizen stood in full view against the background of helot labour.

Helotry survived in Sparta as a dominant social formation for centuries perhaps because helots enjoyed certain privileges. Their condition was not completely wretched. For example, they could retain the surplus of their agricultural produce, almost half of the total measure of grain. They thus retained part of the fruit of their labour. Helots could marry and produce children, though the children too

inherited helot status. They were allowed religious freedom, besides holding the privilege to retain limited amount of personal property with which they could earn manumission. It is stated that in 225 B. C. about 6000 helots had accumulated enough to pay their masters and purchase their freedom, an indication that manumission could be obtained by a helot with the consent of the master. Moreover, helots contributed in making the Spartan aristocrats wealthy and powerful. Yet, relations between the Spartan masters and their helots often remained strained even though it was clear that without helots the Spartan society could not have become what it did in the classical era.

Two fundamental reasons have been extended to explain why Spartan treatment of their helots was harsh – 1) numerical predominance of helots, there were many more helots than Spartan citizens; 2) highly restricted helot mobility as Sparta state ensured their rigorous supervision in the conquered lands of Laconia and Messenia. Spartans had designated their helots as public enemies, as such the military training and discipline imparted to Spartan citizens kept them in permanent preparedness to keep a check on helots. Additionally, it is argued that Spartans looked upon the helots with fear as potential rebellious group that would revolt against the Sparta state.

As masters the Spartans knew how to control the helots, even by resorting to killing them. In 450 BC the Spartan Assembly gave some freedom to the slaves as an act of kindness for those helots who had performed acts of bravery on behalf of the masters. However, when helots gathered to be honoured the Spartans killed them all because Spartans thought they were too dangerous, therefore it was safer to kill them. As subjugated people, helots faced and endured harsh and bitter living conditions. Their clothes, dog skin caps and skin wrap to cover their bodies, were reflections of their inferior status. Regular beatings and whippings regardless of wrongdoing or forcing them to perform low dances, were a reminder that helots were slaves. Making them drink pure wine, considered dangerous, or still worse was making death the penalty whenever slaves were

believed to exceed their boundaries. Such were the inflictions imposed upon the helots by Spartans.

The state of Sparta ensured harsh control over helots through legalised institutions and even justified their killings as legitimate acts. According to scholars, Spartans regularly declared war on helots through the political body called the *ephors,* the magistrates responsible for maintaining law and order and for supervising helots. *Ephors* had the power to kill a helot even on mere suspicion of intentions to revolt. Then, the secret police in Sparta *Krypteia* handled the fittest and strongest of the helots, the favourite targets for *Kryptes,* for the purpose to remove the most able, the potential rebels among the helots. There were other means of control. For example, manumission was granted in very rare cases to helots, even then a freed ex – helot, *neodamode*, could never become full Spartan citizen.

The Spartans remained mistrustful of helots who were homogenous ethnically and shared a collective identity. The fears of Spartans came true when they fought the 2nd Messenian War in 660 BC after subjecting Messenians to helotry. The Spartans had then successfully banished the helot rebels to Sicily, but they harboured the fears of more slave revolts which proved true in 464 BC when an earthquake hit Sparta killing thousands of Spartans. It was at this time that Messenians instigated a massive revolt against Sparta. The Spartans couldn't suppress the Messenian revolt for at least 5 long years. But helots still did not get their freedom, they had to surrender before the Spartans. It was in c. 370 BC that Sparta lost its helots when Epaminondus, a Greek general of Thebes, liberated Messenia. But in Laconia, helotry continued till the 2nd century BC. Elsewhere in Greece, privately owned slaves increasingly became a typical feature of society and economy, as in Athens.

Athens, a rival of Sparta, was a city state located in the Attica region of ancient Greece. Like Sparta, Athens also represented a range of rights with free citizens at one end and the slaves at the other. In this spectrum it is stated that the lives of slaves were somewhat better, they being owned by individuals and not by the Athenian state. However, what was unusual about Athens is that it was considered the birthplace of democracy where free men were engaged in the production process in substantial numbers. Also, as free men Athenian citizens had rights which they either wished to increase or protect. This can be understood through the example of *stasis*, freedom to advocate change, in which Athenian citizens participated. This often took the form of political conflicts between oligarchy and democracy, within the oligarchic minority and within democratic factions. Eventually democracy prevailed by 508 BC when Cleisthenes, though an aristocrat, aligned himself with the popular Assembly and initiated political reforms called 'demokratia' by doing away with clan domination, instead basing political responsibility on individual citizens of a place by creating 'Demes'. Still, Athens' grant of complete equality to all before the law was elusive as ancient Athenians chose to use Chattel slavery.

Democracy and slavery, two conflicting systems, existing side by side may sound like an enigma but the fact was that slavery was an essential component of Athenian society when Athenians practiced democracy. This was the dark side of Athenian democracy and Athens was no utopia. As an example, an extract from 'Oeconomica', among the most important ancient Greek texts, ascribed to Aristotle might suffice. It states – '…of property…the best and most manageable is man… Therefore, the first step is to procure good slave'. The reasoning seemed to be that slaves were losers in the military conflict or that they were descendants, wives or children of those losers. This, however, was simplistic as an explanation for slavery to prevail in Athens. Generally, Athenians held the belief that citizenship offered them freedoms, but slavery was essential to experience these as it allowed them enough leisure time to attend Assembly meetings or hold public offices or to attend to philosophical, architectural pursuits or fight in wars or annex territories. The question as to how Athenians could establish, accomplish, and secure their great classical civilization has to be understood in this backdrop as slaves were deprived of liberty as Athenians progressed in democracy.

Chattel slavery was obiquitous in ancient Athens. Everyone, not just the aristocracy, warriors, thinkers, philosophers and the like, owned slaves in Athens. Reduced to being commodities, slaves were treated as the personal property of their Athenian owners who could buy, sell, lease, use and lent them like any other chattel, unlike the Helots in Sparta. Slaves had no control over themselves as they belonged to someone else. This was a common practice in Athens from the 6th century BC.

Chattel slaves were prominently non – Greeks in Athens. They worked in every sector of economy, saving Athenians from starvation and supporting the subsistence of agricultural and non – agricultural population in urban areas and the countryside. Their labour helped Athenian economy to develop rapidly. Slaves were found in every area of production, except politics meant for only citizens. No slave could hold public office or sit in the deliberative or judicial bodies even though they were regularly employed in administrative service to do routine work as clerks and secretaries. They also worked as policemen and prison attendants. Other activities saw slaves working as artisans, cutters and bedmakers, in craft workshops. They were also involved in commerce as tradesmen and sometimes served as banking agents. They also worked as bearers of tard and flute players, besides performing many menial tasks. In the domestic arena they were found as personal escorts, attendants, household managers. Two household industries of baking and textile making were in the hands of slaves.

Slave hierarchy had developed in Athens, for example there were public slaves meant for usage by all, some of whom found belonging to temples or helping offer animal sacrifices. The sweepers or usherers were also considered public slaves. It is said that there was even a possibility of social mobility among Athenian slaves. For instance, slaves serving as policemen could be upgraded as archers as happened in the case of Scythian slaves. Sometimes slaves were made to serve the hoplites as batmen. There was another category of slaves who could be labelled as freelance slaves. They did not live with their masters but worked for them in workshops or fields and also paid tribute from their produce or earnings, an unusual feature.

Athenian slaves were majorly employed in agriculture. It was not that the slaves outnumbered free men in agriculture but slavery dominated agriculture as the bulk of farming was done by slaves. In the wartime, slave labour provided sufficient resources to subsist without the Athenians worrying about agricultural production. During the Persian Wars Athenian aristocracy had acquired land on a large scale, leading to the demand for slave labour rising sharply on aristocratic land holdings. After the Peloponnesian Wars lot of Athenian landlords began to live in urban areas, while slaves managed cultivation on their fields, as if in a position of trustees. Through the classical era, an organised slave trade enabled the big landowners to get regular supply of slaves. By the time of Pericles, large number of slaves were employed in urban centres.

The largest investment by Athenians in slave labour was made however in mining and quarrying where the labour position was decisively one sided. There were Athenian freemen who leased out small mining concessions and were even able to work these alone. However, the moment additional labour was introduced, it was always of slaves. It has been suggested that in a given point in time there may have been as many as 30,000 at work in the silver mines at Laurium and the silver processing mills. This, it is stated, was the most prized slave investment for Athenians assuring the upkeep of the citizenry.

The condition of Athenian slaves, Scholars suggest, was not completely wretched so far as their treatment by Athenians was concerned. The contemporary writer Demosthenes informs that the slaves were held in high esteem in Athens. The owners' treatment towards them has been characterised as mild. They had the licence to move around freely. Some owners treated their slaves as family members, welcoming them with ceremony in their households and even allowing them to be buried in their family tombs, as a testimony perhaps to the loyalty shown by the family's slaves. Some slaves were also allowed to accumulate personal wealth i.e. they were paid for certain tasks, while religious freedom was

also allowed as slaves could form religious associations of their own. Moreover, slaves were protected under the Athenian law. For example, if a slave killed his master for harsh treatment, he had to be treated like a citizen and handed over to a magistrate, his master's family could not punish him. In case of violence inflicted by the master on the slave, the slave was to be exiled. Moreover, if a slave had just grounds for complaint, he could demand to be sold or transferred to another master. The right to emancipation with owner's consent could also be obtained and a slave could be proclaimed a freeman in the Assembly or the law courts or in the Agora during the life time of the master. There were other ways to be set free, for example by having his name inscribed in the public register. The freed slaves could be supervisors of slaves in agricultural fields or in the police etc. thus attaining better status.

A large number of scholars reflect on the positive attractions that Athenian slavery apparently depicted, most visibly its flexibility. It is argued that slavery was the driving force in the economy of Athens that helped maintain its society in which slavery and democracy appeared indivisible. Conversely, slavery helped the development of democracy in Athens. Servitude thus remained juxtaposed against the unhampered liberty of Athenian citizens. However, it is important to remember that in Athens slavery remained an expendable force in the perception of Athenians. The more democracy functioned, the sharper became the contrast between the free citizens and unfree slaves. Athenians venerated their slaves kindly as well as cruelly.

Historians insist on the paucity of available evidence to explain the condition of slaves from their own perspectives. Yet, scholars argue that slave concentration was large in Athens and slaves did not have any rights, civil or human. Even if Athenians felt, unconsciously, that slavery was inhuman, few questioned its rightness. In Athens slavery was taken for granted and no one considered it a cruel act that had to be abolished. Anti – slavery thought of Athenians can be understood when it is considered that slaves were routinely tortured. The slave owner could beat his slave for different reasons whenever he

wanted, indicating that kind or cruel treatment of a slave was dependent on the master's will or even personality. We are told that most slaves were required on an average to complete at least 250 jobs in a day. If the slave failed to fulfil the expectation by the end of the day, the master would often times whip him. According to scholars there are references in Aristophanes' comedies to tortoise like backs of slaves, hardened perhaps by repeated whippings. Significantly, failure to perform duty to the master by a slave could lead to his prosecution.

Arguably Athens gave most freedom to its slaves claiming to be democratic, however, the pertinent question needs to be asked – to whom were the privileges available? Slaves enjoyed little legal protection in actual life. They were barred from pleading in the courts. Moreover, the testimony of a slave was not admissible, except under torture which they faced in trials, being forced to accept guilt for a crime not committed by him or for remaining loyal to his master who was indicted. Similarly, if an owner killed his slave, he was said to have conducted an act against gods. But his guilt and stigma could be removed by performing purification rites in temple. And most Athenians showed contempt for those slaves who pursued manual labour. There were other restrictions. Athenian slaves not only lacked political and, legal rights, they could also own no land. The slaves, however, were defined as people who couldn't say what they wanted to.

Significantly, some contemporary literary accounts depict that casual brutality against slaves was exercised. Aristophanes comedies, it is told, were full of jokes reinforcing slavery with physical vulnerability. Anti – slavery thought was also found in the manner in which Athenians desired to maintain barriers between slaves and citizens, particularly when slaves were found to impersonate citizens, claiming themselves to be free. Though Athenians did free slaves, but skilled artisans were more likely to be able to buy their freedom than agricultural or mining slaves. Emancipation was certainly not the reality for most slaves as gaining freedom required a vote of at least 6000 citizens in the Assembly.

It is said that there are no examples in Athens of slave rebellions. Contemporary

writers associate revolts with helots of Sparta but not with *doulos* in Athens. It is possible that the different foreign origins of Athenian slaves and their dispersal in a scattered manner and different types of occupations perhaps undermined the potential solidarity being formed to revolt against the Athenian state. But Athenian slave owners faced other forms of resistance. There was the factor of runaway slaves and an estimated 20,000 slaves did run away in war time after 413 B. C. To contain such acts, Athens built stone towers to keep watch on possible runaways or rebellious slaves. Unusually, Athenians kept strong controls on ex – slaves too, as freed slaves still owed obligations to their former masters. So, the freed slaves were not truly free.

Athenian thinkers reflected on slavery and desired control over slaves. Plato, complained against harshness towards slaves but also encouraged feelings of contempt towards them. The Epicurian school of thought, too, had no scruples about slaves whose labour, it held, contributes to the tranquility of the city state. Aristotle, of course, held slavery to be natural and necessary. So deeply ingrained was slavery in ancient Athens, contributing greatly to Athenian economic and military success as also to ultimate accomplishments of Athenians. Slavery was a necessary institution in the civilised life of Athens.

Slavery was more peculiar in Rome as Romans developed slavery to such greater extent that it became a deep - rooted Roman institution. Scholars make approximate estimates of the number of slaves in the ancient Roman world. It is argued that at least 30 to 40 percent of Italy's population comprised of slaves and some 10 to 15 percent in the entire Roman empire. According to estimates made from 225 BC to 43 BC, though the number of free Romans remained static, or even declined, the number of slaves continued to rise from 600,000 reaching to 3 million. In antiquity, in no society of human history did the use of slaves attain such high magnitude. According to some scholars, Rome was not just a society with slaves, but it was a slave society.

The availability of slaves was not difficult for Romans as the massive wars of expansion and frequent military campaigns after 300 BC led to capturing of war prisoners and placing them at the disposal of Romans. The wars from Alexander's invasion to the battle of Actium, between c. 150 to 31 BC, had provided ample opportunities for the Romans to acquire land in Italy, Spain, Gaul and North Africa where they distributed landed estates as Latifundias. This opened up unimaginable prospects for the expansion of slavery. It is suggested that it was in the Roman Latifundias that slavery reached its fullest development. However, wars became fewer after the establishment of Pax Romana and particularly between the reigns of Augustus and Trajan. Still, the supply of slaves continued to be augmented as pirates and military adventurers remained active to obtain slaves on the periphery of the empire. Their favourite targets were the tribes inhabiting the areas around the Black Sea.

Like the Greek Athenians, Romans practiced chattel slavery. They recognised their slaves as personal property which they could sell, buy, bequeath, transfer or mortgage at will, making use of slave marts where slaves were displayed and auctioned. In late Republic, Rome was flooded with slaves. It was the time when Roman state began to permanently conscript adult Romans and thus made their slaves to man the economy and production. Roman slaves were found so much distributed all over and in a variety of jobs and activities that it is difficult to make generalisations. Nonetheless it is stated that slaves were found to be numerous in agriculture, urban trades, domestic arena and in mining, although in Rome mining was less significant than in Athens. Besides, slaves served in the municipalities, they existed as public slaves, and other categories included Emperors' Imperial slaves while ordinary slaves were held lowest in esteem.

As a mode of production slavery in Rome was more methodised and far more extensive than Greek slavery. A look at the distribution pattern of slaves in the economy and society of Rome explains why and how Rome was a slave society. Contemporary authors like Varro and Cato discuss that slaves were preponderant in agriculture. Individual farms employed some dozen slaves as farmers and agricultural labourers. It were however, the big landed estates, the Latifundias, where slavery was consolidated with the employment of both

skilled and unskilled slaves who worked in large gangs of hundred or more slaves. Latifundias, the basis of Roman agrarian economy, presented a picture of increasing employment of slave labour by the aristocrats, the Patricians, who were amassing landed wealth through the course of Roman war victories, besides grabbing *agar publicus* or common land that belonged to the entire Roman citizenry, including the plebeians. Other than arable land, slaves also served as herders in the agricultural sector. It is argued that the Roman aristocracy derived huge surplus from the labour of slaves and became fabulously rich.

In Rome, slavery was an acceptable accompaniment of economy and society. Domestic slavery was the characteristic of very wealthy households. They also possessed more slaves than ordinary Romans. We are told that both male and female slaves ministered to the varied demands and needs of their master and his family. Similarly municipal slaves working as messengers, deliverers, guards and porters were mostly attached to great librarians or physicians. Likewise Imperial slaves seemed to enjoy advantages compared to ordinary Romans. Both, state owned municipal slaves and the emperor's slaves formed an important group. However, state owned slaves were meant for common usage as well, for example they were placed in purely menial jobs cleaning sewers and aqueducts. Other public slaves were employed in the service of magistrates as clerks, secretaries and also in the prisons and in temples. Romans also showed a bent to use slaves as representatives in the adjudication of property disputes. More importantly, some slaves were allowed to hold *peculium* and could open their own manufacturing unit. During the civil wars, in late Republic, slaves were beginning to be employed as keepers of workshop or boat rowers. Then under first emperors something like a professional bureaucracy was created to run the empire. Both slaves and ex – slaves were admitted as staffers. Also, many slaves and freedmen joined households and trades in the funerary and social clubs known as *collegia*. At the other end of urban services, slaves worked as spies, pimps, thugs and intriguers to loyal servants in the household.

Thus, as Rome expanded slaves performed all kinds of tasks and jobs, and in some cases tended to monopolise largescale production in rural as well as urban areas.

Slavery remained acceptable in Rome. At the peak of Rome's expansion greater need was generated for absorbing slaves and it is argued by some scholars that as slaves became prominent, they took pride in their work. There are contemporary authors like Cicero who reflect on the close relationship between some masters and their slaves in the context of skilled slaves who were useful to their masters. Specific references occur in historical studies from 1st century AD onwards about the Roman Law that protected, at least theoretically, slaves from abuse of their masters. Examples can be cited as that of emperor Hadrian who forbade gladiator shows, without the permission of a magistrate, for the entertainment of Romans. Similarly excessive brutality inflicted on a slave by master was to be treated in Roman law as equivalent to killing someone else's slave. In 4th century AD recourse was available to slaves with the masters' support against serious beatings.

Though there were limited legal controls against masters inflicting harsh treatment on the slaves, we are told that there were masters who operated as silent partners in small scale trades run by slaves or ex – slaves. Some slaves enjoyed higher status in the slave hierarchy, particularly skilled slaves employed as gang supervisors, bailiffs, on Latifundias. Some slaves were also accorded high reputation as outstanding artisans or administrative workers. In rare cases, a slave could form partnership with a free woman which could be treated as legitimate marriage once the slave became manumitted and became 'libertus'. Usually experienced or educated slaves were freed, but loyal service or good deeds or death of a master could also set the slave free. At times, Roman slave was also allowed to purchase freedom. The Roman law allowed a freed slave to make his own way of life and become an important member of his community, but with restrictions. For instance, a freed slave could not contest elections, could not rise to a high position in military and most of all he remained obligated to work for his master a fixed number of days in a year. For

some ex – slaves this proved to be a binding chain, as they still remained tied to their owner. For freed slaves there was nothing like enjoying full Roman citizenship. However, it was the urban slaves who received whatever advantages of being freed, but for the lowest category agricultural or mining slaves such life remained far-fetched.

Slaves in Rome remained vulnerable to control and ill treatment. Often acceptable treatment towards slaves turned to deplorable mistreatment, suggesting higher levels of abuse. Slaves were called "whipping posts" and violence by masters was commonly directed against them. The Roman law provided no respite as slaves remained bereft of any rights and were treated exclusively as property of the slave owners rather than as people. The Romans did not recognise any relations between slaves – kinship or familial. A freedman could not follow Roman political life or career. The treatment of agricultural slaves was pathetic at the most. Agricultural slaves were scattered on huge Latifundias, with slaves separated from their families, kins, ethnic groups and males separated from their wives and children. They were divided into slave gangs and dispersed widely. Worse, they were bound by chains particularly in the night or when not working, lest they escaped. Gang slavery was treated as comprising the lowest category slaves. Fugitive slaves remained a thorn for the Romans. Contemporary literary sources seem obsessed about runaway slaves. In such cases of flight of slaves, the owners invariably sought help from friends or associates to catch him often offering rewards through public pronouncements. The owner also engaged slave catchers in such situations. A slave otherwise faced personal chastisement to banishment from rural labour to mines or quarries. Slavery in the mines depicted a forced life of toil and drudgery, with constant existence in hazardous living conditions. A fundamental distinction of Roman slavery was that corporal punishment was restricted for the slaves who were quite often beaten, whipped publicly to overawe other slaves. Inhuman treatment far outweighed human expectations.

Though being a slave or ex – slave was a strong stigma, it is to be noted that in Roman view the status of ex – slave in particular was of "tasteless upstarts". There was thus a status dissonance in Roman society i.e. low in the eyes of one and allowable in the eyes of other. The values that Romans held were not to allow sympathy with slaves. They were divested of dignity to such an extent it is argued that they were not conscious of being human beings. Roman writer Seneca held the view that a slave would perform a better job if he was treated well than a slave who was poorly treated. Yet Romans commonly used the phrase, "as many enemies as the slaves". The Romans routinely complained that slaves do not work, that they randomly wander about the city's public entertainment areas. Other complaints included charges like stealing food and other items or indulging in vandalism. The fact was that most Romans feared and believed that there was constant danger of slave insurrection.

Such perceptions in Roman minds justified taking recourse to severest measures in self - defence. Slaves who misbehaved were beaten and whipped mercilessly in broad daylight to scare other slaves into submission. Some recalcitrant slaves were bashed up or burnt with iron and even put to death, regardless of the considerations of age or sex. On the latifundias, the Romans used and exercised the law of collective responsibility against their slaves. If a slave happened to kill his Roman master for treating him with harshness or inhumanly, the latifundists as slave owners put all slaves in the gang of the murderer to death. In other words, if a slave committed such a crime, then all in his company suffered the conviction. For such brutal treatment, slaves sought freedom either by escaping or by rebelling. We are told that few minor rebellions did occur in the Roman history, but they were typically considered less dramatic. As slaves killed their individual masters in defiance of obedience or loyalty. However, rebellions on large scale, or what have been termed as "slave wars", occurred in Rome in late 130s BC, also in 104 – 02 BC and again in 73 – 71 BC. These rebellions were a feature of late Roman Republic.

The Roman slaves made attempts to free themselves and the first slave war (136 – 132 B. C.) occurred in Sicily when a slave named Eunus, with the title given as Antiochus, killed his master and launched a struggle on the

Sicilian landed estates against the cruel oppression exercised by the Roman landlords. It is said that the Romans crushed the uprising. A second slave war took place in 104 – 102 BC. again on the island of Sicily, led by two slaves named Salvius and Tryphon who played a major role in mobilising slave support for their cause. The revolt lasted for two years before the defeat of the slaves. Another major uprising, considered as the most serious, was led by a Thracian slave named Spartacus, a gladiator. The Spartacus led resistance is termed as the third Servile War also called Gladiator War and Spartacus Revolt. It was started as a result of poor treatment that Spartacus and other gladiators received at the hands of the Romans. It began from Capua, in the region of Compania and soon spread to southern Italy. It is informed that Spartacus had an army of approximately 100,000 slaves behind him which overran and controlled most of southern Italy for two long years fighting their way to the entire length of Italian peninsula. But by the time Spartacus and his slave army turned back making efforts to reach Sicily in the south, the Romans had launched a large - scale military offensive under the commander named Marcus Licinius Crassus to suppress the revolt. Crassus succeeded in defeating Spartacus. The unsuccessful slave uprisings, revolts, once crushed resulted in slavery remaining an exclusive social formation in the Roman Empire.

Over all, slavery was a social and cultural feature of the Greco – Roman world. Its existence and thriving nature enabled Greeks and Romans to form classical civilizations and empires, despite their involvement in continuous battles and warfare. It is stated that the slaves prevented Greeks and Romans from starvation and thereby allowed the two cultures and their social foundations to be based on slave mode of production. It was the institutionalised form of slavery as helotry that allowed Sparta to remain oligarchic and assume hegemonic proportions in Greece. To Athenians, slavery allowed sufficient leisure to achieve new heights. The Roman expansion, and the glory that was Rome, could not have been possible without slaves. Slaves too resisted, sometimes rising in open rebellions threatening the established order.

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LEGAL LANDSCAPE OF INSOLVENCY AND BANKRUPTCY IN INDIA

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ABSTRACT

The inability to pay obligations by a company or an individual is named as bankruptcy. The failure to pay obligations could be either income bankruptcy or monetary record indebtedness Independent of the monetary setting, the scarcity of assets whether current or unforeseen, can result into pronouncing, in the event of an individual wiped out or if there should arise an occurrence of an enterprise. A decent indebtedness and IBC code adjusts the three interests: (I) to adequately restore the undertaking and help advance the interest of the account holder in his business; (II) to ensure the interests of the loan bosses who have provided credit and (III) the future lenders who might probably partake in the business. It is hard to build up an overall set of laws wherein the interests of both the indebted person just as the lender are expanded. With the appearance of the new Insolvency and Bankruptcy Code, 2016, India is moving into another worldview of monetary and monetary achievement, a period that started with the advancement of the economy in 1991. The arrangements of the Code have been executed in a staged way to impact a smooth progress from the past system, since the Code has not just redesigned the law on indebtedness and Insolvency and Bankruptcy Code 2016. With this as the background, this paper endeavours to contemplate the present and plausible future effect of the Code on the Companies Act, 2013, how both the resolutions will work in couple, and whether the current circumstance requires any progressions to be made to further disentangle the liquidation structure in India.

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Introduction

In India, the legitimate and institutional equipment for overseeing commitment default has not been as per overall rules. The recovery movement by loan specialists, either through the Indian Contract Act, 1872 or through extraordinary laws, for instance, the Recovery of Debts Due to Banks and Financial Institutions Act, 1993 and the Securitisation moreover, Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002, has not had needed outcomes. Basically, movement through the Sick Industrial Companies (Special Provisions) Act, 1985 and the wrapping up game plans of the Companies Act, 1956 have nor had the choice to help recovery for neither banks nor help reconstructing of firms. Laws overseeing solitary chapter 11, the Presidential Towns obligation Act, 1909 and the Provincial Insolvency Act. 1920, are practically incredibly old . This has hampered the sureness of the moneylender. Exactly when advance experts are unconfident, commitment access for borrowers is diminished. This reflects in the state of the credit markets in India. Ensured about credit by banks is the greatest portion of the credit market in India. The corporate security market is yet to make. In this setting Parliament organized Insolvency and Bankruptcy Code, 2016.

Usually, the essential drivers of monetary improvement are the level and nature of a nation's physical and HR, inventive progress and the idea of labor force similarly as the nation's degree of openness to overall trade. Regardless, it is at present all around recognized that a country's ability to grow furthermore depends essentially upon its level of commitment A well-working GDP means that improvement of the country and helps in attracting more unmistakable new hypothesis.

The Code is a comprehensive legislation "to consolidate and amend the laws relating to reorganisation and insolvency resolution of corporate persons, partnership firms and individuals in a time bound manner"

The difference in the Indian economy from being a permit raj framework to the current business-obliging target of new hypothesis has been an exhausting one. Vital to this illustration of conquering difficulty is the significant improvements made in the regulatory space with the new Goods and Services Tax and the Code as the indication of such undertakings. These way breaking establishments have been key in basically changing India's insight worldwide as a business-obliging environment. The Code is an exhaustive institution "to union and change the laws relating to revamp and obligation objective of corporate individuals, association firms and individuals in a period

bound way"; along these lines bringing it into force would typically be an inconvenient endeavor. The public authority has chosen to proceed in a careful manner to realize it, prompting plans in an arranged path close by the relevant rules and rules, and regardless, searching for accomplices' advantage for recommendations. Accordingly, while the Sick Industrial Companies (Special Provisions) Act, 1985 (SICA) has been dropped totally, the pertinent game plans overseeing winding up in the Companies Act, 2013 have been overseen in a startling way.

Certain parts have been completely blocked, while others have been liberally amended, even lessened to a skeletal style. Consequently, with the Code infringing into the working of the Act, conflicts between the two enactments, and ensuing disarray in their way of working is inescapable. This research has been undertaken with the following objectives

- Ascertain the adjustment in situation of law in the past Companies Act, 2013 preceding and after it was altered by the Code and its current working close by the Code

- Identify the conceivable lacunae in the current law which may be liable to abuse

- Suggest answers for fix the lacunae agreeably between the Act and the Code

Evolution of the Insolvency and Bankruptcy laws around the world

To cognize and separate the obligation and liquidation laws all throughout the planet, it is basic to grasp the verifiable scenery of the obligation and bankruptcy laws. The authentic scenery of recognize is likely just about as old as the recorded setting of mankind. Every country's obligation laws are gotten from the heaviness of a mix of „social exigency, moral conflict and political trade off. From the mid eighteenth century up until the mid nineteenth century, a man was alluded to be in similar class as his assurance. In Europe, the Romans even wrote a term fallitus thus fraudator (demolished in like manner a traitor) for an obliged individual ill suited to pay his commitments. Account holder's prison (a period limited guardianship in jail) was set up for a borrower who didn't fulfill his responsibilities.

From the last piece of the nineties, the kinds of corporate trains and prison sentences moving back started evaporating and the borrower was less and less presented to social shame. The advancement of associations all throughout the planet, changes in the credit structure, rehashing improvements of associations, filled in as components to depersonalize the obligation laws. From the mid nineteenth century and onwards, the moral disgrace skimming over being an obligated individual was eviscerated to it being a straightforward monetary dissatisfaction. Regardless, every country was making its own obligation and liquidation laws are that as it might, the setting against which the law was made was fairly distorted and not seriously clung to.

There was a noteworthy indiscreet in the attitude all throughout the planet to the upside of the borrowers. It was the hour of early industrialization and various people were venturing into the capital world. House costs, contracts, methods of overseeing cash of people ceaselessly flourished and peaked at critical and feasible levels. In a critical piece of the world, from Spain to California, low credit costs, delinquent advancing rules, and exorbitantly optimistic hypothesis had run far for a truly significant time-frame.

Features of a good insolvency law and attraction of foreign investment

A convincing bankruptcy structure will empower the recuperation of tries and moreover give a beneficial instrument to the liquidation of those undertakings that can't be traded. Such a system, by giving a particularly described and obvious arrangement for recovery of their commitment will moreover expect a fundamental occupation in help of plan of credit and interest of new pursuit.

Taking into account wide gatherings and experience got from the utilization of various liquidation authorizations all throughout the planet, the World Bank propounded the "World Bank Principles on Insolvency and Creditor Rights Principles" in 2005. A portion of the critical highlights of a decent indebtedness law set out in these standards include: (a) Compatible credit framework upheld by proficient and dependable strategies for obligation authorization system;

(b) Admittance to finish, exact and solid data concerning the borrower's instalment history;

(c) Solid organizations and guidelines;

(d) Straightforwardness and great administration; and

(e) All around characterized and unsurprising danger distribution rules.

Legal Landscape Of Insolvency And Bankruptcy In India

1. Companies Act, 2013: Modified or mutilated by the Code?

With the sole exemption of SICA, the Code had the best effect on the Companies Act, 2013 under Schedule XI to the Code, which rolls out 36 improvements to the Act. While analyzing these arrangements we look to answer whether the Act has been altered in a proficient way or whether it could have been completely overlooked. These arrangements accept essentialness since their extension is huge and applies to a wide range of organizations, while SICA explicitly applied uniquely to modern organizations.

Part XIX looked to get the idea of "infection" from SICA as a beginning stage to start corporate salvage whereby the organization neglects to pay half or a greater amount of its remarkable measure of obligation inside a time of thirty days of administration of notice of interest. Truth be told, the Bankruptcy Law Reform Committee (BLRC) has viewed Chapter XIX as an improvement over recent SICA (highlights, for example, more noteworthy lender contribution in recovery, no programmed ban, leaser's assent for endorsement of plan, arrangement of heads as troughs of the organization; make it essentially better than SICA, yet recognizing that the arrangements require not many meaningful changes and institutional changes.) Any application for deciding an organization as debilitated could be made by either the made sure about loan boss, or the organization itself, or a few different substances Section 253.

On assurance as a wiped out organization, any made sure about lender of that organization or the organization may make an application to the Tribunal for the assurance of the measures that might be received as for the recovery and restoration of such organization.

The whole Chapter XIX stands excluded by the Code, probably as the ambit of the goal plan under the Code is fundamentally the same as in nature to the restoration and recovery plot under this Chapter. Likewise, any stay that would have been conceded by the Tribunal to give reasonable open door for the recovery to occur under segment 289 has additionally been precluded taking into account the programmed ban under segment 14 of the Code. The Code likewise presented another meaning of "ending up" in area 2 (94A) whereby wrapping up methods ending up under the Act or liquidation under the Code, hence orchestrating the two rules. The Code additionally acquaints subordinate changes with the Act, for example, subbing the words "submits default inside the significance of area 271 (2) to pay the measure of his obligation or guarantee" with "submits default, inside the importance of segment 6 of the IBC, 2016, in regard of the measure of his obligation or cases" for setting off decrease of offer capital. On the other hand, embeddings words "outlet designated under this Act or the Code" in Section 77 (3) which recommends that unregistered charges will not be considered by the vendor or any lender.

Further, the Code also brings a gamut of institutional changes including insolvency professionals as the practitioners under the Code. Section 275 (2) of the Act which relates to Company Liquidators and their appointments has been harmonised with the Code to the effect that "any provisional liquidator or the Company Liquidator, as the case may, shall be appointed by the Tribunal from amongst the insolvency professionals registered under the Code".

The RDDB Act vis-à-vis the SARFAESI Act

Section 37 of the SARFAESI Act unequivocally spreads out that the arrangements of the SARFAESI Act are notwithstanding and not in disparagement of the arrangements of the RDDB Act. This suggests that Parliament planned both these resolutions to work amicably, which may appear illogical given that both these resolutions are for the security of the lenders. The convention of political race recommends that when two cures are accessible for a similar alleviation, the gathering to whom they said

cures are accessible has the alternative to choose both of them.

In Golden Weaving Mills Private Limited

Tamil Nadu Industrial Investment Corporation Restricted, the High Court of Tamil Nadu thought about whether the concurrence of cures under the RDDB Act and the SARFAESI Act falls foul of the doctrine of election. It was seen by the court for this situation that notwithstanding the commitment to reimburse, the borrower attempts, in situations where the acquiring is made sure about, to keep the edge and the estimation of the hypothecated resources so there is no crisscross between resource risk in the books of the bank or monetary establishment. It is the last commitment which the SARFAESI Act looks to uphold, and accordingly, the measures considered in area 13 of the SARFAESI Act are not resemble to the measures gave in the RDDB Act, since the cure under the RDDB Act is restricted to the recuperation of duty while the SARFAESI Act approves banks and monetary foundations to collect or assume control over administration too. The SARFAESI Act is, along these lines, treated as an extra solution for the one accessible under the RDDB Act, and the two are free to one another. Together, the two comprise one cure and it is in this manner not fundamental to pull out an application before the DRT preceding taking the plan of action under the SARFAESI Act

Apparently an endeavour has been made under the Code to disentangle the intricate structure of law depicted above and deny all procedures under some other law while the goal cycle is underway. The required ban pondered by the Code restricts, entomb alia:
(a) The establishment or continuation of suits or procedures against the corporate account holder; and

(b) Any activity to dispossess, recuperate or implement any security premium made by the corporate borrower in regard of its property including any activity under the SARFAESI Act.

Obviously the methods under the RDDB Act and the SARFAESI Act would conclusively fall inside the ambit of the previously mentioned and remembering that the objective cycle is in progress, banks would not be permitted to recover their commitment before other for. The Code seems to support the leasers to join the total obligation objective measure rather than start solitary exercises. If the objective arrangement is embraced by the settling authority, the banks would be restricted by such plan and by idea would be obstructed from beginning methodology under the RDDB Act or the SARFAESI Act. Nevertheless, if the objective arrangement isn't confirmed and liquidation methodology start, the ensured about banks have the option of carrying out the ensured assets according to the law relevant to such security premium.

It is significant that there is little clarity on the law proper to such prerequisite and whether upon such execution, the game plans of the SARFAESI Act can be called. The update made to the SARFAESI Act making it subject to the Code is simply concerning approval systems in cases of assets financed by more than one advance chief and doesn't make the whole of region 13 of the SARFAESI Act subject to the Code. Any wealth wholes recovered by such credit managers would be should have been offered to the power source. These game plans are an essential introductory advance to ensuring consistency in cycle and moreover offering inspirations to banks to join the total obligation objective measure rather than start particular exercises.

2.

Interaction Between The Code And The Act: Possible Lacunae And Loopholes

This part will hope to address the request concerning what sort of conflicts may arise between the Act and the Code once both of them begin working. Any relationship between the Code and the Act can be unquestionably bifurcated into two circles, one which relates to brief periods which would observer be able to confusion over the approaching cases with respect to which conversation will parley and as shown by which goal. Also,second relating to conflicts that may emerge from a consistent and conjoint working of the two goals. From December 15, 2016 onwards every methods under the Companies Act, 1956 relating to wrapping up where the allure has not been served on the respondent was moved to the NCLT. At any rate there is a differentiation between the wrapping up cases started due to

inability to pay commitments and something different. In the past, the cases will be treated as application to begin CIRP under the Code. While in the last cases, they will be treated as wrapping up cases under the Act. Further, any wrapping up began under game plans of SICA – which used to propel wrapping up cases to the High Courts – will continue being overseen by the High Courts as per the courses of action of the Companies Act, 1956.17 This presents a broke framework, since there is degree of covering of ward in occurrences of different petitions being continuing under the past exhibits. At any rate as these game plans are of a short lived sort, the augmentation for solid delays is irrelevant. As of now, portion 11 (d) of the Code bars a corporate record holder in respect of whom a liquidation demand has been created utilizing making an application to begin CIRP under the Code.

Conclusion

Through this assessment, an undertaking has been made to expect and foresee the potential conditions where the Code and the Act may exist together and cover. The result that emerges is virtual incomparable nature of the Code inverse the Act. This makes one miracle that when the Code was proposed to be a general sanctioning covering the entire expansion and an extensive code on the subject of obligation comparing to corporate components; why were the game plans of Chapter XX of the Act held. While the previous parts have attempted to offer nuanced responses for this corundum, yet the overall result is that the fix gave in Chapter XX is essentially less compelling, and subordinate to the one under the Code. While a conflict could be made that Chapter XX is proposed to give certain prohibitive powers to the corporate obligated individual by notwithstanding the bank totally, this dispute renounces reality that the corporate borrowers themselves have been leaning toward the Code. Of the 148 cases certified so far by the NCLT under the Code, more than a third were begun by the actual defaulters

Hereafter, to react to the central request of this assessment, one of the proposition would be a finished oversight of Chapter XX, to make a more slim and discerning legitimate methodology for obligation. Further, since

another order is being made for money related region substances (the Financial Resolution and Deposit Insurance Bill 2017), holding Chapter XX would be counterproductive when the Code would as of now have the option to give everything the Act can, yet in a more capable style.

Of course, more noteworthy clarity can be given on territory 271 (a), concerning what conditions can trigger it, and remove the opportunity of its maltreatment as a best approach around the pattern of deliberate liquidation under the Code. The maker further recommends that a waiver ought to be obliged stamp commitment for any union or blend proposed to encourage zeroed in on associations to get this as one of the mode under the objective arrangement under the CIRP. Notwithstanding the way that M&As will in general achieve a much successful and smoother result than other remaking modes; anyway they furthermore lead to more imperative public benefit, since the entire business would be fortunate to be a direct result of economies of scale, more conspicuous adequacy, etc

Moreover, banks should in like manner benefit by this waiver since any help for M&As would suggest that their commitments could be dealt with significantly speedier by the combined substance, and that the leasers would not have to expect the board or obligation regarding association in any obligation value exchanges. Finally, one proposition is empower the use of "plan obviously of activity" as one of the techniques for corporate commitment revamping (plans of approaches and deal are given under region 230 between the association and its people or moneylenders including any of their different classes.). At this moment, the strategy for commitment remaking in India is generally the distinctive non-legitimate plans dispatched by the RBI sometimes, the latest being Scheme for Sustainable Structuring of Stressed Assets. Oddly, the plans of plan obviously of activity are used primarily for corporate modifying, anyway hardly for commitment reconstructing. The BLRC perceives that plans obviously of activity for commitment reconstructing have been unsavory as a result of delays, gigantic costs, and holdouts by banks, yet can transform into a

convincing instrument for commitment remaking, perceiving at any rate that such restructurings can similarly be refined less authoritatively. The BLRC report further conversations about 'pre-packaged rescues' where the record holder association and its credit managers close a plan for the proposal of the association's business going before the origin of formal insolvency methodology. Indian law can see such an arrangement as a part of an arrangement obviously of activity.

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RESERVATION FOR EWS: STEP TOWARDS UNIFICATION OF SOCIETY

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ABSTRACT

After independence, the depressed classes which came to be known as Schedule Castes (SC) & Schedule Tribes (ST) were given constitutional protection, and affirmative actions were taken in their favor. By the virtue of Articles 15 & 16 caste based reservations were created and seats were reserved for them in parliament, state legislative assemblies, public employment and higher educational institutions for their advancement. Initially, these provisions were introduced only for a period of 10 years, but due to their continuing backwardness the reservation was extended through subsequent constitutional amendments and recently, 104th Constitution Amendment Act, 2020 extended these provisions for another decade.

IInd Backward Classes Commission, 1979 and ensuing Indra Sawhney judgment created another category known as Other Backward Classes (OBC). As a result, the Indian society has been divided into SC's, ST's, OBC's, Most Backward Classes, Unreserved categories, etc. India as a country has been witnessing serious divisive tendencies on the basis of religion, race, caste, dialects, etc.; to which the reservation policies act like adding fuel to the fire. The eminent jurist Nani Palkhiwala has also criticized the determination of backwardness on the basis of caste, as it will revive casteism which the constitution emphatically intended to end. In this study, the author has highlighted the void created in the society due to our current caste based reservation policies and how the reservation which is based on economic conditions of an individual can act as a bridge to fill this crack in our society. The study will be focusing exclusively on the reservation in educational institutions and matters of public employment. By abolishing all other types of reservation (in educational institutions and matters of public employment) and creating only EWS with appropriate mechanism to include/exclude the desired sections of society, a positive unifying trend shall be witnessed within different communities.

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Reservation for EWS: Step towards unification of Society

"You cannot build anything on the foundation of a caste. You cannot build up a nation, you cannot build up a morality. Anything that you will build on the foundations of caste will crack and never be a whole."
Dr. B. R. Ambedkar

Introduction

Social inequalities have been a part of almost every culture in the world. With increasing rationality, people started to question about these discriminatory practices and in order to compensate the injustice done to a few communities, the need for reservations emerged. But gradually, reservations became a very controversial topic with regard to its content and structure, as it gives preference to non-meritorious over meritorious candidates. 'Reservation', also known as 'affirmative action' or 'positive discrimination' has been defined as a set of policies of a government which aims to give certain preferences to the marginalized sections of a society with the objective of their upliftment and ultimately, their integration with the society. Caste-based reservations in India have formed an integral component of the agendas of all the governments, since 1902. Post-independence, our constitution contained provisions for the improvement of status of the marginalized sections of our society by providing them an equal opportunity on various fronts. What led to the marginalization of a few communities has been a subject of debate for decades now, but today the question that has become even more important is – How much progress have they made through the years? Have these communities integrated with the society? What is actually our reservation policy, its contribution and does it require a change?

Indian Reservation System

The current reservation system of our country has the following aspects:

- Reservation in *Lok Sabha*, State Legislative Assemblies, *Panchayat* & Municipalities-
- Providing reservations for SC/STs in the abovementioned bodies and giving them an opportunity to bring their issues forward, thus resulting in their political progress,
- Reservation of seats in *Lok Sabha* and State Legislative Assemblies was meant only for a period of 10 years as it was expected that the aforementioned communities will experience substantial development during that time (but subsequent constitutional amendments extended the duration of this provision – Article 334, as amended by 104th Constitutional Amendment Act, 2019 has extended this reservation for another decade, i.e. till 2030);
- Reservation in Educational Institutions-
- Art. 15(5) allows the state to make special provisions for the development of socially and educationally backward classes or for the SCs or STs, and also for their admissions into various educational institutions,
- Added to the Constitution via 93rd Constitutional Amendment Act, 2005;
- Reservation in matters of Public Employment including promotions along with consequential seniority[1]-
- Art. 16(4) allows the State to make reservation in favor of any backward classes of citizens, in matters of public employment, which are not adequately represented in the State services (whenever State decides to provide reservation there must be 2 prerequisites, *viz.*, "backwardness" and "inadequacy of representation" – if the State fails to apply these tests, reservation would be invalid),
- Reservation in promotions along with consequential seniority has been authorized by Art. 16(4A) (added to the Constitution via 77th Constitutional Amendment Act, 1995, to remove the hurdle created by the Supreme Court in *Indra Sawhney*[2]),

- Art. 16(4B) enables the State to break the 50% reservation limit, when making appointments for backlog vacancies,
- And Supreme Court has also observed that reservation is not a fundamental right[3] in appointments and promotions in public employment and clauses (4A) & (4B) of Art. 16 are merely enabling provisions and not mandatory[4], giving a mere discretion to the state.

How did the Other Backward Classes came into picture?

- I[st] Backward Classes Commission, 1953[5]-
- It was setup in 1953 under the chairmanship of *Kakasaheb Kalelkar,* and submitted its report in 1955. "It is pertinent to note that the Commission could not present a unanimous report. In fact 5 of its members recorded minutes of dissent. *Dr. Anup Singh*, *Arunangshu De* and *P. G. Shah* were opposed to the view of linking caste with backwardness. They were opposed to the reservation of posts on the basis of caste. *Kaka Kalelkar*, the Chairman, took a rather unequivocal stand on this issue. Though he did not record a formal minute of dissent, he opposed the acceptance of caste as the basis for backwardness in his forwarding letter to the President."[6]
- Consequently, its recommendations never materialized and government decided to appoint another commission in future.

- IInd Backward Classes Commission, 1979
- "Setup under the chairmanship of *B. P. Mandal* with the mandate to identify the socially and educationally backward classes (SEBC) of India, submitted its report in 1980. It had identified as many as 3743 castes as SEBC (52% of India's total

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[1] Consequential Seniority allows reserved category candidates to retain seniority over general category peers. If a reserved category candidate is promoted before a general category candidate because of reservation in promotion, then for subsequent promotion the reserved candidate retains seniority.

[2] Indra Sawhney v. Union of India, AIR 1985 SC 149

[3] Mukesh Kumar v. State of Uttarakhand, AIR 2020 SC 992

[4] M. Nagaraj v. Union of India, AIR 2007 SC 71

[5] In exercise of the powers conferred by Article 340, President may appoint a commission to investigate the conditions of backward classes.

[6] *Report of the Backward Classes Commission (Kalelkar), 1955*, Vol. 3 No. 2 **JOURNAL OF INDIAN SCHOOL OF POLITICAL ECONOMY** 337, 348 (1991), https://www.ispepune.org.in/PDF%20ISSUE/1991/JISPE 2/report-backward-classes-comission.pdf

population was declared 'backward') and recommended for reservation of 27% government jobs for them."[7]

- Apart from anti-reservation movements occurring all over the country, the critics have argued against the estimation logic used by the commission for determining the OBC population. Since, "according to an estimate drawn from the data compiled by the NSSO which functions under the Ministry of Statistics & Program Implementation – places their number at 36% (which was 52% according to the *Mandal Commission*) of the population and if *Muslims* are excluded from the estimate, the population falls further to 32%. This apart, the National Family Health Statistics – a survey conducted in 1998 by the Directorate of Health Services – has also estimated the *non-Muslim OBCs* in the country. As per statistics, India has 29.8% OBCs."[8]

Why should the caste-based reservation be done away with?

While discussing Article 16 in the Constituent Assembly, *Prof K. T. Shah* proposed an amendment in the provision, so that it would read as follows: *"Nothing in this Article shall prevent the state from making any special provision for women and children or for schedule caste or backward tribes, for their advantage, safeguard or betterment."*[9]

"However, Dr. Bhimrao Ramji Ambedkar was not in favor of this provision as he took the view that such a provision would result in further seclusion of SCs and STs resulting in a 'separate but equal' treatment, that was not in their interest. In the opinion of Ambedkar, the object which all of us have in mind is that the

general public, for instance, none of us, I think, would like that a separate school should be established for the SC when there is a general school in the village open to the children of entire community. If these words are added, it will probably give a handle for a state to say, 'Well, we are making special provisions for the SC.' To my mind they can safely say so by taking shelter under the article if it is amended in the manner the professor wants it. I therefore, think that it is not a desirable amendment."[10] Hence, it is evident from Ambedkar's stand that he didn't consider special provision for reservation, as it would lead to further segregation in the name of caste.*

"Once a caste is considered backward it should not be treated as backward for all future purposes. The government should review the test and if a caste reaches a state of progress where reservation is not necessary, it should delete that class from the list of backward classes."[11] On the other hand, what our reservation policy has done, it has created a class of communities which are experiencing 'perpetual backwardness'. For e.g., there is no room for exclusion of the developed communities under SC category.

Another outcome of the caste-based reservation finds its basis in the saying, 'agitation makes you eligible for reservation' because that is what the country has been witnessing since Mandal Commission. A few instances are as follows:

- *Jat reservation agitation in Haryana and Delhi-NCR[12]*
- *Gurjar/Gujjar agitation in Rajasthan*[13]

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[7] **DR. J. N. PANDEY, CONSTITUTIONAL LAW OF INDIA** 182 (Central Law Agency, 2020)

[8] Arun Anand, *What is India's population of Other Backward Classes?*, **INDO-ASIAN NEWS SERVICE** (May 24, 2007, 3:36 PM), http://in.news.yahoo.com/060524/43/64i2a.html [https://web.archive.org/web/20070627055815/http://in.news.yahoo.com/060524/43/64i2a.html]

[9] Mehbubul Hassan Laskar, *Rethinking Reservation in Higher Education in India*, 1 **ILI LAW REVIEW** 25, 32 (2010), http://www.ili.ac.in/pdf/article_2.pdf [https://web.archive.org/web/20120425081633/http://www.ili.ac.in/pdf/article_2.pdf]

[10] *Id.*

[11] State of Andhra Pradesh v. Balram, AIR 1972 SC 1375

[12] *Jat*, a dominant caste of *Haryana* demanding for OBC status. The movement turned violent in 2016 leading to many deaths and destruction of state property. It ended only after Government of Haryana enacted "*Haryana Backward Classes (Reservation in Services and Admission in Educational Institutions) Act, 2016*" – making them eligible for 10%, 6% and 4% reservation in Class 3, 2 and 1 jobs respectively.

[13] *Gurjar/Gujjar* community demanding reservation and ST category status since 2008 – protesters indulged in violence, which resulted in many deaths and burning down a police station and few buses. The movement ended after *Rajasthan Legislative Assembly* enacted

- *Marathas in Maharashtra (a dominant community in the state demanding for OBC status, despite the fact that out of 19 CMs of the State, as many as 10 have been Marathas[14])*
- *Kapu community of Andhra Pradesh[15]*
- *Patidar/Patel reservation agitation, Gujarat[16] (started in 2015 when Patidar/Patel community demanded OBC status – violent clashes erupted, 12 died,[17] 230 injured, more than 200 vehicles were reduced to ashes and a loss of Rs. 214 crores[18])*

In this context, R. L. Chaudhari has observed, "Regarding the caste & reservation policy, it can be said that the privileges attached to castes have encouraged casteism since caste is proving very beneficial to the person belonging to the backward caste. Thus, the reservation policy, instead of removing the caste distinctions has maintained and has encouraged social tensions which retard process of social integration. It has also created obstacles in achieving the object of classless society in India."[19]

"Rajasthan Schedule Caste, Schedule Tribe, Backward Classes, and Economically Backward Classes (Reservation of Seats in Educational Institutions in the State and of Appointments and Posts in Services under the State) Act, 2008" – providing them 5% reservation and 'special backward class' status.

[14] Priyanka Kakodkar, *A Quota for the Ruling Class*, THE HINDU (July 1, 2014, 02:48 AM), https://www.thehindu.com/opinion/op-ed/a-quota-for-the-ruling-class/article6163911.ece

[15] The Kapu Community was protesting to get an OBC status, gradually turned violent and set on fire trains, government vehicles and police stations.

[16] The movement ended after passing of 103rd Constitutional Amendment Act, 2019

[17] Himanshu Bhatt, *Kin of 12 Patidars killed during quota stir to get Rs. 3 lakh aid*, TIMES OF INDIA (April 2014, 2016, 07:52AM), https://timesofindia.indiatimes.com/city/surat/Kin-of-12-Patidars-killed-during-quota-stir-to-get-Rs3-lakh-aid/articleshow/51819852.cms

[18] Hiral Dave, *Anandiben Patel hits out at Patidar Quota agitators, invokes caste riots of past*, THE INDIAN EXPRESS (September 18, 2015, 04:34AM), https://indianexpress.com/article/cities/ahmedabad/anandiben-patel-hits-out-at-patidar-quota-agitators-invokes-caste-riots-of-past/

[19] R. L. CHAUDHARI, CONCEPT OF SECULARISM IN INDIA CONSTITUTION 184 (Uppal Publication House 1987)

Therefore, till the time caste-based reservation is alive the governments will have no choice except to bow down to the demands of the agitating caste. And by no means, we should be blaming the agitating castes, since they are just trying to derive few benefits out of an already broken system. The policy of 'reservation after agitation' has become similar to a Pandora's Box and will encourage other castes as well to opt for this maneuver.

The system which was created with an idea to integrate the backward classes with others is out of order now, and is in an irreparable state. From time to time, political parties have manipulated the people to develop casteist tendencies in order to fulfill their own desires. In these circumstances caste-based agitations are going to be the new normal and the relevance of principles like 'unity', 'integrity', 'fraternity', etc. shall remain a far-fetched dream.

Reservation for the EWS

In context of the situation discussed above, an alternate solution is required which does not link the 'caste' and 'backwardness' and challenges the main cause of discrimination, i.e., poverty. For this reason, let us evaluate reservation based on the economic status of an individual and why it is a better alternative to caste-based reservation.

Discrimination is always done against the destitute, notwithstanding the religion, race or caste he belongs to. For instance, it is just impossible to discriminate against an individual belonging to SC, ST or OBC category posted as a District Collector, President of a country or who is a millionaire. On the other hand, it is totally possible to discriminate against a member of upper caste involved in the activities of manual scavenging or working as a sweeper – capitalism has its own privilege, it can make the world go round. In January 2019, 103rd Constitutional Amendment Act was passed adding Articles 15(6)[20] & 16(6)[21] to our Constitution. The

[20] Nothing in this article or sub-clause (g) of clause (1) of article 19 or clause (2) of article 29 shall prevent the state from making,-
   a. any special provision for the advancement of economically weaker sections of citizens other

amendment aimed to provide 10% reservation to the Economically Weaker Sections of the Unreserved Category in higher education and public employment. The current definition of EWS stands as[22]:

- "persons who are not covered under the scheme of reservation for SCs, STs and OBCs and whose family has gross annual income below Rs. 8.00 *lacs p.a.* are to be identified as EWSs for benefit of reservation. Income shall also include income from all sources i.e., salary, agriculture, business, profession, etc. for the financial year prior to the year of application

- also, persons whose family owns or possesses any of the following assets shall be excluded from being identified as EWS, irrespective of the family income:

i. 5 acres of agricultural land and above;
ii. residential flat of 1000 sq. ft. and above;
iii. residential plot of 100 sq. yards and above in notified municipalities;
iv. residential plot of 200 sq. yards and above in areas other than notified municipalities"

Though, reservation for EWS seems to be a positive initiative towards a caste-less society, it has also faced criticism. It has been alleged that there is no sound rationale behind determination of the annual income limit (8.00 *lacs*), and also the limit fixed is so high that 98% of those who file their IT returns fall under this category.[23] Also, it has been contended that reservation for EWS is violation of the Supreme Court judgment in the *Indra Sawhney* case.[24] But, the important aspect is that it aims to dissociate backwardness with caste and eliminates the main cause of backwardness and discrimination, *i.e.*, poverty. Also EWS reservation does not seem to be unconstitutional as it derives its validation from Art. 38(2).[25] Hence, how can one expect from caste-based reservations to remove economic inequalities?

The present EWS reservation includes only the unreserved category. Hence, what is required is that instead of reservation for:

- Schedule Caste,
- Schedule Tribe,
- Other Backward Classes,
- Most Backward Classes,
- Special Backward Class,
  - Muslims[26],
  - Christians[27], etc.,

there should be only one category of reserved class, *viz.* economically weaker section, which will include an individual who falls below a particular income level and is unable to have a life with basic necessities because of his/her economic status, and not because of his/her caste. A little time should be

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than the classes mentioned in clauses (4) and (5); and

b. any special provision for the advancement of any economically weaker sections of citizens other than the classes mentioned in clauses (4) and (5) in so far as such special provisions relate to their admission to educational institutions including private educational institutions, whether aided or unaided by the State, other than the minority educational institutions referred to in clause (1) of article 30, which in case of reservation would be in addition to the existing reservations and subject to a maximum of ten percent of the total seats in each category.

[21] Nothing in the article shall prevent the State from making any provision for the reservation of appointments or posts in favor of any economically weaker sections of citizens other than the classes mentioned in clauses (4), in addition to the existing reservations and subject to a maximum of ten percent of the total seats in each category.

[22] Government of India, Ministry of Personnel, Public Grievances & Pensions (January 31st, 2019) https://dopt.gov.in/sites/default/files/ewsf28fT.PDF

[23] Avinash Kumar, *The Moral & Logical Failures of the Proposed 10% Quota for EWS*, **THE WIRE** (February 7, 2019), https://thewire.in/government/10-percent-quota-ews-narendra-modi

[24] Indra Sawhney v. Union of India, AIR 1985 SC 149; Despite the fact that Supreme Court has in its Indra Sawhney judgment expressly prohibited a reservation based on economic criteria, the 103rd Constitutional Amendment Act, 2019 which provides for reservation for EWS, has been referred to higher bench to determine its constitutionality.

[25] Article 38(2) - The State shall, in particular strive to minimize the inequalities in income, and endeavor to eliminate inequalities in status, facilities and opportunities, not only amongst individuals but also amongst groups of people residing in different areas or engaged in different vocations.

[26] In the states of Tamil Nadu, Kerala, Andhra Pradesh Telangana, etc.

[27] In the states of Tamil Nadu, Kerala etc.

given to this reservation system to evolve and construct a caste-less society.

Benefits of reservation based on the economic criteria are as follows:

• The most secular form of providing the benefits of reservation without considering the religion, race, caste, creed, etc. of the individual;

• It will completely discourage the communal tendencies prevalent in our country which are undoubtedly at an all-time high at this point;

• Most of those who derive benefits out of the caste-based reservation system are no different than the non-reserved category in their economic status – as a result, rise of friction among the latter, whereas, a system based on economic criteria would never give birth to this friction;

• It will automatically allow the transgender/*kinnar* community to derive benefit from this reservation since the government will not have to go an extra mile to give them separate reservation;

• It will put an end to the "eternal backwardness" of a few communities, which is certainly a result of our current reservation policy and start a new cycle where the people who have achieved a substantial level of progress will not be considered eligible for reservation;

• As compared to the caste-based reservation, reservation based on the economic level/status will give a measurable result, where the upliftment of society can actually be quantified.

Conclusion

There are still people out there who are downtrodden, who are standing last in the line, without any opportunity, people who actually need reservation to survive and to be hopeful of their future. But that 'backwardness' is not due to the caste they belong to, in fact, it is due to the lack of money in their pockets and bank accounts (if any).

Hence, reservations are important, subject to the fact that the desired section is subject to it.

In our country with 22% of its population living below poverty line[28] we need a reservation system which is based on the economic condition of an individual, rather than his/her caste. It is also true that Indian societal structure is very weak. Every issue around us takes a communal angle and in such circumstances these caste-based reservation policies act similar to adding fuel to the fire. Thus, a solution is required which does not deprive the marginalized section of its opportunities and simultaneously reduces the animosity between various groups of our society. As a result, the reservation for EWS seems to be a better alternative.

And as far the current reservation system is concerned, it will be apt to say that any system that is not open to change and is incapable of change is a system that is meant to die and wither away regardless of who is its author and where it comes from.

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[28] Reserve Bank of India (September 16th, 2013), http://www.rbi.org.in/scripts/PublicationsView.aspx?id=15283
[https://web.archive.org/web/20140407102043/http://www.rbi.org.in/scripts/PublicationsView.aspx?id=15283]

NEW STRATEGIES AND TOOLS FOR MAKING INCLUSIVE SOCIAL, ECONOMIC AND JUSTICE

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ABSTRACT

We all are familiar with our Constitution "The Constitution of India" which is the supreme law in the country and even often termed as the mother law of nation. The constitution has guided us at each and every step of developing a welfare society and developed the framework for establishing political, government structure procedure and even define powers for smooth functioning under democracy. It has also set sorting parameters for the citizens and people in the country by making them aware of their Fundamental Rights along with restrictions simultaneously giving certain fundamental duties to be fulfilled by the citizen for the country. India is enjoying 71st year of excellent operationalization of Indian Constitution. Till date it has well balance the aspect of justice to all its people even during the state of developing nation. Now we have to see to what extent we are able to provide social economic and political justice to further technologically advancing society. The constitutional framers have very wisely defined the functions of implementation of constitutional democracy by three pillars/organs of constitution the legislative organ, the executive organ and the judiciary.

Keywords: Constitution, Justice, Preamble, Fundamental Rights, Laws, Social, Economic and Political.

Introduction

The constitution of India firmly promotes the principles specified under preamble of constitution the principles of Liberty equality fraternity and justice. Constitution also promotes strongly the principles of human dignity and principles adopted through various human rights conventions across the globe. There is a question commitment by the state to promote equality and non-discrimination on any of the grounds specified under various provisions of constitution the constitution even makes it mandatory to protect and promote freedoms and rights given to the people and citizens of the country. The legislative is responsible for law making and the executive is implemented the law made for the citizens and wellbeing of society on the other hand judiciary keeps a close watch on the implementation and law making, that it is not infringing the rites given to the people of the country. Judiciary at times even play a crucial role under judicial activism and judicial review so that there is no arbitrary use of power by the government or state. All three pillars are continuously working for advancement and developing a welfare society taking special attention on safety of its citizens. The preamble to the constitution also highlights the intention of Constitution by securing to all its citizens justice which is equally given to equals for social economic and political grounds. Paper research aims to highlight the imbalance in terms of social economic and political life of people and provisions under Constitution reducing this imbalance. Researcher tries to bring to the knowledge the various tools and strategies adopted by modifying existing laws and implementing new laws in society to overcome the injustice and create just society for all.

What is justice in terms of social, economic and political rights

Justice is a term which is not define under the constitution of India but it holds to be a very essential element behind each and every provision covered under law. Justice means no discrimination among citizensin developing a harmonious society.

Social Justice is one of the founding stones in all the provisions specified under Indian Constitution. Social justice is a wider term which involves aspects of economic justice and political justice. Social justice means equal treatment of all citizens without any discrimination based on caste, religion, colour etc. Social justice clearly States to bring equality emphasizes on removal of privileges to any particular section of society. It is the feeling of oneness to be maintained with changing time, circumstance, culture,

technological advancement and goals of citizens of India.

Social justice may be studied under two contexts

• Sustainable livelihood with economic stability: it promises to give shelter clothing food development modes, employment education good health and other facilities which are required for are necessary for all round development of an individual.

• Political justice or political equality: it means people are empowered by bi-rite which are covered under various provisions of constitution like fundamental rights and adult suffrage. These rights give power to political justice by allowing people to elect the government and even to be part of government by taking government services.

Therefore,we can say that justice is based on following essential elements:

1. Justice is based on values and tradition of the developing society.

2. Justice is related to person living, involved in society and on human behaviour of group.

3. Justice aims at providing equality to equals.

4. Justice has a function to harmonis the interest of every individual with society.

Dalmia Cement (Bharat) Ltd. V. Union of India (1996) 10 S.C.C. 104.

Justice as a result strengthens the three pillars of constitution by increasing unity among its people. Provisions related to justice are covered under following articles in Constitution of India for Social justice it is attained by :

• Removal of untouchability

• Every citizen given equal rights at all public places

• State cannot discriminate between citizens on ground of caste, colour,race, decent and place of birth

• Equal employment opportunities for all citizens

• Prohibition on child labour human trafficking and bondage labour

Economic Justice is attained by: -

• Citizens to get fair wages to satisfy their basic needs

• Economic opportunities to an adequate living for citizens

• State to take responsibility of economic security during illness, old age or in case of differently abled citizens.

Political Justice

It means giving right aptitude and equal political rights to citizens to participate in information of government and to form government by taking part in administration of country.

Political justice also helps in formulation of just law and to be just according to laws.

Constitutional provisions which promote political justice are adult suffrage, right to contest election, enforcement of laws. Political justice also so high tops the rule of law which means that no person is above law. Hence, we can say rule of law is supreme and not rule of any person to govern a country. Thus Political justice aims to establish what is

• legitimate

• provides legal security and

• prevent abuse of laws

Strategies and tools for implementing social justice to citizens

The Constitutional framers have done the excellent work of strengthening the Constitution by various provisions and at same time by giving flexibility by giving liberty of amendment. But with the developing society in all aspects the effective form of social justice may also be developed and it should not be the only responsibility of lawmakers or law enforcing agencies to create just society but now the youth of India also needs to take the responsibility of creating a harmonious and just society for all the citizens. With speeding modernization, technological advancement, development of scientific attitude in law making, law framing and even in law application for their own benefit

The youth must:

• Participate in decision making of government

• Actively involved youth needs to develop critical thinking aptitude and analyse the post and pre-effect on society.

• Active participation must be promoted in open forum, debates, discussion with co workers/colleagues in empowering information.

- Get involved in country services, increase communication in society, volunteering in organisation for a cause.
- Youth which are at influencing position like that of educator's and media personals mast hold the lamp to enlighten the aware citizens. To promote unbiased thought process to learners through them.

After all social justice is not satisfying only one individual but it is strengthening the society overall.

Leading case laws related to social justice

The concept of social justice is an integral part of Constitution and assumes to be involved in the Doctrine of Basic Structure of Constitution which cannot be amended or removed from Constitution. In case of S R. Bommani court held that social justice and judicial review is part of basic structure of Constitution of India.

- In case Meenakshi Mills, Social justice is covered under various articles of Constitution viz article 14 -17, 19- 21 fundamental rights, under article specified for Directive Principles of State Policy (DPSP) which theory emphasizes on application of philosophy of social justice. Even preamble declares to grant to its people justice of social economic and political.
- Social justice is genus and its species are economic, social and political justice. The all aim to reduce suffering of needy/ weaker/ deprived individuals/ sections of society, together work to empower, come on equality e which is enjoyed by others and give life of dignity.
- Under case Sadhuram Supreme Court held that fundamental rights are respiration and reflection of imparting social justice through Constitutional provisions.

DPSP covers article 38 which makes duty of state to make all efforts for promoting welfare of people of state similarly article 44 promotes uniform civil code to uplift citizens from caste and religion barriers and to adopt equal law for all.

Judiciary has also made all efforts to impart social justice in society, this may be observed in various judicial pronouncement, judicial review, judicial activism. Through this effort to ahuge extent the imbalance in the society had been reduced.

2. Keshvananda Bharti v. State of Kerala, A.I.R. 1973, S.C.1461.
3. S.R. Bomani v. Union of India,A.I.R 1994, S.C. 1918.
4. (1992) 3, S.C.R. 33
5. Sadhuram v. Pullin Behari, A.I.R. 1984, S.C 582.

At many instances the apex court have directed government to adopt and implement the philosophy, principles of social justice in every sphere of democracy and date today administrative actions:

1. Against torture: Sunil Batra Delhi Administration
2. Against bondage: Bundhua Mukti Morcha v. Union of India
3. Livelihood: Olega Tellus v. Bombay Municipal Corporation
4. Human dignity: Upendra Baxi v. State of UP
5. Legal aid: Sheela Barse v Union of India
6. Protection of workers: M K. Sharma, Bharat Electronics Ltd
7. Child abuse: Vishal Jeet v. Union of India
8. Against child labour: M C. Mehta v. state of Tamil Nadu
9. Nadiad case: Delhi Judicial Service Association, The Hazari Court Delhi v State of Gujarat
10. *Social justice is Fundamental Right:* Ashok Kumar Gupta v. State of UP

Above all cases have not only protected the principles of social justice but have enlighten the society with concept of basic human requirements which involves human needs and social needs to be fulfilled as members of society.

a.   A.I.R. 1980, S.C.R. 2.
b.   A.I.R. 1984, S.C.C. 61.
c.   A.I.R. 1986, S.C. 180.
d.   A.I.R. 1983, 2, S.C.C. 308.
e.   A.I.R. 1986, 3, S.C.C. 596.
f.   A.I.R. 1987, S.C. 1792.
g.   A.I.R. 1990, S.C.R. (2) 861.
h.   A.I.R. 1996, 6, S.C.C. 756.
i.   A.I.R. 1991, S.C. 2176.

Conclusion

Through social justice we are systematically strengthening those sections for individuals forming part of society who have been denied of any right or facilities as part of Human

Rights, in past. There is a need that all citizen should rise above the barriers of caste, religion or decent and people must follow principals of Humanity. Society may adopt appropriate tools/ strategies for enforcement of social principals for human rights protection and country advancement.

As an outcome this will enhance working of people along with pillar of Constitution and establish a welfare society for citizens. Secondly, we all need to develop a viable sustainable system of laws by either amending existing laws or enforcing new Laws and policies.Law alone can not bring social justice we need to imbibe unity, integrity to develop strong correlation along with coordination in society.

We citizens in name of social justice have to stop all those activities, action which are having no relationship with social justice or degrading our society or is mere exploitation of the Fundamental Rights.

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THE ROLE OF ARBITRATION IN INTERNATIONAL COMMERCIAL DISPUTES

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ABSTRACT

Arbitration as a form of Alternate Dispute Resolution has gained traction over the past few years in India. More specifically, as India has removed trade barriers and opened up trade, International Commercial Arbitration has gained specific importance. Dispute resolution mechanisms have constantly undergone continuous transformation throughout the history of commercial conflicts. The processes of litigation have been acknowledged to prove grossly inadequate and prone to more damage than resolution of conflict by hampering positive future relation and association between the parties to it. This paper analyses the process of both, Arbitration and International Commercial Arbitration in India, and makes a humble attempt at analysing the problems being faced by the parties, as well as how to resolve them.

Introduction

Dispute resolution mechanisms have constantly undergone continuous transformation throughout the history of commercial conflicts. The processes of litigation have been acknowledged to prove grossly inadequate and prone to more damage than resolution of conflict by hampering positive future relation and association between the parties to it. These days, just has there seem to be a global paradigm shift from governmental control to deregulation in all facets of life, there also seem to be a similar shift from placing reliance on strict legal provisions in resolving business or commercial disputes to the use of processes of Alternative Dispute Resolution (ADR), a phrased designed to cover a wide range of processes adopted for the resolution of conflict other than through litigation. These consist of conciliation, mediation, expert determination, adjudication, negotiation and arbitration. However, arbitration has shown to be the most widely embraced process for business disputes especially across national borders and boundaries. As a dispute resolution mechanism, arbitration has long gained prominence among governments and inter/multinational organisations, for instance most contracts now contain clauses that mandate parties to explore arbitration options in the event of a disagreement.

Usually, according to Tweeddale A and Tweeddale K,2 for there to be arbitration, a number of factors must be present. One, there must have been an arbitration agreement3 between the parties and this gives the arbitral tribunal its jurisdiction to hear and determine the dispute, otherwise the whole arbitral process will fail. This is usually contained in the contractual agreement between the parties. Two, an arbitration panel must be appointed by the parties. The process of selection may be contained in the arbitration clause or agreement and the mandate of the panel is to hear and determine the dispute between the parties which has been referred to it. Thirdly, a dispute or difference must have arisen. Also, there must be a "judicial process" not necessarily in the form of litigation but there must be compliance with due processes, fairness and impartiality, and there must be a decision in the form of an arbitral award. This is usually final and binding on the parties. In arbitration of international commercial disputes, this is usually put into writing and once the award is made the arbitral tribunal is functus officio in respect of the matters decided within the award and the issues are thereafter res judicata. According to Indira Carr, arbitration could be said to be the first step towards privatisation of justice. This is because it bye-passes the rigours of litigating in state courts while ensuring equal enforcement of its award. Arbitration allows its parties to have greater control of matters such as the appointment of arbitrators, the language of the arbitration as well as the place of arbitration. The principles to be applied to issues also need not be attached to any particular national law. The Arbitration Act 19966 requires all arbitration agreements to be in writing although an oral agreement can still be enforceable under the

common law. An arbitration agreement is defined in S. 6 of the same Act as "an agreement to submit to arbitration, present or future disputes, whether they are contractual or not" although the parties can make the agreement either before or after the dispute has arisen. Arbitration, thus, has proven to be a most widely embraced process for business disputes especially across national borders and boundaries. As a dispute resolution mechanism, arbitration has long gained prominence among governments and inter/ multinational, especially business organisations. Most business agreements or contracts now contain clauses that mandate parties to explore arbitration options in incidents of conflict or disagreement.

This work is aimed to assess the role arbitration has played, is playing and can still play in international business disputes. Part one will focus mainly on the nature and purpose of arbitration in international disputes, look into why arbitration is such a popular and preferred choice of dispute resolution as opposed to other alternatives to litigation, its law and procedure and examine the issues of jurisdiction and choice of law. Part two will deal with the successes and effectiveness of the system, its shortcomings and weaknesses noting historical, political and economic factors which contributed to either, thus examining its significance or the role it has played in international business dispute resolution platforms. The work will thus be concluded on this note and recommendations given for the way forward.

PART ONE

International Arbitration

It is often said that every arbitration is national or domestic in nature as it will definitely be held at a given place and subject to a particular national or domestic law. However, we can still classify some proceedings as either national/domestic or international due to the nature of the dispute, the nationality of the parties and the place of holding the arbitration tribunal. Arbitration is considered to be viternahational in nature when according to Article1 (3) of the UNCITRAL Model Law if it falls within the following three ambits:

i. If the parties to the arbitration have at the time of completion of the agreement, their places of business in different places.

ii. If one of the following places is situated outside the state in which the parties have their places of business

(a) the place of arbitration if determined in or pursuant to the arbitration agreement,

(b) any place where a substantial part of the obligation the commercial relationship is to be performed or the place with which the subject matter of the dispute is more closely connected.

iii.The parties have expressly agreed that the subject matter of the arbitration agreement relates to more than one country. The resolution of disputes by arbitration under international commercial contracts is widely conducted under the auspices of several major international institutions and rule making bodies. The most popular are the International Chamber of Commerce (ICC), the International Centre for Dispute Resolution (ICDR), the international branch of the American Arbitration Association (AAA), the London Court of International Arbitration (LCIA), and Hong Kong International Arbitration Centre.

Distinction Between Domestic And International Arbitration

International arbitration is often affected by several factors alien to domestic arbitration. For instance, different laws are likely to be relevant to an international arbitration process while in domestic arbitration only the national law is put into consideration. Also, in international Arbitration, the chairman of the arbitration tribunal may come from a completely different country from the parties. Further still, the procedure adopted in an international arbitration may not mirror any domestic litigation procedure, and international arbitration often relies upon conventions to allow enforcement of its arbitral award. It is not just the fact that international arbitration arises in the context of international contracts that makes it different. In the international dispute resolution community, it is widely accepted to be a different ball-game entirely, involving different practices and rules, and being represented by a different community of arbitrators and legal practitioners. Although the

procedural laws of many countries provide for "international" arbitrations to take place, care must be taken to ensure that an "internationalized" form of a domestic arbitration practice is not confused with genuine international arbitration practice as it exist outside and beyond the rules of any particular jurisdiction. An international arbitration need not have any connection with the state in which the arbitration takes place, other than the fact that it is taking place within the territory of that state.

Confidentiality In Arbitration Proceedings

Because parties generally choose the place of arbitration and the proceedings are not held in public, Arbitrations are deemed to be confidential most especially since the information disclose in an arbitration tribunal cannot be disclosed to a third party. However, we must mention that witnesses are not usually subject to the confidentiality obligation and a challenge of an arbitral award in a regular court under S.68 of Arbitration Act 1996 can be heard either in public or in private and there is no assurance that a hearing made in private will not be made public unless it raises an extremely sensitive issue. A good example of this is the case of Department of Economic Policy and Development of the City of Moscow V. Banker's Trust Co Industrial Bank. Confidentiality is seen as one of the main advantages of arbitration as a dispute resolution system, yet different jurisdictions recognise confidentiality to varying extents. This arises from the notion that private arbitration derives simply from the fact that the parties have agreed to submit any dispute between them to arbitration. It is implicit from this that strangers shall be excluded from the hearing and neither the tribunal nor any of the parties can insists that the dispute shall be heard or determined concurrently with, or even in consonance with, another dispute. The requirement that arbitration is held in private extends to the documents and any award rendered in the process of the hearing.

In international disputes, Arbitrations involving a state and a foreign investor raise different questions. The public interest in such arbitrations means that confidentiality cannot apply in the same way as it does to arbitration between two companies. It is trite that democratically-elected governments must be accountable and open. Keeping proceedings and awards secret does not enhance that openness.15 However, on appeal the confidentiality is lost but a very insignificant number of cases go on to appeal, and even this risk can be eliminated by inserting into the agreement a clause excluding the right to appeal. This is also an important factor as regards the risk of costs and delays due to appeals in court proceedings. It is, however, true to say that because of this very element, only limited feedback comes to light as to how arbitration is actually conducted especially in international business disputes and this may be seen as a disadvantage.

Nature and Purpose of Arbitration in International Commercial Disputes

In the recent wave of globalisation of international trade, finance and investment, there happens to have been a progressive change in the global legal field. Law is a vital instrument for globalisation. In the global marketplace, the private dispute resolution system in international commerce has proved popular over time. Recently, in many countries, old arbitration laws have been modernised and new arbitration laws have been enacted to respond to the present needs of the international business community in this day and age of globalisation. As such, many countries have followed the UNCITRAL Model Law, which purports to globally harmonise the law and practice in the field. Thus, there has been an increasing trend towards the modernisation of arbitration laws in international commercial disputes across borders. Since economic globalisation aims at cross-border transactions with minimal interference from the state, the liberalisation of the private justice system through modernised international commercial arbitration is considered to be vital for the purpose. This is the aim of the Model Law in the process of harmonisation and globalisation of the private justice system in international business transactions. For settlement of international commercial disputes, international arbitration has proved effective in the global marketplace. Arbitration in international commercial

disputes is believed to contribute to market integration by safeguarding and improving the efficiency of international private transactions.

Policy Issues, Historical, Economical and Political Factors

It must be said at this juncture, that international arbitration is not to be seen as a simple, cheap or quick alternative. Though hearings can be for as short as one week, there is 'a lot of written work before and after a hearing and international arbitration may have other non-monetary advantages over national courts, such as having shorter rules. For example, the ICLA, one of the main arbitration institutions, has rules running to only 30-odd articles. International arbitration serves as the main non-court method for resolving large, complex cross-border commercial disputes, it is divided into two main types: arbitrations which arise out of contractual issues between companies — where they have agreed in the contract to go to arbitration — and those which arise out of a treaty, such as an investment treaty, where companies within the signatory countries agree to arbitration if there are any disputes. The World Bank's International Centre for the Settlement of Investment Disputes (ICSID) has been monitoring the number of new investment treaty arbitrations coming through its door. Until 1999, the number of new cases each year was fewer than ten, but since then the number has shot up, reaching 46 in 2007. However, in both types, international arbitration has come to be seen as the preferred choice of dispute resolution for a majority of large corporations around the world, according to research undertaken by Price water house Coopers (PwC) and Queen Mary, University of London in 2006, which found that 73% of respondent corporations preferred international arbitration. This growth is a natural by-product of a globalised world, where parties to a commercial deal come from different legal systems with different laws and, therefore, need a dispute resolution process that operates above and beyond national borders. A basic tenet of arbitration in international business disputes is the freedom of the parties to agree to have disputes arising from their contract resolved outside the national court regime resorting to the alternative dispute resolution mechanism as well as using the applicable law of their choice. The legal relationship between the main contract and the arbitration agreement is that they take on separate existences. This is known as the doctrine of separability of the arbitration agreement; a valid arbitration agreement is regarded as a separate and autonomous contract whose validity is not affected by termination of the main contract. The free-standing nature of an arbitration agreement has been judicially approved in several English cases. It is argued here that challenges to arbitration, if mounted over disputes such as arbitrability and the arbitration procedure itself, seem to maintain this separability between the main contract and the arbitration agreement. However, the interpretation of such contracts finds its origin in national law.

Law and Procedure in Arbitration of International Business Disputes

The issue of jurisdiction is fundamental to the authority and decision making powers of the arbitrators. Awards rendered without jurisdiction has no legitimacy. The absence of jurisdiction constitutes one of the few recognized factors a court can rely on in setting aside or overruling an arbitral award or decision of an arbitral tribunal. Accordingly it is often better to resolve the issue of jurisdiction at the initial or early stage as the issue can be visited at any stage of the arbitration tribunal as well as before a state court.

Unlike the jurisdiction in state courts, the jurisdiction of an arbitration tribunal is not determined by a single lex fori because of the hybrid character of arbitration. It is usually based on a complex mixture of contractual and jurisdictional elements, that is, the will of the parties as expressed in the arbitration agreement on the one hand, and the different laws applicable to various aspects of the arbitration tribunal on the other hand. To strengthen the jurisdiction of the arbitral proceeding, and to minimize the challenges being used as a tactic to delay or derail the arbitration proceedings most modern arbitration laws make use of different techniques to side-step that. The central elements in those efforts is the recognition of

the arbitration tribunal's authority to determine its own jurisdiction or competence by the so-called "competence- competence" principle. In addition, the so-called positive doctrine of "competence- competence", if understood clearly and ineptly also has a bearing on whether courts can decide on the arbitrator's jurisdiction before the arbitration tribunal itself has dealt with the issue. To ensure the enforceability of arbitral awards, arbitrators must consider the domicile of the assets of the litigants to see if there are any possible conflicts between their decisions and the national law of the court where recognition or enforcement is sought. Enforcing states might find that some awards, even though rendered on an objective consideration of a dispute are against their public policy. After all, the award, as it is now, would always be at the mercy of national laws once it is challenged. Accordingly, a national procedural law to which an arbitration dispute is subjected could be seen as a standard by which to accept the validity of an award in another jurisdiction where the award requires recognition and enforcement. Also problems can arise in arbitration of an international commercial dispute if one of the parties to an arbitration agreement is unwilling to accept the decision of arbitrators or entertains second thoughts about the arbitration agreement. However, when this happens it unleashes the forces of the national laws affecting the arbitration agreement, the arbitral proceedings and the award. The national courts then become pivotal in resolving the fallout between the parties to an arbitration agreement.

PART TWO

Relationship between Arbitration in International Commercial Disputes and National

Courts

The judgments in the recent English cases have expressed support for the arbitral system. Huge dicta in the cases regarding the reasonable expectations of business persons highlight the underlying aim of international arbitration to provide a business-friendly method of dispute resolution. The recognition of this reality invites an analysis of how far, beyond the theory and in practical terms, it has been possible for these cases to be dealt with in a way readily understandable by and serving the needs of commercial litigants and whether there are other relevant underlying factors which have contributed to the decision-making. In the House of Lords decision in Fiona Trust V. Privalor, Lord Hoffmann commented that it is the reasonable expectation of businessmen that they will receive "a quick and efficient adjudication" of their disputes with minimal "risks of delay". In particular, it is most likely that the parties would have intended that all issues arising out of their agreements should be decided in one forum and there would be "no rational basis" for any other view.

Merits/ Appeal of Arbitration in International Commercial Dispute Resolution

In international commercial transactions, parties may face many different choices when it comes to including a mechanism for resolving disputes arising under their contract. If they are silent, they will be subject to the courts of wherever a disaffected party decides to initiate legal proceedings and believes it can obtain jurisdiction over the other party. This may not sit well with parties that need to know at the time of entering into their contract that their contractual rights will be enforced. The alternative to silence is to specify a method of binding dispute resolution, which can be either litigation before the domestic tribunal of one of the parties or arbitration. If the parties choose to resolve their disputes in the courts, however, they may encounter various difficulties. The first is that they may be confined to choosing one or the others' courts, as the courts of a third country may decline the invitation to devote their resources to deciding a dispute that does not involve any of that country's citizens, companies, or national interests. The second, and perhaps more significant difficulty, is that judicial decisions are not very "portable" in that it is difficult and sometimes impossible to enforce a court decision in a country other than the one in which it was rendered. The ability to resolve disputes in a neutral forum and the enforceability of binding decisions are therefore major advantages of international arbitration over the resolution of disputes in

domestic courts.Furthermore, parties to international business contracts can decide to site their dispute resolution process in a third, neutral country, knowing that the eventual award can be easily enforced in any country, though with some few exceptions. An international award therefore has substantially greater legal force than a domestic court decision. For most types of international business contract and most of the disputes arising from them, the ability to refer the matter to arbitration can have real advantages . Summarily, unlike all the other forms of ADR enumerated at the beginning of this work, the part played by arbitration is completely outstanding and noteworthy. Recognising that international commercial clients attach a very great importance to avoiding disputes is one giant stride International Arbitration has taken that is very worthy of note. While good legal advice and management can reduce the risk of disputes arising, as and when they do, the route through which they are dealt with is of an even greater significance.30 And this is where arbitration has become indispensable.

Conclusion

Evaluation of the Current System Arbitration In International Business Disputes, Its Weaknesses and the Way Forward Although ADR techniques are supposed to be cheaper than the cost of litigation, international commercial arbitration can often prove to be more expensive than litigation especially in complex international cases whereby both parties appoint distinguished lawyers and eminent and expensive arbitrators. Also, because there is no strict application of the rules of evidence, irrelevant and inflammatory materials may be presented to the arbitration panel and time and money is spent on issues which are unnecessary.32 There are, also, situations in which arbitration is not usually preferred; for example, some sovereign States are unwilling to arbitrate, and there seems to be an inclination by bank creditors, and their lawyers, to prefer litigation for disputes arising out of some international loan agreements. It is greatly desirable for the rules and practices of all or most nations to be the same with respect to international commercial arbitration whether those rules and practices concern public policy

or not. If such uniformity were already in existence there would of course not be any objection whatsoever against it. The position however as at present is that no such uniformity exists most especially with respect to public policy rules. Thus, this work will propose evolution of uniform or at least quite similar (including public policy rules) of generally acceptable rules with respect to arbitration of international commercial disputes. Such uniform rules would invariably take the interests of the various nations or at least regions into consideration and would not give the impression of being designed by one set or region of people and made to be adopted or copied by others without the necessary considerations of cultural and historical differences and other present day realities. In addition, it may still seem reasonable to fear that some countries especially the developing ones could constitute stumbling blocks to the development of uniform rules of arbitration in international business disputes, especially given the fact that most of these developing countries' started the use of arbitration for the settlement of international disputes vey lately and the sometimes less than zealous approach of some of them to arbitration even now.

As the issue of arbitration in international disputes relates to developing countries one question that comes to mind is whether or not contracts for the exploitation of natural resources which form the bedrock of the national economies of most of those countries should be subjected to arbitration or should be determined only by their domestic courts applying purely domestic laws, even when there are other international parties involved. This question can be taken further and translated into whether such contracts should be governed by those countries' domestic laws or a certain set of general principles of law governing international disputes or an international law of contract. It could be feared that such developing countries are never likely to make such disputes arbitrable. However, there may be some exceptions to this line of reasoning. For instance, Nigeria is a developing country whose economy has up to 90 per cent dependence on oil minerals. Major oil companies of the world operate in the country and indigenous operators are only now

emerging but disputes in the oil industry are not only completely arbitrable in Nigeria, the contracts with the operating oil companies promote arbitration and Nigeria made the choice of its own volition.

Also in the area of confidentiality, there may be limits to it. Even where parties would like to keep their arbitration secret, mandatory legal requirements may compel disclosure of at least certain aspects of the process. Non-parties such as a parent company, an insurer or a guarantor may have legitimate interests in being informed as to the content of a pending arbitration. Any agreement between the parties as to confidentiality will have to address any duty of a company to make disclosure of arbitration proceedings or awards which have an effect on the company's financial decisions. Perhaps the most difficult matter which can undermine the effectiveness of arbitration concerns related disputes and parties. In reality, a dispute may arise with a related entity in the counter-party's corporate family rather than the counter-party which has signed an arbitration agreement. Difficult jurisdictional issues can therefore arise. While some countries have existing rules and doctrines for "piercing the corporate veil" and other means of addressing such technical problems, it can often add considerable expense and delay to a process if there is any doubt about the identification of the correct parties to the dispute.38 Finally, this work would end on the note that the major institutions regulating and governing the regulation of arbitration procedures especially in the area of international business disputes should keep the processes and procedure as simple and less complex as possible as opposed to litigation so that the attractiveness of arbitration would not be lost and strive to achieve a more uniform, globally even system of international arbitration to ensure ease of enforcement of awards.

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AN APPROACH TO CLUSTERING WITH THE COVID-19 DATASET OF SOME INDIA STATES

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ABSTRACT

This research paper presents a comprehensive examination of several widely utilized clustering concepts for the purposes of creating a cluster of a dangerous contagious illness dataset. The emerging spread of contagious disease has a significant impact on global health, and a comprehensive review of the literature related to this topic has already been performed. Some scientific papers on contagious diseases in humans have been published, and the subject of how to cure a virus has been examined. For clustering, a dataset of dangerous corona-virus infectious disease have been selected from five different states in India. We have been using this technique to search for ways of creating a good quality cluster based on the silhouette index and Dunn's index of cluster validity. The considered dataset have been used to analyze the cluster compactness utilizing its dual index created cluster. The cluster compactness aids in restricting the transmission of the virus and confining its impact on the community to individuals who belong to the cluster. In this article, we talk about the importance of encouraging researchers in this domain, as well as a few suggestions for future studies in infectious disease.

Introduction

This outbreak rapidly spread in the whole world and attacked the breathing system. The COVID-19 is a more dangerous disease affected by SARS-COV-2. Their deadly viruses affect the higher or lower part of the respiratory system. The SARS-COV-2 is a novel type of coronavirus like that together with MERS and SARS. The recent outbreak of n-COVID-19 is known as the new coronavirus all over the world. This virus is originating in China but several countries like Italy, South Korea, and Iran are more affected. There are most common symptoms like dry cough, fever, and exhaustion, less common symptoms like pains, aches, diarrhea, headache, and conjunctivitis, sore of the throat. The serious symptoms like that, breathing difficulties, pain in the chest, difficulty in speech, and blue lips or face.[1], SARS-Cov-2 has currently outbreak from China reported the confirm cases 45171 by Feb 12, 2020 of pneumonia [2]. Initially it assumed to be a type of pneumonia.

The virus transmission from some sources like that is droplet created by coughing or sneezing infected person, contact with infected animals, public places, meeting, gathering, etc. The precaution is protected from n-COVID-19 like cover the mouth by mask, was your hand properly with soap, keep maintain the distance from infected or seek people, and heat the food before consuming because the virus cannot exist at high temperature. Protect itself from the n-COVID-19: maintain the distancing from a sick person, regularly wash the hand, and cover the face with a mask, heat up your food thoroughly virus cannot survive at high temperatures. Thus, you should heat up your food properly before consuming it [3]. Author review related concept transmission and pathogenesis of MERS-CoV, SARS- CoV, and also discussed the measure to fight its viruses [4]. Virus transmission person to person has been explained familial settings of the cluster [5]. Prevention any spread of deadly coronavirus and its control by setting of healthcare as well as hospital surfaces [6-7].

The infection spreads to the lungs, causing trouble breathing and death. After breathing in the disease, the ailment is transmitted to the next individual who is sensitive to the illness without producing any negative impacts. The illness has a fourteen-day life expectancy from the day it creates side effects including fever, severe coughing, and predictable sniffling to infect more individuals in the contamination region.

In[8], authors are studies and reveals that SARS, MERS or human corona virus (HCoV) can persist by inanimate surface up to nine days can be stop the outbreak of it thread. The deadly coronavirus pandemic will continue and more researchers are speeding the trail of vaccines in the last stage but while researchers say ensure by end of the year work of vaccination.

The considered dataset have been used to analyze the cluster compactness utilizing its dual index created cluster investigated. The cluster compactness aids in restricting the transmission of the virus and confining its impact on the community to individuals who belong to the cluster. In the present study of this paper the importance of encouraging researchers in this domain, as well as a few suggestions for future studies in infectious disease.

This paper is prepared and organized as follows. In Section- 1 discussed the brief introduction related to the Covid-19, Section-2 discussed the brief literature survey, Section-3 discussed the brief concept of the clustering approach, Section- 4 explains the experimental results, and Section-5 briefs the conclusions and future scope.

Literature Review

The deadly corona virus pandemic growth in entire the world and suggestion of the researcher's common symptoms like fever, lack of the appetite, cough, tiredness, pain , breathing problem among people have suffered the COVID-19. Now suppose you feel worse cold with fever, then suspect the COVID-19 and several people have suffered blood clots in arteries, breathing problem feels not better to advise the doctor immediately and rest for fourteen days at home [3,8]. Clustering of data is an unsupervised learning concept to extraction of data and ideas of this method the same type data put in the one cluster and other data place in various clusters. Dunn's index is the second component to the measure of cluster quality, it depend on the minimum separation and max-intra-cluster distance (compactness). The Dunn's index is minimum separation divided by max intra-cluster distance [9]. In [10], author proposed novel cluster validity, modification of Dunn's score and measure the

shortest path. The comparatively studied between hard and c-means of fuzzy clustering by the author in [11].

In [12], authors discussed the measure internal quality of cluster: Cohesion of the cluster is sum of assign the weight every links in a cluster its measure by sum of squared errors (SSE) or WSS (Within the cluster Sum of Square), and sum of weights between the node object in cluster and outside the cluster known as the separation (between the cluster sum of square) of the cluster in a graph based cluster.

$$SSE = WSS = \sum_i \sum_{a \in C_i} (a - m_i),$$

$BSS = \sum |C_i|(m - m_i)^2,$ $|C_i|$ =Size of the ith cluster. Average silhouette is the measure the cluster validly; pick exact number of cluster, relative quality of the cluster, compactness and the separation Silhouette value is consists both concepts of cohesion and separation [13-14].

Cluster validity with fuzzy clustering technique is supported by similarities and dissimilarities define the pairwise. The silhouette index is generalized and applied on both crisp and fuzzy approaches [15]. The detecting of separated clusters concept in research paper report proposed by Dunn's in [16], and study the survey on cluster [17]. The objective function value is minimized, and show facilitates the new relationship same function, stopping algorithm and prove this relationship [18]. The variable of confirm cases, cure cases, and death cases from 20 May 2021 to 31 July 2021 in India, five different states Rajasthan, Punjab, Uttar Pradesh, Gujarat, and Maharashtra there were more cases spread in these states [19].

Research Methodology

Details of k-means in [20, 21], several steps as given below:
i. Choose k-prototype centroid at random from a data point
ii. Create the initial partitioning of the cluster by assigning the object to the nearest centroid
iii. Calculate the mean of centroid for all clusters.
   a. Any object to find its distance to all centroids.
   b. The object to assign cluster with nearest centroid.

c. If the object was re-assigned, recalculate the centroids on the basis of new clusters.

iv. Repeat step above (i- iii) until make clusters.

In [14], the quality of cluster is determined by silhouette; therefore silhouette $S_{(k)}$ is clearly defined as

$$s_{(k)} = [b_{(k)} - a_{(k))}]/\min\{a_{(k)}, b_{(k)}\}$$
(1)

Differences of the kth object to other rest object in the own cluster, neighboring cluster and range of silhouette is $-1 \leq S_{(k)} \geq 1$, case: 1- if $S_{(k)}$ close to 1, cluster clearly distinguish (better quality of cluster) or good cluster, case:2- if $S_{(k)} = 0$, then sample represent the overlying in cluster or not significant, case: 3- if $S_{(k)}$ close to -1, then sample misclassified or create the cluster in wrong direction

And equation- (1) is simplified to (2) we get

$$s(k) = \begin{cases} 1 - [\frac{a(k)}{b(k)}] & if\, a(k) < b(k) \\ 0 & if\, a(k) = b(k) \\ [\frac{b(k)}{a(k)}] - 1 & if\, a(k) > b(k) \end{cases}$$
(2)

In [10], author Ilc (2012), discuss the evaluation of the internal quality of cluster and identifies sets of cluster compactness. Dunn's index introduced by Dunn's in 1974, measure it index as follows the steps;

a. Measure max distance are given by
$$\Delta_i = max_{a,b \in C_i} dist(a,b),$$
(3)

b. Measure mean distance of all pairs are given by
$$\Delta_i = \frac{2}{(|C_i|(|C_i|-1))}[\sum_{a,b \in C_i, a \neq b} dist(a,b)]$$
(4)

c. Measure the distance from mean are given by
$$\Delta_i = \frac{\sum_{a \in C_i} dist(a, mean)}{[|C_i|]}, \quad mean = \frac{\sum_{a \in C_i} a}{[|C_i|]}$$
(5)

d. Measure Dunn's index use the following formula are given by
$$U = minimum_{i<i<j\leq m}\partial(C_i, C_j)/[maximum_{1\leq k\leq m}\Delta k]$$
(6)

Where, m is the cluster.

Results and Discussion

In this research studies a clustering implemented and analyzed on NCSS 2020, and also implemented on the MATLAB tool .The report of clustering for COVID-19 average silhouette index and Dunn's index value at for various levels of clusters for various states in India and shown the results in table-1 and table-2.

Result: 20 August 2020 to 31 October 2020 India, five different states of India
Variables: Death, Confirm cases
Distance Type: Euclidean
Scale Type: Standard Deviation
Dataset 1: Variable confirm cases and death cases from 20 May 2021 to 31 July 2021 India, five different states of India

Table-1: Average Silhouette score of clustering on COVID-19 datasets for various five states.

S.N.	States	Cluster 2	Cluster 3	Cluster 4	Cluster 5
1.	Rajasthan	0.6360	0.5802	0.5673	0.5294
2.	Punjab	0.6122	0.5907	0.5590	0.5361
3.	UttarPradesh	0.6567	0.6101	0.5623	0.5178
4.	Gujarat	0.6136	0.6231	0.5723	0.5492
5.	Maharashtra	0.6151	0.5709	0.5457	0.5375

Table-2: Dunn's index of clustering on COVID-19 datasets for various five states.

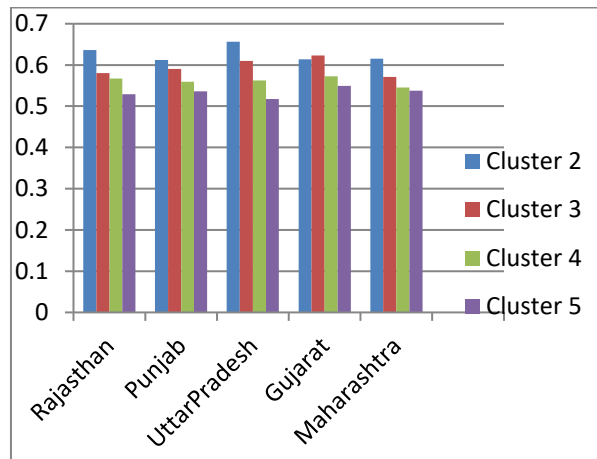| S.N.	States	Cluster 2	Cluster 3	Cluster 4	Cluster 5
1.	Rajasthan	0.7389	0.6209	0.5588	0.5136
2.	Punjab	0.7626	0.6382	0.5756	0.5249
3.	Uttar Pradesh	0.7586	0.6459	0.5764	0.5320
4.	Gujarat	0.7775	0.6604	0.5922	0.5463
5.	Maharashtra	0.7252	0.6132	0.5497	0.5078

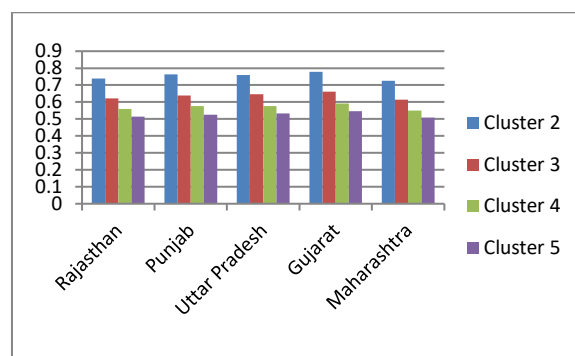**Figure 2. Analysis the clusters between silhouette values vs. Clusters**

Figure 3.Analysis the clusters between Dunn's Index vs. Clusters.

Dataset 2: Variable confirm cases and cure cases from 20 May 2021 to 31 July 2021 India, five different states of India.

Table-3: Average SilhouetteScore of clustering on COVID-19 datasets for various five states.

S.N.	States	Cluster 2	Cluster 3	Cluster 4	Cluster 5
1.	Rajasthan	0.6223	0.5816	0.5592	0.5319
2.	Punjab	0.6150	0.5923	0.5412	0.5235
3.	Uttar Pradesh	0.6623	0.5236	0.5743	0.5965
4.	Gujarat	0.6815	0.6159	0.5662	0.5345
5.	Maharashtra	0.6235	0.5535	0.5461	0.5072

Table-4: Dunn's index of clustering on COVID-19 datasets for various five states.

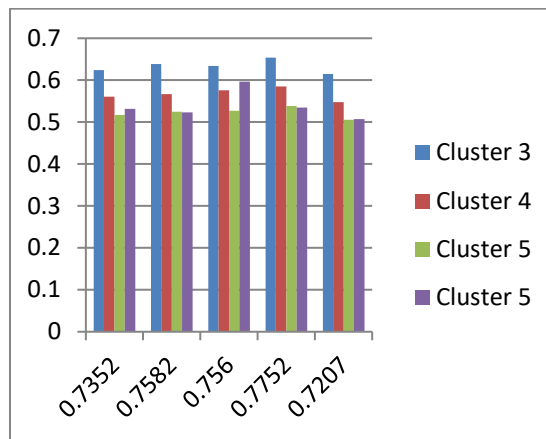| S.N.	States	Cluster 2	Cluster 3	Cluster 4	Cluster 5
1.	Rajasthan	0.7352	0.6243	0.5609	0.5168
2.	Punjab	0.7582	0.6383	0.5671	0.5251
3.	Uttar Pradesh	0.7560	0.6342	0.5763	0.5274
4.	Gujarat	0.7752	0.6537	0.5853	0.5382
5.	Maharashtra	0.7207	0.6145	0.5474	0.5057

Figure 4. Analysis the clusters silhouette values vs. Clusters.
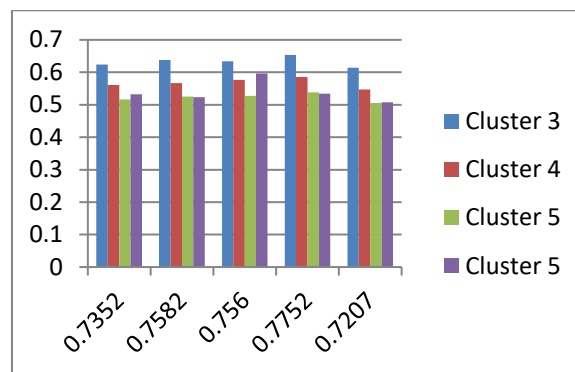

Figure 5.Analysis the clusters on Dunn's index vs. Clusters.

For Dataset-1 Average Silhouette score of clustering on COVID-19 datasets for various five states in Table-1 and Dunn's index of clustering on COVID-19 datasets for various five states in Table-2 show the respectively. The analysis of cluster compactness in fig.-2, fig.-3 by silhouette index and Dunn's index respectively compare the five states in India.

Created cluster between confirm cases and death cases are 2, 3, 4, and 5. The compactness of the clusters is reduced from 2 to cluster 5 due to both silhouette and Dunn's index decrease from 2 to cluster 5.For Dataset-2 Average Silhouette score of clustering on COVID-19 datasets for various five states in Table-3 and Dunn's index of clustering on COVID-19 datasets for various five states in Table-4 show the respectively. The analysis of cluster compactness in fig.-4, fig.-5 by silhouette index and Dunn's index respectively compare the five states in India. Created cluster between confirm cases and death cases are 2, 3, 4, and 5 based on the considered dataset. The compactness of clusters is reduced based on

both silhouette and Dunn's index from 2 to cluster 5 due to decreases the index value from 2 to cluster 5. Therefore, created cluster2, 3, 4, and 5 are well apart from every cluster, clearly distinguish, and pandemic COVID-19 prevent its respective clusters.

Conclusion

Considered the standards and plans for spreading the novel Covid-19, as well as the relationship between confirmed cases and death cases in India from 20 May 2021 to 31 July 2021, including the confirmed incidents and recovered cases in the same time frame from five various Indian states. The virus's spread in other parts of India is just becoming more serious. On a daily basis in various Indian states, the numbers of confirmed cases, death cases, and recovered cases differ from new corona-virus counts. The Covid-19 datasets are derived from the Kaggle data sets time series. The clustering effects revealed that the transmission of this dangerous virus was similar in Gujarat, Maharashtra, and Punjab but not in the other states. The purpose of this paper is to analyze and compare Covid-19's

spread throughout Rajasthan, Punjab, Uttar Pradesh, Gujarat, and Maharashtra. By establishing distinct clusters and applying clustering techniques, we can measure the average silhouette score and Dunn's index, though compactness is reduced due to the reduced value of the index and well-created clusters. We have found that the compactness of familiar clusters may assist prevent and control the infection. The authors have recommended and suggested that researchers classify artificial intelligence, time series models, and statistical models that can be fitted on the Covid-19 datasets in future research.

Acknowledgements

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ULTRASONIC VELOCITY MEASUREMENTS OF ORGANOCHLORO-PESTICIDES IN METHANOL

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ABSTRACT

Ultrasonic velocity of organochloropesticides in methanol has been measured at different temperature (308-323K). Using these data adiabatic compressibility, apparent molar compressibility, molar sound velocity, molar sound compressibility, specific acoustic impedance, relative association constant, solvation number and apparent molar volume have been evaluated. The effect of temperature on these parameters has also been studied. The sign and magnitude of these properties are evident for the nature of interactions between component molecules.

Introduction

Ultrasonic velocity measurement is a powerful tool to study the ion-solvent interaction [1-5]. , Therefore, in the present investigation, the study of Ultrasonic velocity along with density of pesticide solutions at different temperature (308-323K) has been undertaken. Adiabatic compressibility (β), apparent molar compressibility (ϕ_k), molar sound velocity (R), molar sound compressibility (W), specific acoustic impedance (Z), relative association constant (R_A), solvation number (Sn) and apparent molar volume (ϕ_v) will be calculated since they may give a clear insight in elucidating the pesticide-solvent interaction.

Experimental

The organochloro pesticides (2,4-D Sodium Salt, Monocrotophos, Phosphamidon, Malathion, and Endosulfan) were obtained from Hindustan Insecticides Limited Gurgaon (Haryana), India. Freshly prepared conductivity water was used.

The densities were measured by using dilatometer made of pyrex having a reservoir volume of 15 cm^3. The measuring section was constructed of precisely bored graduated capillary. The pyrex dilatometer was celebrated using conductivity water and the accuracy ± 0.0002 g cm^{-3} of measurements was checked by using test solution of known density.

The Ultrasonic velocity of pesticide solutions were measured using a single crystal ultrasonic interferometer (Model No. F-81, Mittal Enterprises, New Delhi, India) working at a fixed frequency of 2 MHz. Water from a thermostat maintained at the desired temperature and controlled up to ± 0.05°C was passed through the jacket of the cell before the measurement was made.

The measured velocities have an uncertainly of ± 0.047% ms^{-1}.

Results And Discussion

Ultrasonic velocity, u (ms^{-1}) of organochloropesticides solution increase with increase in concentration but decrease with increase in temperature (fig-1). Plot of u vs. C are linear. The ultrasonic velocity also increases with increase in molecular weight of organochloropesticides.

The adiabatic compressibility, β, of solution is determined by using the relation :

$$\beta = \frac{1}{\mu^2 d} \qquad ...(1)$$

where d is the density of solution.

The adiabatic compressibility, β (Table 1) decrease with increase in concentration, molecular weight of organochloro pesticides and temperature indicating the decrease in pesticide-solvent interaction.

The ultrasonic velocity, u is related with pesticide concentration, 'C' as :

$$u = u_0 + GC \qquad \qquad …(2)$$

where u_0 is the ultrasonic velocity, for zero pesticide concentration and 'G' is Garnsey's constant **[6]**. The value of G are 4.00×10^2, 4.45×10^2, 5.00×10^2, 6.00×10^2 and 8.00×10^2 respectively for 2,4-D Sodium Salt, Monocrotophos, Phosphamidon, Malathion and Endosulfan. There is no effect of temperature on the value of 'G'. The value of u_0 (zero pesticide conc.) for 2,4-D Sodium Salt are 1.072×10^3, 1.059×10^3, 1.037×10^3 and 1.026×10^3 ms^{-1} at 308 K, 313K, 318 K and 323 K respectively for 2,4-D Sodium Salt are in agreement with the experimental values of ultrasonic velocity in methanol. This shows that there is less pesticide-solvent interaction in low concentrations.

The molar sound velocity, R and molar sound compressibility, W have Been calculated from :

$$R = \left(\frac{M}{d}\right) u^{1/3} \quad \text{or} \quad R = V \cdot \mu^{1/3}$$

$$W = \left(\frac{M}{d}\right) \beta^{-1/7} \quad \text{or} \quad W = V \cdot \beta^{-1/7}$$

where M is the average molecular weight of the solution calculated from the relation $M = X_1 M_1 + X_2 M_2$, where X_1 and X_2 are mole fractions of solute and solvent of molecular weights M_1, and M_2, and V is the molar volume of the solution.

The value of R and W increase with increase in pesticide concentration but it is unaffected by temperature.

The intermolecular free length L_f has been calculated by using the expression :

$$L_f = \sqrt{\frac{\beta}{k}} \qquad \qquad …(5)$$

where k is temperature dependent Jacobson's constant [7]. L_f increase with increase

concentration of pesticides but decrease with increase in temperature.

The relative association constant, R_A has been calculated from the relationship :

$$R_A = \frac{d}{d_0} \left(\frac{u_0}{u}\right)^{1/3} \qquad \qquad …(6)$$

where d, d_0 are the densities of solution and solvent.

The relative association constant is influenced by either breaking up of solvent molecules in addition of electrolyte or by the solvation of ions on adding pesticide. The values of R_A decrease with increase in concentration, molecular weight of pesticide and also decrease with increase in temperature.

The specific acoustic impedance [8] Z of the solution, calculated as Z = u.d increase with increase in pesticide concentration, temperature and molecular weight of pesticide. The increase in the value of Z with pesticide concentration can be explained on the basis of Lyophobic interaction between pesticide and solvent molecules which increase, the intermolecular distance leaving relative wider gaps between molecules. …(3)

The solvation number [9], Sn has been calculated from the relationship : …(4)

$$Sn = \frac{n_1}{n_2} \left[1 - \frac{V\beta}{n_1 V_1^\circ \beta^\circ} \right] \qquad \qquad …(7)$$

where 'V' is the molar volume of the solution containing n_2 moles of solute, V_1° is the molar volume of the solvent and n_1 is the moles of the solvent. The value of solvation number, Sn decrease with increase in pesticide concentration and also decrease with increase in temperature.

Table 1: Ultrasonic velocity and allied parameter of organo-chloro pesticides in methanol at 308K

Conc. (mol dm^{-3})	u (ms^{-1})	Zx10^{-5} (kgm^{-2}S^{-2})	βx10^9 (m^{2}N^{-1})	R x 10 m^2/mol (m/s)$^{1/3}$	W x 10 m^3/mol (N/m^2)$^{1/7}$	Sn	L$_f$ x 10^8 (m)	R$_A$ x 10	φ$_K$ x 10^{11} (m^{5}N^{-1}kg^{-1}mol^{-1})
2,4-D SODIUM SALT									
0.005	1074	8.362	1.11	1.348	3.020	4864.0	13.80	9.9933	3.127
0.010	1076	8.380	1.11	1.351	3.023	2432.0	13.80	9.9867	3.053
0.020	1079	8.407	1.10	1.355	3.029	1216.0	13.81	9.9778	2.939
0.025	1083	8.441	1.09	1.359	3.032	972.8	13.81	9.9618	2.803
0.030	1084	8.450	1.09	1.361	3.034	810.6	13.81	9.9596	2.763
0.035	1086	8.468	1.09	1.363	3.037	694.7	13.81	9.9529	2.692
0.040	1087	8.478	1.09	1.365	3.040	608.0	13.81	9.9505	2.653
0.045	1090	8.503	1.08	1.369	3.043	540.4	13.81	9.9391	2.551
0.050	1092	8.521	1.07	1.371	3.046	486.7	13.82	9.9321	2.482
MONOCHROTOPHOS									
0.005	1076	8.378	1.11	1.349	3.020	4864	13.80	9.9842	3.065
0.010	1078	8.396	1.10	1.352	3.022	2432	13.80	9.9776	2.991
0.020	1080	8.415	1.10	1.355	3.028	1216	13.81	9.9735	2.909
0.025	1084	8.449	1.09	1.359	3.031	972.8	13.81	9.9576	2.773
0.030	1087	8.474	1.09	1.362	3.034	810.6	13.81	9.9463	2.670
0.035	1088	8.484	1.08	1.364	3.037	694.7	13.81	9.9441	2.631
0.040	1092	8.502	1.08	1.367	3.040	608	13.81	9.9373	2.560
0.045	1092	8.519	1.07	1.370	3.043	540.4	13.81	9.9305	2.491
0.050	1094	8.537	1.07	1.373	3.047	486.7	13.82	9.9237	2.421
PHOSPHAMIDON									
0.005	1076	8.379	1.11	1.350	3.021	4864	13.80	9.9862	3.058
0.010	1078	8.399	1.10	1.353	3.024	2432	13.81	9.9816	3.977
0.020	1083	8.446	1.09	1.355	3.031	1216	13.81	9.9677	3.786
0.025	1086	8.473	1.09	1.359	3.036	972.8	13.81	9.9583	3.676
0.030	1089	8.500	1.08	1.362	3.039	810.6	13.82	9.9490	2.567
0.035	1091	8.519	1.08	1.364	3.043	694.8	13.82	9.9445	2.490
0.040	1093	8.539	1.07	1.367	3.047	608	13.82	9.9396	2.414
0.045	1096	8.566	1.07	1.370	3.050	540	13.83	9.9303	2.308
0.050	1098	8.585	1.06	1.373	3.054	486.4	13.83	9.9254	2.233
MALATHION									
0.005	1076	8.381	1.11	1.350	3.021	4864	13.80	9.9883	4.579
0.010	1079	8.410	1.10	1.353	3.024	2432	13.81	9.9809	4.450
0.020	1084	8.459	1.09	1.360	3.032	1216	13.82	9.9703	4.230
0.025	1089	8.504	1.08	1.365	3.036	972.8	13.82	9.9536	4.037
0.030	1091	8.524	1.08	1.378	3.039	810.6	13.83	9.9503	3.948
0.035	1095	8.561	1.07	1.372	3.043	694.8	13.83	9.9381	3.792
0.040	1098	8.589	1.06	1.376	3.047	608	13.83	9.9302	3.673

0.045	1100	8.610	1.06	1.379	3.051	540.4	13.84	9.9269	3.586
0.050	1104	8.646	1.05	1.383	3.054	486.4	13.84	9.9141	3.438
ENDOSULFAN									
0.005	1077	8.390	1.11	1.351	3.022	4864	13.80	9.9844	5.625
0.010	1081	8.427	1.10	1.356	3.027	2432	13.81	9.9735	5.447
0.020	1086	8.478	1.09	1.363	3.036	1216	13.82	9.9648	5.209
0.025	1092	8.531	1.07	1.370	3.042	972.8	13.82	9.9445	4.967
0.030	1096	8.568	1.06	1.374	3.046	810.6	13.83	9.9332	4.799
0.035	1099	8.598	1.06	1.379	3.051	694.8	13.83	9.9263	4.669
0.040	1104	8.643	1.05	1.384	3.056	608	13.83	9.9105	4.471
0.045	1106	8.664	1.04	1.388	3.061	540	13.84	9.9080	4.379
0.050	1110	8.701	1.04	1.393	3.067	486.4	13.84	9.9080	4.220

Table 2 : Values of limiting compressibility (ϕ_k°, m^2 mol^{-1}) an experimental slope, S$_k$ for organo-chloro pesticides in methanol at different temperature (308-323 K).

Temperature (K)	ϕ_k° x 10^{10}	$-S_K$ x 10^{10}
2,4-D SODIUM SALT		
308	3.17	1.0
313	3.24	1.1
318	3.32	1.2
323	3.42	1.3
MONOCHROTOPHOS		
308	3.58	2.1
313	3.62	2.3
318	3.74	2.4
323	3.96	2.7
PHOSPHAMIDON		
308	4.12	3.4
313	4.37	3.5
318	4.49	3.6
323	4.64	3.7
MALATHION		
308	4.59	4.0
313	4.78	4.4
318	5.01	4.6
323	5.18	4.8
ENDOSULFAN		
308	5.26	5.1
313	5.38	5.3
318	5.50	5.7
323	5.64	6.1

Sn (**Table-1**) decrease with increase in pesticide concentration and also decrease with increase in temperature.

The apparent molar compressibility, ϕ_k has been calculated from the relationship

$$\phi_k = \frac{1000[\beta d_0 - \beta_0 d]}{dd_0} + \frac{\beta M}{d} \quad …(8)$$

where M is the molecular weight of pesticide. The values of ϕ_k decrease with increase in pesticide concentration but increase with increase in molecular weight of pesticide and temperature.

The ϕ_k is related with concentration, C by the relationship:

$$\phi_k = \phi_k^{\circ} + S_k C^{1/2} \quad\quad …(9)$$

where ϕ_k° is the limiting apparent molar compressibility and S_k is experimental slope. The plots of ϕ_k against $C^{1/2}$ (fig-2) are linear. The values of ϕ_k increase with increase in temperature and also increase with increase in molecular weight of pesticide. The values of $-S_k$ increase with increase in temperature and molecular weight of pesiticide. (**Table-2**)

The study of solute-solvent interaction of some pesticides-monochrotophos with aqueous organic solvent have been measured at different temperature [10]. The study of solute-solvent interaction in the present investigation is of great importance in biological chemistry, physical chemistry, environmental chemistry and geo chemistry. It is used over a wide area means extensively in industries to make pesticides and pharmaceuticals and also used as an intermediate in production of chemicals. Density, viscosity and ultrasonic velocity studies of aqueous sodium-propionate at different temperatures have been measured [11]. Studies of ultrasonic velocities and acoustic parameters of trifloxystrobin at various concentration in ethanol-water system have been measured at 300K by using single crystal interferometer at a frequency of 3MHz.

By using ultrasonic velocity, density, viscosity and concentration data various acoustic parameters are calculated and the result are interpreted in terms of solvents-solute and solute-solute interaction. The positive value of solution number is encourage [12]. The ultrasonic velocity, density and viscosity of different binary liquid mixtures have been measured at different temperatures [13, 14].
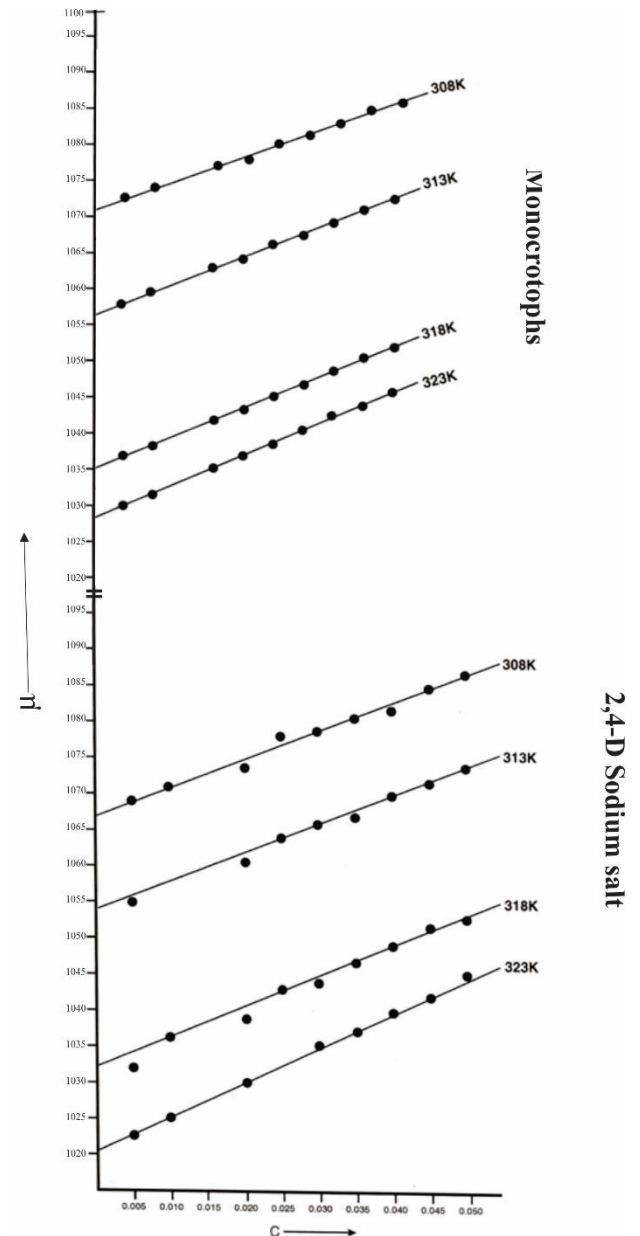

Fig.1. Plots of ultrasonic velocity u(ms–1) vs concentration, C(mol dm–3) of 2,4-D Sodium Salts and Monocrotophos in Methanol at different temperatures (308-323K).
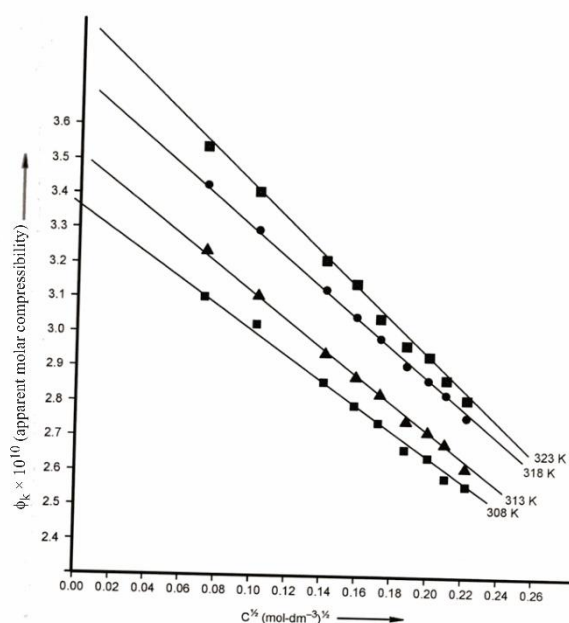
Fig. 2 : Plots of ϕ_k vs $C^{1/2}$ of 2, 4-D Sodium Salt in methanol at different temperature (308-323K).

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PERCEPTION OF DIVERSITY AND INCLUSION INITIATIVES FOR EMPLOYEE INNOVATIVE BEHAVIOR

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ABSTRACT

Purpose: This paper aims to clarify the correlation between diversity and innovative behaviour of employees. Employee creativity and innovative behavior is the organization's hallmark, and employee inspiration for creative and innovative action is primarily determined by the Diversity and Inclusion Initiatives. The conventional authoritarian model of leadership can no longer respond to the psychological characteristics of workers who use new-era job ideas, strategies, and social laws as society develops economically (hereafter, new generation employees).

Design/Methodology/Approach: In this research study, researcher has observed, through the path analysis and structural equation modelling that how both diversity and innovative behavior variables are correlated to each other. Under the heading of employee diversity, there were factors such as age diversity, demographic diversity, organizational tenure diversity, educational history diversity, working experience diversity, faith diversity, and geographic diversity. To assess the influence of these diversity factors on employee innovative behavior, 120 senior managers have been interviewed, primarily in information technology companies in NCR Region to assess the Perception of the employer about Diversity and Inclusion Initiatives for Employee Innovative Behavior.

Findings: The paper provides empirical insights about how diversity brought innovative behaviour in employees. It suggests that Education, Ethnic, Regional diversities have positive impact on the Innovative Behavior of the employees except education diversity which negatively correlated with innovate behavior. It may have been because of generation gap between experienced one and new entrants.

Research Limitations/Implications: Sample size of 120 is not feasible to make a judgment about workforce diversity and challenging to discern meaningful correlation.

Practical Implication: The paper includes implication for the development of various approaches to coping with organizational diversity and provide guidance for successful diversity management to create effective workplace diversity.

Originality/Value: This paper fulfils an identified need to study how workforce diversity can enabled innovative behaviour.

Keywords: Perception, Diversity, Inclusion, Initiatives, Innovative Behavior.

Introduction

Enterprise growth is powered by creativity, and enterprises are constantly dependent on their workers' creative efforts to sustain and boost their productivity (Odoardi et al., 2015). "Next-generation" have increasingly evolved into the new workers for businesses. Traditional leadership models may not be successful in guiding such workers, which is why we are performing this research. Orthodox leadership and governance approaches are being challenged by new generation workers who have different job values than past generations (Hou et al., 2014). An increasing number of analysts are focusing their attention on problems such as high attrition and poor organizational engagement (Cheng & Lin, 2017).

Employers must learn how to handle cultural gaps and human job behaviors as a result of globalization developments and rising racial and gender diversity. Managing workers in a dynamic work setting pose both benefits and obstacles as the working force gets more diverse. Embracing change in the marketplace and the workforce will help you achieve a competitive advantage. Managing workers with differing personalities, interests, and opinions, as well as escaping responsibility when leadership mishandles different job conditions, are both obstacles.

Human resource strategies must be impossible to replicate or mimic for an organization to

retain a competitive edge. Companies should take one of three approaches to organizational diversity. Employees and the company profit most from the incorporation and learning viewpoint. However, being an employer who can successfully handle diversity and escape the obstacles. The capacity of a group to function efficiently as a dynamic entity can be influenced by historical circumstances and the often-complex interplay between different organizational units over time. Best practices for attracting diverse candidates or managing conflicts between employees based on cultural differences can emerge organically and then become codified into the organizational culture. However, the beginnings of diversity strategies are often unclear because they originated from coordination between various organizational fields (e.g., marketing and human resources collaborating strategically with leadership to create recruiting ideas) that happened so long ago that neither the organization nor other organizations could duplicate the procedure.

According to research, having diversity in an organization has inconsistent outcomes in terms of its effectiveness. There is a favorable association between diversity and success in some research, a negative relationship in others, and no relationship in others. Some scholars suggest that, while the evidence for a causal correlation between diversity and consumer growth is mixed, the association may be attributed to other causes that are not considered.

Most managers agree that having a diverse staff benefits the company, but it can be difficult to confirm or measure, particularly when it comes to determining how diversity impacts a company's ability to innovate. However, recent analysis shows that diversity unlocks creativity and fuels business expansion, a discovery that could bolster efforts to ensure that the executive ranks reflect and promote the strength of diversity.

Rather than scientific data, today's diversity and inclusion policies are largely founded on insight and experience. Some organizations in the United Kingdom have banded together to develop benchmarking tools or guidelines. For example, in the United Kingdom, the Equality and Human Rights Commission is a federal department that supports and regulates human rights and seeks to implement equality and inclusion policies through a code of conduct and guidance.

When diversity and inclusion efforts are conducted for emotional purposes or as a public relations tactic, or when employers are not serious, they can have little or no effect. As noted in a qualitative study, managerial techniques to encourage diversity and inclusion can inadvertently promote different forms of disparities and exclusions, which may have unintentional implications of exclusion and which workers can avoid. The degree to which the language of diversity and inclusion truly matches fact and the representation of minority voices in today's organizations needs to be examined. As a result, it is important to make sure that diversity and inclusion strategies are not limited to tokenism, as minority community members view it, and that they are treated as equal by those in the organization.

It is also necessary to note that one size does not always suit everything. It is important to understand that the complexity and importance of aspects of diversity differ across communities, and corporate leaders must be mindful of this. India is widely recognized as one of the world's most populous nations, and Indians have an innate ability to handle diversity. To make this competence aware, Indian leader might start by looking at the underlying assumptions that underpin their perception of diversity and inclusion. In South Asia, for example, issues of exclusion are largely based on gender, but also include caste, clan, and birder, language, income, position, and status as a resident, migrant, refugee, or

internally displaced individual, among other factors. As a consequence, comprehending inclusion necessitates using a local lens and becoming mindful of the relevant subtexts that characterize exclusion inclusion in the organization.

Inclusion, which allows workers to be respected and included by an organization, is used to leverage diversity. It advocates for valuing disparities in and through individuals in organizations by both understandings and overcoming them. The theory of equity and justice is central to the discussion of diversity. Individuals need to belong, to be valued, to be handled equally, and to be recognized, regardless of where they get their name. Investing in diversity, it is argued, benefits organizations in both obvious and economic respects, as well as in other implicit aspects of deeper loyalty, broader well-being, and recognition that they command.

Creating an inclusive community includes moving beyond diversity-based recruiting and recruitment to include holistic approaches to leveraging diversity. It entails shifting the focus from ethnic diversity to cognitive diversity, and then to inclusion, as well as tackling both explicit and implicit inequalities that can stymie acceptance and integration. Employees who are truly included, rather than just lip service, can bring their entire self to work, sharing and giving expression in a manner that allows for fruitful problem solving, imagination, innovation, and improved results in a variety of ways.

Review Of Literature

The term "innovative action" was coined in the 1970s. The organizational, squad and human creative practices are the three levels of innovation. The individual creative behavior of enterprise workers is studied in this article. Employee innovation, according to Amabile (1988), is a new, potentially profitable concept or item that employees can produce, which can help businesses succeed, evolve, and flourish in a competitive environment. The ideas produced during the invention process, according to Woodman et al. (1993), maybe new or have already been used by others. Person innovative activity, according to Zhou and George (2001), requires not only the conception of an innovative idea but also its promotion and execution.

Employee inventive activity, according to Woodman et al. (1993), involves the method of creating new ideas and their effective execution. According to Scott and Bruce (1994), there are three steps to innovation: (1) finding challenges and designing solutions; (2) pursuing approval for their ideas; and (3) developing new standards or models that can be broadly marketed, mass-produced, and then used in large quantities. Person creative activities were divided into five phases by Kleysen and Street (2001): seeking opportunities, producing proposals, forming surveys, endorsing, and submitting.

Employee creative behavior has also been observed by Indian scholars. Employee creative activity is described by Liu and Shi (2009) and Han and Yang (2011) as the development and application of novel and realistic methods when employees perform relevant activities in the company. Employee innovative action, according to Li (2017), is the mechanism by which workers identify challenges, create innovative ideas, encourage, and execute them over the life of the company.

One of the most critical leadership roles of today's institutions is to cultivate creative action (Pundt, 2015; Hakimian et al., 2016). Leadership style has a huge effect on workers' desire to innovate (Lee and Chang, 2006). A leader with a sense of humor, for example, may promote the expression of new thoughts as an imaginative activity (Pundt, 2015). Furthermore, by using their intellect and inspiration, transformational leaders are

effective at motivating workers to innovate (Zhang and Zhou, 2013).

From an Indian cultural viewpoint, progressive leadership, like those traditional leadership types, has a positive influence. When employees are more engaged, they are more creative and they believe their contributions have earned the praise of their bosses (Abdullan et al., 2015). Leadership reinforcement affects employees' creative conduct. Employees are more daring and creative when their bosses back them up (George and Zhou, 2007).

Diversity is characterized as the recognition, value, and celebration of differences among people based on age, class, nationality, gender, physical and mental capacity, race, sexual orientation, spiritual activity, and public assistance status. Organizations are increasingly recognizing that diversity is critical for optimizing efficiency, and now must pay attention to it. (Nair & Vohra, 2015)

Organizations that excel at maximizing diversity, such as recruiting and promoting women and non-white men into senior management positions, and creating an environment that encourages contributions from people of diverse backgrounds, can outperform non-diversity adherent companies or companies that are ineffective at managing diversity in the long run (Perumal, 2010)

According to Randel et al. (2017), collaborative leadership is a collection of constructive leadership practices that can make team members experience a sense of cohesion while also maintaining their individuality. As a result, executives who have an egalitarian leadership model have higher optimistic attitudes and tolerance towards their staff, allowing them to feel more supported by their bosses and produce more ideas (Zhu and Wang, 2011). Such inclusiveness combining motivation and empathy is more effective for young generation workers who have more

innovative solutions but hold opinions that differ from conventional leadership styles.

Values-based approaches to transformation and success improvement are becoming more popular in businesses. Since principles inform the convictions that decide what is most important and what motivates behaviour, they are the cornerstone of decision-making (Schwartz, 2012). Values-based policies should offer a concrete path for putting together "different viewpoints" (Hall and Davis, 2007) to meet important priorities and identify aspects of inclusion and diversity. Organizations also use the Schwartz Theory of Basic Human Values to help explain how to recognise and handle potential. Schwartz draws on previous studies (such as Hofstede's cultural aspects theory) by identifying ten motivationally distinct ideals with core motivators underneath them, as well as describing how they communicate. Values-based approaches offer perspective that can be used to maximise gaps and minimise tension through informed negotiation.

Cennamo and Gardner (2008) examined facets of 'organizational fit' using a values-based study across three demographic categories (generations x, y, and baby boomers), and observed substantial disparities among the younger groups, which valued equality and status job values most. However, there was no significant difference between them in terms of 'extrinsic, intrinsic, social, and altruism-related ideals,' and no generational disparities in perceived organizational values (p902). The EMS must develop capacity to fulfil potential demands, and the gaps in the younger generation are essential factors.

When Moore (1999) looked at various ways to handle diversity, they discovered that establishing diversity authority (e.g., a diversity officer, a diversity council, or an affirmative action plan) is the most successful way to increase diverse managers. The research

demonstrates the efficacy of diversity strategies in increasing the inclusion of women and minorities in the workplace, especially at the executive level. It's worth noting who businesses that voluntarily pursue diversity management do so because their corporate goals align with the interests of women and minorities, such as increasing revenue and client base.

Discrimination is the concept of handling workers differently depending on their skin colour, race, or gender rather than their ability, while fairness is the principle of treating all employees equally and without prejudice. The aim of the discrimination and justice paradigm is to maximise the number of underrepresented employees in a company. As a consequence, one of the benefits of this paradigm is that it increases ethnic diversity within an organisation, which will lead to more equal care.

The second model is one of legitimacy and access. This model applies to a business that takes advantage of its workforce's diversity by facilitating access to a wide variety of consumer markets in order to achieve credibility while selling new goods or services to them. Organizations can reach out to these customers by comparing the demographics of the company to the demographics of the market or vital community. One of the benefits of this model is that it assists the enterprise by offering a motivation-based demand with future strategic advantages.

(Brown-Glaude, 2009) Globalization is a phenomenon driven by accelerated technological growth, implying that global jobs must possess appropriate expertise, be technologically adaptable, and be able to communicate with diverse populations both locally and internationally. This condition allows businesses to need not only professional labour and training, but also the ability to collaborate through cultures. Organizations who can promote and maintain a diverse population are best able to develop their innovation and ingenuity, as well as reach out to more employees and consumers, achieving comparative advantages and increasing sustainability.

Fujimoto et al. (2004) Diversity is a reality in the workplace, and it has resulted in a variety of noteworthy activities among industry, government, and civil society leaders over the years. The findings of a report on group diversity indicated that diversity has a positive impact on organisational performance, with a highly diverse team outperforming a less diverse group in some situations, especially in terms of innovation and job satisfaction. Individuals from various backgrounds now integrate themselves into the group's outlook on how to complete assignments and have access to various opportunities, which improves innovation and success and leads to a more appealing environment and higher job satisfaction.

Research Gap

Even though there is a lot of research on the impact of Diversity and Inclusion, although as far as the impact of Diversity and Inclusion Initiatives for Employee Innovative Behavior is concerned, very few have focused its impact on Employee Innovative Behavior, very few studies have looked at the connection between inclusive leadership and employee innovative behavior. Employee performance and other factors have been studied in depth. Therefore, following objectives have been taken the fill the gap.

Research Questions

1. Does diversity impact innovative behavior in the organization?
2. Does Inclusiveness also impact innovative behavior?

Objectives of the Study

The analysis aims to see how workforce diversity affects employee Innovative Behavior. This will be accomplished by doing a literature analysis and determining the variables that could influence Employee Innovative. The effect of each diversity factor on Employee Innovative Behavior will also be studied. Therefore, the study objective is to assess the impact of Diversity on Employee Innovative Behavior, Inclusion Initiatives and its impact on innovative behavior is also discussed in the paper.

Hypotheses

H1: Diversity and Inclusion Initiatives do not have a positive impact on Innovative Behavior.
H2: Educational diversity, Age diversity, Ethnic diversity, and regional diversity do not have a positive impact on Innovative Behavior.

Methodology

Data were collected from a cross-sectional study and senior level manager ($n = $ `120) from different multinational companies were chosen. Senior level personnel have been asked about their perception about the impact of Diversity and Inclusion Initiatives for Employee Innovative Behavior. Multiple regression analysis and Structural equation modeling technique were used to assess the mentioned objectives. The study was supported by a literature review, which tended to minimize challenges to scientific validity. To validate the relationship between the variables, SPSS version 23 was used to conduct statistical analysis on the study queries, dependent and independent variables.

Working professionals ($n = $ `120) from different multinational companies' senior managers, in the National capital region have been selected and handed over close ended questionnaire for primary data collection and numerical scaling technique was used and responses were rated 1-10. The two ends of continuum represent the two extremes of the measuring phenomena.

Data Interpretation, Analysis & Results

Table 1 Descriptive Table				
	Edu Div	**Age Div**	**Eth Div**	**Reg Div**
N	120	120	120	120
Missing	0	0	0	0
Mean	7.85	7.39	7.82	7.85
Median	8.00	8.00	8.00	8.00
Standard deviation	1.60	1.83	1.59	1.81
Minimum	3	2	4	3
Maximum	9	9	9	9

As depicted in the Table 1 total 120 respondent have been interview for the study and lessor difference in the mean value and standard deviation values indicates that most of the respondent has similar observation and opinion about diversity and innovative behavior.

Table 2 Regression Model Summary

Model Summary[b]				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. The error of the Estimate**
1	0.936[a]	0.876	0.871	0.55438
[a]Predictors: (Constant), Regional Diversity, Age Diversity, Ethnic Diversity, Education Diversity				
[b]Dependent Variable: Innovative Behavior				

R-value of 0.936[a] states that Predictors: regional diversity, age diversity, ethnic diversity, education diversity are positively correlated with innovative behavior and positively impact the behavior in an organization, whereas R Square (0.876) indicated that Predictors: regional diversity, age diversity, ethnic diversity, education diversity explain the innovative behavior by 87%, although they may have been other factors too, which may affect innovative behavior, as depicted in Table 2.

Table 3 Correlations

		Innovative Behavior	Education Diversity	Age Diversity	Ethnic Diversity	Regional Diversity
Pearson Correlation	Innovative Behavior	1.000	0.897	0.821	0.883	0.918
	Education Diversity	0.897	1.000	0.854	0.836	0.923
	Age Diversity	0.821	0.854	1.000	0.825	0.881
	Ethnic Diversity	0.883	0.836	0.825	1.000	0.900
	Regional Diversity	0.918	0.923	0.881	0.900	1.000
Sig. (1-tailed)	Innovative Behavior	0.000	0.000	0.000	0.000	0.000
	Education Diversity	0.000	0.000	0.000	0.000	0.000
	Age Diversity	0.000	0.000	0.000	0.000	0.000
	Ethnic Diversity	0.000	0.000	0.000	0.000	0.000
	Regional Diversity	0.000	0.000	0.000	0.000	0.000
N	Innovative Behavior	120	120	120	120	120
	Education Diversity	120	120	120	120	120
	Age Diversity	120	120	120	120	120
	Ethnic Diversity	120	120	120	120	120

	Regional Diversity	120	120	120	120	120

Pearson Correlation value of 0.897, 0.821, 0.883, and 0.918 for education diversity, age diversity, ethnic diversity, and regional diversity respectively show a positive relationship between dependent independent and dependent variables

Table 4 Anova Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	248.648	4	62.162	202.258	0.000[b]
	Residual	35.344	115	.307		
	Total	283.992	119			
a. Dependent Variable: innovative behavior						
b. Predictors: (Constant), regional diversity, age diversity, ethnic diversity, education diversity						

Thus, the null hypothesis Ho_1 is rejected and the alternate hypothesis Ha_1 is accepted. Table 4 gives us the following regression equation for the relationship between innovative behavior and education diversity, age diversity, ethnic diversity, and regional diversity

$$Innovative\ Behavior = 0.330 \times Education\ Diversity + -0.042 \times Age\ Diversity + 0.290 \times Ethnic\ Diversity + 0.321 \times Regional\ Diversity$$

**Table 5 Regression Coefficients Impact Of Diversity On Innovative Behavior**

	Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Significance
		B	Std. Error	Beta			
1	(Constant)	0.772	0.280		2.754	0.007	Significant
	Education diversity	0.330	0.085	0.342	3.894	0.000	Significant
	Age diversity	-0.042	0.061	-0.049	-0.684	0.495	Non-significant
	Ethnic diversity	0.290	0.074	0.299	3.907	0.000	Significant
	Regional diversity	0.321	0.097	0.376	3.310	0.001	Significant
a. Dependent Variable: innovative behavior							

The intercept value is (0.772), education diversity (0.330) value, age diversity (-0.042), ethnic diversity (0.290), and regional diversity (0.321) that indicates that, except age diversity whose values is (-0.042), make a positive impact on innovative behavior. Hence,

we can conclude that education diversity, ethnic diversity, and regional diversity having a positive impact on innovative behavior, therefore the null hypothesis is to be rejected and the alternative is to be accepted. As far as age diversity is concern it does not have a positive impact on innovative behavior as its sig value 0.495>0.05, hence we accept the null hypothesis in the case of age diversity. The Regression Analysis can be used to validate the following model as illustrated in Figure 1.
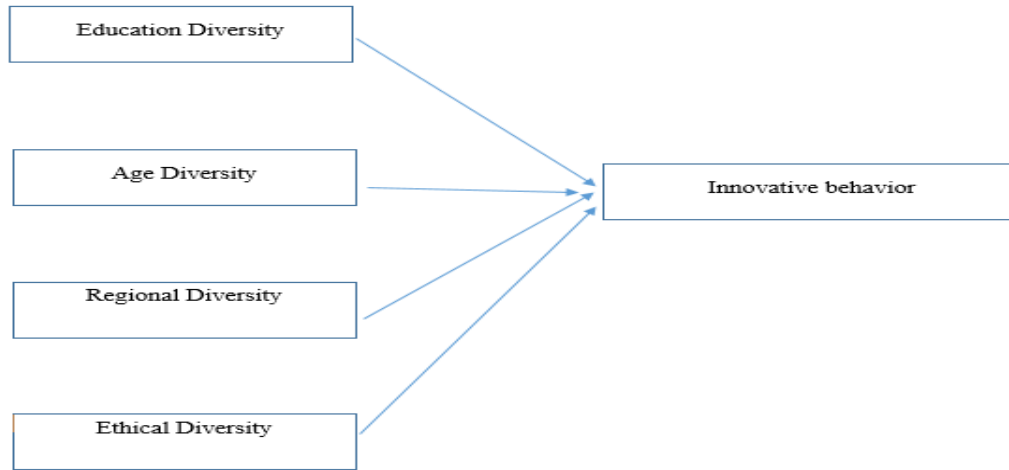
Figure 1 Validated Model Of Impact Of Diversity On Innovative Behavior

The data sets were combined, and a unified model was created to understand the impact of various factors such as education diversity, age diversity, ethnic diversity, and regional diversity on innovative behavior using partial least square, a structured equation model was created that is illustrated in Figure 2 as below:
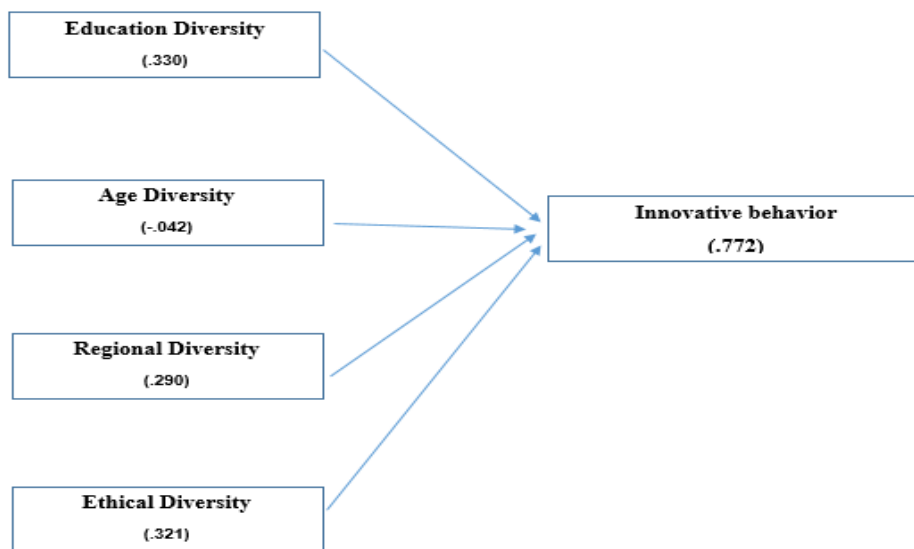
Figure 2 Estimated Model Using Pls

All the four factors education diversity, age diversity, ethnic diversity, and regional diversity have an impact on the innovative behavior of the employees. It is also clear that ethical diversity and education diversity have a much greater impact on innovative behavior as compared to the other remaining factor of convenience.

Conclusion

New generation workers have increasingly been the core part of workplace and business growth today. Since this group's professional

ideals and culture dynamics vary from those of the conventional labor force, many traditional human resource management and leadership models face significant pressure and challenges. Psychological capital may be a strong antidote to such pressures (Shabir et al., 2014). Researcher also concludes that education, ethnic, regional diversities have positive impact on the innovative behavior of the employees except education diversity which negatively correlated with innovate behavior. It may have been because of generation gap between experienced one and new entrants. It is also clear that ethical diversity and education diversity have a much greater impact on innovative behavior as compared to the other remaining factor of convenience.

Limitations

Since statistical experiments usually need a greater sample size to ensure a representative representation of the population and to be considered reflective of groups of people to which findings would be generalized or transmitted, it will be challenging to discern meaningful correlations from the data as the sample size is 120 only. Sample size of 120 is not feasible to make a judgment about workforce diversity and its impact, secondly NCR Region does not represent the different part of country.

Practical Implication

This study is to explore the various approaches to coping with organizational diversity and to provide management with the requisite guidance for successful diversity management in small and large international organizations, in order to demonstrate to the reader how to create an effective workplace diversity by using various diversity management resources hence it would enhance organizational productivity.

Societal Implication

This has been observed in other studies that workforce diversity ensures employee satisfaction and diversity management requires far more than equal work opportunities. Managers should be aware that progress takes time, but they should try to promote it. Dealing with diversity often necessitates creating a safe place for managers and employees to collaborate, such as social gatherings and corporate events where everyone is at ease and there is a relaxed atmosphere where people can talk openly and listen to others. Employees can be directed on how to obtain knowledge by mentoring services. Employees can be offered constructive guidance after they have learned from their experiences and have been good in using the lessons learned to gain progress.

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CHANGING THE WORLD THROUGH SOCIAL ENTREPRENEURS: A REVIEW

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ABSTRACT

"Social entrepreneurship is a buzzword in India and around the world. People find that this concept is a mixture of social services and entrepreneurship, and this combination makes it more attractive and a need for the moment. Globalization has strengthened economic activities on the one hand but has neglected social welfare on the other. As a concept, social entrepreneurship is on the rise in India and around the world, focusing on serving society in a more meaningful way than ever before. Social entrepreneurship is not a new concept, but the importance of this concept has risen to new heights in modern times. Many outstanding social entrepreneurs in India have recognized the importance of this term and accepted this way of doing business, which helps shape society in a very positive way. This research paper is a detailed study of conceptual clarity to help understand and analyze the challenges experienced by social entrepreneurs and finally derive the contribution of successful social entrepreneurs from an Indian perspective."

Keywords: Social entrepreneurship, definition, concept, challenges.

Introduction

Doing business for social purposes is referred to as social entrepreneurship. Altruistic entrepreneurship is another term for it.

Social entrepreneurs bring together business and social challenges to enhance the lives of those who work with them. They don't only assess their success in terms of profit; social entrepreneurs' success implies that they have changed the world in some way.

However, there are differing perspectives on the makeup of social entrepreneurship. Some argue that this definition only applies to businesses that generate money by selling things to customers while also attempting to solve specific problems. Others argue that social entrepreneurs are company owners who employ grants or government cash to tackle social problems.

Customers know that their purchases will assist support a certain cause, whether it's supplying soap to children in need to wash their hands, protect them from sickness, or many other things.

People are drawn to firms that employ social entrepreneurship models because they help solve social problems while spending money on what they want or desire. The rest of this article examines studies on social entrepreneurship in order to better understand how this notion has changed through time. We discussed how social entrepreneurship differs from standard business notions in the research. We also discussed the problems that social entrepreneurship faces.

Meaning of Social Entrepreneurship

Individuals, groups, new enterprises, or business professionals use social entrepreneurship as a tool to design, reserve, and execute solutions for social, cultural, or environmental concerns. This concept might be

Methods

The research is based on secondary data collected from various sources, such as websites, video interviews, case studies, and magazines. This research can also be called explanatory research because it uses qualitative lenses to analyze, explain and explain the important role social entrepreneurs play in their experiences in real-time.

extended to a broader range of organisations with varying sizes and convictions.

According to (Zahra et al., 2009), social entrepreneurship entails strategies and procedures for identifying, defining, and leveraging possibilities for maximising social capital through the creation of new ventures or the innovative management of existing organisations.

An organization can be viewed in the traditional capitalist economic system either as a profit-maximizing corporation whose main aim is to generate profits for its shareholders or as a non-profit organization that tackles and solves social problems. A social enterprise, however, is a modern type of company that can be found anywhere between a profit-maximizing corporation and a non-profit. Unlike an NGO or CSR interference, a social enterprise is "not a charity" because it follows a business model absolutely (Yunus et al., 2010). Also, unlike conventional profit-optimizing companies, social business focuses on maximizing social gains and investigates ways to offer positive impacts to society or the community (Yunus et al., 2010). A social business is a modern type of profit-maximizing business from a structural, organizational perspective, but not a charity that seeks to achieve its social goal in a self-sustainable way (Yunus et al., 2010).

In a review of social entrepreneurship definitions, definitions concentrating on the factor that the primary or the main motive of a social entrepreneur is to create social wealth by solving social problems is the most promising in this field. (M. Tina Dacin, 2011)

Concept of Social Entrepreneurship

Definitions given by different authors explaining the meaning and concept, and characteristics of social entrepreneurship: (Abu-Saifan, 2012).

Table 1 Meaning and characteristics

S.No.	Researchers and Scholars / Year	Definition	Concept and Characteristics
1.	Leadbeater 1997	"Social entrepreneurs are entrepreneurial, innovative and transformative individuals who are also leaders, storytellers, people managers, visionary opportunists and alliance builders. They recognize a social problem and organize, create and manage a venture to make social change."	Leader
2.	Dees 1998	"Social entrepreneurs play the role of change agents in the social sector by: Adopting a mission to create and sustain social value Recognizing and relentlessly pursuing opportunities to serve that mission Engaging in the process of continuous innovation, adaption and learning Acting boldly without being limited by resources currently in hand Exhibiting a heightened sense of accountability to the constituencies served for the outcomes created ."	Change Agent
3.	Bomstein 1998	"A Social Entrepreneur is a path breaker with a powerful new idea which combines visionary and real-world problem-solving creativity, has a strong ethical fibre, and is totally possessed by his or her vision for change."	Persistent Mission Leader
4.	Thompson 2000	"Social entrepreneurs are people who realize where there is opportunity to satisfy some unmet needs that the state welfare system will not or cannot meet, and who gather together the necessary resources (generally people, often volunteers, money and premises) and use these to make a difference."	Emotional Social Value Creator
5.	Brinckerhoff 2009	"A Social entrepreneur is someone who takes reasonable risk on behalf of the people their organization serves."	Influencer

Social entrepreneurship and Traditional entrepreneurship: is there any difference?

Although there are distinctions between social and corporate entrepreneurship, some experts argue that the two are one and the same (Austin et al., 2006; Peredo & McLean, 2006). In other words, businesses can engage in either business or social entrepreneurship, or a combination of the two. In reality, several academics cite groups with commercial, social, and hybrid objectives (Davis, 1997). As a result, in a way, these hybrid cars are pursuing two goals, one of profit and the other of social benefit. However, not everyone thinks that a person or organisation may follow two basic aims and be classified as a social entrepreneur.

It's worth noting, however, that not everyone thinks that a person or organisation may be a social entrepreneur if they follow two fundamental aims.

Challenges faced by social entrepreneur

From the literatures and research done in past, it is revealed that there are several challenges faced by the social entrepreneur. (Hynes, B., 2009) The business model chosen should be adaptable and aid in the accomplishment of the company's goals. This necessitates social entrepreneurs' judgments on how to effectively

combine corporate efficiency while attaining social impact, resulting in a double bottom line. This may be a difficult task for social entrepreneurs: how to align their social business characteristics in a way that is sensitive to changing stakeholder requirements while still providing a cash stream for the company's management. Because they operate in commercial marketplaces yet frequently feel themselves on the edge or disagree with portions of the marketplace, social entrepreneurs may find themselves in a difficult position in fulfilling their aim of creating social value and improving the well-being of targeted communities. This makes it difficult to develop commercial goals that are consistent with the company's underlying social ideals and ethics (Shaw & Carter, 2007). The lack of financial resources, the absence of job stability, and the inability to provide better compensation make it difficult for the social entrepreneur to succeed (Bornstein, 2007). (Hynes, B., 2009) concluded in the research some challenges which are generally faced by the social entrepreneur in order to set and survive the firm. These were access to finance, pricing policies, challenges in recruiting staff and managing several personal issues.

Discussion and finding

Social entrepreneurship is a buzzword in India and around the world. People find that this concept is a mixture of social services and entrepreneurship, and this combination makes it more attractive and a need for the moment. Globalization has strengthened economic activities on the one hand but has neglected social welfare or social welfare on the other. As a concept, social entrepreneurship is on the rise in India and around the world, focusing on serving society in a more meaningful way than ever before. Although social entrepreneurship is not a new concept, its relevance has grown to unprecedented heights in recent years. Many outstanding social entrepreneurs in India have recognized the importance of this term and

accepted this way of doing business, which helps shape society in a very positive way. In this paper, we study about the concept and definitions of social entrepreneurship. We conclude that social entrepreneurship and traditional entrepreneurship is different at the point of altruism and social welfare. Social entrepreneurship is a concept which deals with the welfare of the society, but the path is not so easy for a social entrepreneur to start and survive, hence deals with many challenges such as financing, fundings, lack of government support, lack of resources, retaining employees and much more is a detailed study of conceptual clarity to help understand and analyze the challenges experienced by social entrepreneurs, and finally derive the contribution of successful social entrepreneurs from an Indian perspective.

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TO STUDY THE IMPACT OF COVID-19 ON THE FOOD SUPPLY CHAIN

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ABSTRACT

This paper addresses the problem from the perspective of evaluation, management and communication of risks and offers a series of links to reliable information sites to that Indian food community can turn to respond appropriately to the challenges posed by the situation.

The assessments and recommendations listed here are based on current knowledge about the virus and the management of the disease, as published by authorities and experts, world-class food science and control standards. Mankind is learning about SARS-CoV-2, then every day new information is known that goes modifying the understanding of the dynamics of the virus and the pandemic. It will be fundamental to maintain an active exchange of information and information between the actors of the food chain knowledge, of successful and unsuccessful experiences, for the benefit of all.

Keywords: Supply Chain, Agriculture, COVID -19 pandemic, Logistics, Food Industry.

Introduction

The Covid-19 pandemic has generated an impact of enormous dimensions, at great speed and global in scope. Nobody was really prepared for such a phenomenon and dimensions.

In the food chain, although some industries have experts in food hygiene and have contingency plans at their disposal, people have a great need for explanations and clear guidelines about the characteristics of SARS-CoV-2, the virus that causes Covid19, and how to handle this crisis.

On March 24, 2020, the Indian government declared a strict national lockdown to combat COVID-19. One specific policy issue in this context has been whether, in the face of a national lockdown, food supply chains would remain functional, or whether food shortages will increase the welfare costs of the lockdown.

It is reported that in the month after the lockdown, food arrivals on wholesale markets fell by 64 percent on average (Figure 1) while wholesale prices increased by around 10 percent.
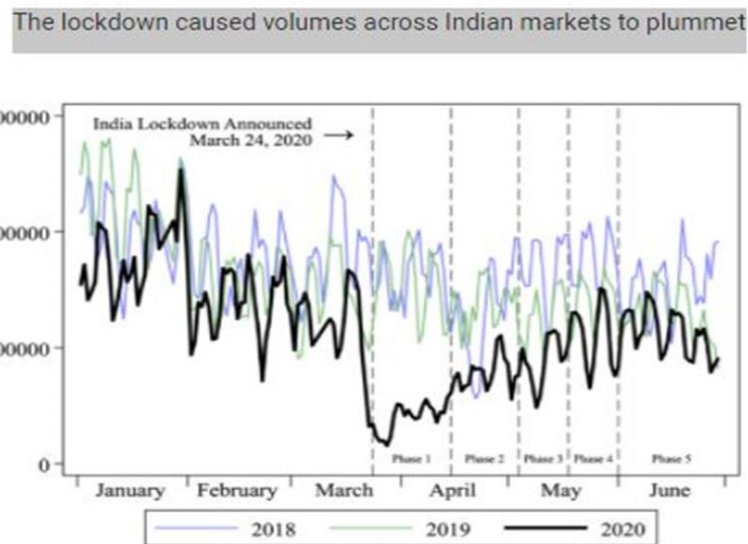
Fig. 1. Food arrivals across India. Source: http://www.agmarknet.gov.in/

A mass migration of migrant labour back to rural hometowns took place when India's nationwide lockdown was declared in March. The harvesting process, which usually begins in mid-April, was totally thrown off balance, leading to serious liquidity problems. According to Grant Thornton, the June crop is amongst those that have been especially hard hit.

The researcher also points out that the supportive infrastructure around India's agricultural sector has also been affected by labour shortages. Storage units and milk processing plants are understaffed, for instance.

Then the transportation business is there. Movement across state boundaries has been severely limited, blocking the movement of crops and thus the selling of them. In addition to this, there is a shortage of auto repair mechanics, agriculture machinery repair mechanics and other support personnel, and you get the picture of a struggling market.


Fig. 2. Agri produce across India. Source: https://www.consultancy.asia/news/3364/covid-19s-impact-on-indias-agricultural-sector

A variety of steps to reduce labour shortage problems are proposed by Grant Thornton. To begin with, the labor available should be used. Unemployment allowances should be provided to staff, while district authorities should deploy the labour available in the most important areas.

In the medium to long term, Grant Thornton urges the government to set up a specialized committee to minimize dependence on manual labor, with a view to mechanizing farming in India. It can mitigate similar risks in the future by using machinery for vital sowing and harvesting operations.

The experts point out the spectrum of export problems underway, apart from these domestic woes. Lockdowns have triggered shortages and backlogs in supply chains in major economies around the world. Approximately half a million tonnes of Indian rice are currently stuck in the supply chains, while perishable crops are not being transported at all for fear of degradation during delayed transit.
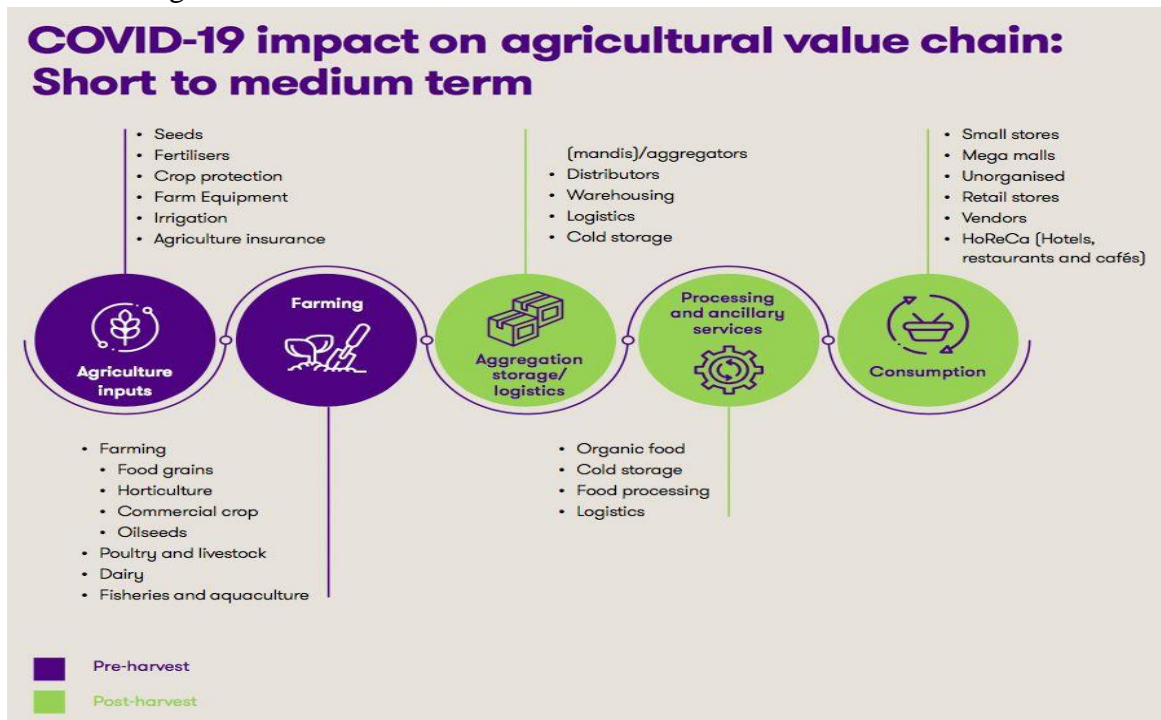
Fig. 3. Covid19 impact on agricultural value chain. Source: https://www.consultancy.asia/news/3364/covid-19s-impact-on-indias-agricultural-sector

Objectives

1. Identification of Covid-19 risk to safety and food supply.
2. What is the best way to prepare for and react to pandemics like COVID-19 pertaining to food supply chain?
3. Provide links to reliable information sites to that Indian food community can turn to respond appropriately to the challenges posed by the situation.

Research Methodology

This research focuses on qualitative approach hence a global peer-reviewed literature search utilized. The analysis starts with a comprehensive overview of existing information, including but not limited to peer-reviewed publications.

The aim is to quickly collect contextualised information that is important to the situation.

As qualitative data is gathered, key knowledge themes are created.

Literature Review

Bakalis (2020) mentions, "When the question of how COVID-19 affects the customer, the demand for food is analysed and it is seen that the demand varies depending on the food retail prices, consumer income levels, consumption patterns, and prospects for shopping. Furthermore, the number of store visits and spending money on food per visit have changed."

"The closing of restaurants and limited delivery food outlets changed the patterns of eating/buying and contributed to an unusual change in demand from food service to retail. Reports found that buying food from supermarkets and using food services had the same ratio as 50 percent before the outbreak; for supermarkets, however, it is almost 100 percent. Although spending money on food was increased per visit, the number of visits to food stores was reduced. During the COVID-19 lockdown, customers experienced decreased availability of some types of foods."

Muscogiuri(2020) says in his article "The COVID-19 outbreak disrupted the daily routine and contributed to boredom, which lead to consumption of high calorie diet. Furthermore, quarantine induced stress in individuals and forced them to eat high sugar content foods, as carbohydrate-rich foods can be used as self-medicating components due to their ability to stimulate the development of serotonin. Such unhealthy eating habits, however can lead to the development of obesity associated with chronic inflammation and severe COVID-19 complications."

Sudha Narayanan & Shree Saha (2020) : In most urban areas, consumer food prices have risen, driven by increased supply chain friction in the form of limited labor availability, higher transport costs (in some cases, twice pre-lockdown costs) and difficulties around logistics. During the first phase of the lockdown (March 24-April 14), this difference between wholesale and retail prices increased sharply and remains wide.

Rawal and Kumar (2020) said "While in theory, the lockdown permitted the free movement of 'essential items' and was meant to enable food markets to operate without impediments, in practice, those involved in the supply of food faced tremendous challenges, including the occasional closure of wholesale agricultural product markets and the restriction and interruption of the movement of vehicles, both across city and state borders"

A. Identification of Covid-19 risk to safety and food supply:

1. Viruses

Viruses are classified as microorganisms, along with bacteria, fungi and yeasts and parasites.

However, viruses:

- They are not living beings like other microorganisms; they are chemical entities with biological activity.
- They do not have a cell wall or membrane, just a kind of bag that contains them, consisting of a layer of fatty substances.
- They do not reproduce like bacteria by cell division but by making copies of themselves by DNA replication.
- To reproduce they need to invade a living cell. They can even invade bacteria, live on them (bacteriophages)
- Viruses can evolve from the genetic material they possess (and despite they are not considered living beings)

2. Covid-19

Covid -19:

- It is a zoonosis that appears to have originated in bats but could be transmitted through other vectors.
- It is caused by a virus that has been called SARS-CoV-2, Coronavirus severe acute respiratory syndrome 2.
- It is only transmitted person to person, in the breath or mucous membranes.
- It has a high contagion capacity, greater than that of most known viruses.
- It is new in nature, so no one has been able to develop immunity in the past.
- It is not transmitted by food. The receptors to which the virus binds are in the respiratory, not other organs.
- It does not replicate in the stomach or intestines.
- It is large and heavy, so it does not travel great distances in the air.
- It is supported by bio aerosols.
- Overall, thermal disinfection was successful in significantly reducing coronavirus infectivity at 60 °C for 30 min, 65 °C for 15 min, and 80 °C for 1 min.
- It is destroyed by the action of most substances used in the food industry on the fatty layer of the virus, including soaps and disinfectants of various kinds (Sodium Hypochlorite, CLOROX, peroxyacetic acid and others)
- It does not persist in food, especially if it is hot or has an acidic pH.
- May persist in chilled or frozen foods.
- May persist on inert surfaces.
- It is estimated that in the carton it can remain for 24 hours, in plastic and stainless steel for 2 to 3 days.

3. Impact of Covid-19

The long incubation period, during which there are no visible symptoms, and the high contagion rate of SARS-CoV-2 have forced social isolation, the closure of cities, ports, airports, even entire countries. For belonging to a vital sector for society, workers in the food chain can move around, which is undoubted, but it makes them exposed to contracting the virus and, therefore, to infect their co-workers and their families. This fact, added to the fact that the isolation can last several more weeks, even months, represents a serious risk to the food supply to the medium term. It is not difficult to anticipate that countries will shortly place restrictions on import and export of food and food raw materials.

For these reasons, it is necessary for the food chain to take action to stop the contagion of its workers, to guarantee food supply and to anticipate actions in case the situation becomes more critical. Additionally, it will be essential identify possible interruptions in the supply of raw materials and inputs and in throughout the food chain and take appropriate measures.

All this in one remote work scenario, that is, in which the leaders of quality, sanitation, safety, etc., possibly they are working from home, not going to plants to carry out their daily tasks of supervision, record review, inspection of suppliers and others.

B. Risk management

Once the initial confusion that meant finding itself in the middle of this situation, the supply chain has begun to develop risk management strategies, addressing both what is happening today as what is anticipated may occur soon.

During the pandemic, the food industry's most valuable resource is people. It is necessary to protect all people, many of them are going to get sick anyway so, to minimize the impact of the problem, special care must be taken with people. Good manufacturing practices are the

basic tool to minimize risk contagion with SARS-CoV-2.

1. Prevention of person-to-person contagion

The approach to preventing person-to-person transmission is based on:

- Avoid touching your eyes, nose, mouth
- Wash hands properly every time it is required. Hand washing with Soap and water is key to eliminating viruses that we may have collected during the day. That is why you must do it several times: before and after eating, before and after going to the bathroom, etc.
- Gargling salt water twice a day may also help when getting up, to reduce viruses that were able to reproduce during the night, and upon arrival at home, to combat those that we could acquire on the street.
- Apply a sanitizing agent with the appropriate frequency.
- Use appropriate personal protection equipment's.
- Always maintain a minimum distance of 2 meters between person and person.
- Separate work shifts.
- Sanitize common areas, bathrooms, dressing rooms, lockers, cafeterias, at least twice a day or more if deemed necessary.

2. Management of positive cases

Frequent testing of plant employees for Coronavirus will be helpful, even if do not have symptoms. Take temperature twice a day, when entering and leaving the plant, and samples for laboratory analysis. In case of finding an employee with high temperature or infected either as a result of laboratory analysis, because he is found sick at work or because the report detects sick, it is recommended:

- Isolate him/her and send home immediately

- Determine who they had contact with in the last 48 hours, inside and outside the company.
- Identify the surfaces they specifically touched and disinfect them appropriately.
- Identify the people who had contact with him and send them home until ordered.
- Follow the return-to-work protocols indicated by the health authorities.
- Have a communications plan designed and ready to go.

3. In the event of a high level of absenteeism

Either because the employees got sick or because they need to be at home and they cannot go to work, it can happen that the plant or a part of it is without staff to process. In this case, it is necessary to hire people quickly, for which one should:

- Simplify the recruitment process
- Hire new people, focused on the risk of Covid-19.
- Use qualified food service employees in food hygiene, who have had to suspend their work due to the closure of restaurants and other catering establishments.

4. Isolation and monitoring

It is possible to contemplate the isolation of key operators. That is, place them in an accommodation close to the plant, with all the safety and hygiene measures, avoid using the public transport.

For many companies, including food services, it would be advisable, in addition to implement body temperature monitoring measures, do rapid tests for detection of the coronavirus to all its employees, frequently, and do the management appropriately for positive or suspected cases.

Additionally, it is necessary to rapidly implement technological tools that enable managers of management systems to guide and support the implementation of good practices and standards of sanitation and protection and have access to the systems of the company from remote workstations.

5. Supplier management

Undoubtedly one of the most sensitive areas of the industry is the supply chain. It is necessary to take measures to avoid shortages of raw materials and key inputs for the production. In this aspect it is useful to:

- Identify key suppliers, review with them their hygiene plans and supply, provide guidance on how to proceed during the pandemic.
- Identify materials that may stop reaching the plant because of its suppliers are at risk of suspending operations or are located in countries that banned the export of food and other essential goods
- Locate emergency providers, contact them. Review the procedure purchases from unapproved suppliers, if necessary, establish alternative distribution mechanisms for products.

6. Visitor's entry

- Restrict and, as far as possible, prohibit the entry of visitors to the plant by the duration of the emergency.

C. Risk communication

All measures taken in the midst of the crisis must be carefully planned and communicated to workers, suppliers, transporters and finally to all interested parties, explaining the reasons for taking them, making sure they understand them and are willing to comply fully. In this communication process it will be very useful to listen to everyone, understand their interests and needs, welcome their good suggestions, and learn from their experiences.

1. Implications for the safety, management and safety culture of foods

While food safety is not directly threatened by SARS-CoV-2, there are several important implications arising from the pandemic:

- The catering sector has been badly affected. In fact, most restaurants had to close their direct contact to the public and only attend home delivery.
- The increase in online orders for food and other essential items.
- Many people who did not do it before having had to start doing it now, so the pandemic has accelerated the process, which is happening around the world since several years ago, to increase online purchases and decrease purchases in supermarkets and restaurants. This phenomenon represents considerable challenges for the food safety and authenticity.
- This emergency has made everyone repeat the importance of washing hands and surface sanitization. After the crisis there will be many more people much more aware of the importance of good practices in manufacturing. It will be a unique opportunity to reinforce the culture of safety in organizations and the concern for food safety of the whole society.
- The need for remote management is also making new risks evident and, with them, the need to resort to new management options, to create new indicators. All this will undoubtedly have very favorable effects on the effectiveness and efficiency of the organizations' quality and safety management systems.
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2. Reliable sources of information

There is abundant information about the proper management of the pandemic, both in the sector of food as in society in general. *Annexure 1* offers a series of links to sites reliable for the purpose of staying informed and oriented on the subject.

Annexure 1:

1. WHO: WHO published several guides on the management of coronavirus and frequently asked questions on Food safety and nutrition.
https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-covid-19-food-safety-and-nutrition

2. FSSAI: FSSAI has an information page on food safety associated with the coronavirus, follow the link:https://fssai.gov.in/cms/coronavirus.php

3. MAITRI (Maharashtra Industry, Trade And Investment Facilitation Cell)
www.maitri.mahaonline.gov.in/Home/Guidelines

4. Ministry of home affairs: https://www.mha.gov.in/

5. Ministry of Health & Family Welfare (Directorate General of Health Services)
https://www.mohfw.gov.in/pdf/GuidelinesformanagementofcoinfectionofCOVID19withotherseasonalepidemicpronediseases.pdf

6. National center for disease control

https://ncdc.gov.in/index1.php?lang=1&level=1&sublinkid=703&lid=550

Conclusions

The impact of the Covid 19 pandemic has influenced the dynamics of the supply chain globally. Disruption of the logistics system and food distribution from producers to consumers, on the scarcity of food supply, have led to an increase in the prices of several commodities, including increased marketing margins of several necessities.

The impact at the producer level, though, was minimal affecting the process and quantity of production, but it occurs limited absorption of products due to lockdown compared to the like conditions before the Covid-19 pandemic to various destination markets constraints for farmers as producers. In addition to the number of products cannot be marketed, the price of the product decreases and in the end the farmers experienced a loss in their farming.

It is of utmost importance to assess the supply chain in terms of business processes or operational resources for potential impacts and disturbances due to supply or logistics delays, as well as delays in manufacturing processes, because of the Covid - 19 pandemic. When a disruption occurs, locate possible providers or other vendors that may assist the company's business operating processes and services.

Continuing the supply flow in the food sector is one of the most critical sectors in a pandemic. Preventing the food crisis and that the negative impact on the global economy is crucial. Although no major problems in the food supply chain have been identified so far, the future remains unclear. Consequently, the seriousness of the situation must be understood by each nation and steps can often be tightened or loosened according to the spread of the pandemic. To adapt to the problems in the food supply chain, the supply chain should also be dynamic enough.

Suggestions

Effective steps are required to address supply chain disruptions caused by the Covid-19 pandemic. The efforts made are not solely the responsibility of the government but are shared by the entire society. Between the priority of

handling health and the provision of food needs, efforts to organise and synergize policies in handling the Covid-19 pandemic are required in the supply chain for food commodities.

It is recommended that the Ministries of Agriculture, Health, Trade, Transportation, Industry, and Local Government, as well as other relevant agencies, work together to ensure smooth supply chain activities for the provision of basic food on a national and regional level.

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MULTI-LEVEL STATCOM DESIGN AND SIMULATION ON CASCADED TOPOLOGY

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ABSTRACT

An inverter with a fallen H-connect is used in this paper to examine the intensity framework for the remuneration of receptive power. There must be some kind of control strategy in place for any framework used to calculate the immediate responsive power. The chosen exchanging methods play a significant role in controlling the staggered inverter. In order to verify the validity of such a model, the MATLAB/Simulink recreation consequence was proposed. It is one of the reality gadgets that speak to the staggered system, the STATCOM, Using PWM for STATCOM's dynamic power channel and for enhancing transient solidity is essential for the design of this device.

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Keywords: Multilevel Inverter, Pwm, Statcom

Introduction

Because of the increasing demand for minimal effort, the use of intensity sources has led to an increase in the use of inverters, which have become more resistant to fluctuations in power. An alternative to conventional static VARs that use thyristor-controlled reactors has been recognised as the STATCOM, which uses voltage source inverters. Balance in the power framework can be achieved by dealing with and controlling responsive power. While the AC framework voltage and the inverter formed voltage are connected, the control is provided by this connection. Dynamic and receptive power are both zero when two voltages are synchronised. An AC yield waveform is the primary objective of this converter. It is also possible to use a bidirectional current directing switch for additional adaptability and usefulness. A variety of converter designs are available, including the single phasehalf connect, which is a one-leg convertor made up of two exchanging elements. For single-stage applications, the H-connect VSC is the most popular choice because, with a similar DC input voltage, the full scaffold's yield is twice that of the half scaffold. Recently, many mechanical applications have begun to call for high power outputs. There are, however, some machines in the endeavours that necessitate medium or high power. Use an incredible hotspot for each mechanical load could be beneficial to some of the motors that need a lot of power while hurting the exchange loads. In some cases, inverters are used to convert low-voltage DC power sources to AC power in order to keep devices running on AC control. High-power and medium-voltage applications have been able to use the inverter since 1975. The stun inverter is based on an inverter and is used in high-power and medium-voltage applications today. The awe-inspiring inverter is made up of a few switches. The edges of the action switches in the amazed inverter are essential. Through strategies for the movement of voltage steps, the multilevel inverter is able to reach high trading voltages that depend solely on the rated power devices. In two social events, a variety of topologies are requested depending on the amount of self-ruling dc source that is available. Topologies such as the diode cut, flying capacitor (FC), and H-associate are the most commonly used (CHB). When it comes to NPCs, they're basically just two two-level voltage sources that are stacked on top of each other. Flying capacitors replace the fastening diodes in the FC topology, which is similar to the NPC in complexity. Something like two single-arrange H-associate inverters describe CHBs inverters. The inverters are powered by fundamental trading repeat and high trading repeat PWM procedures. Reduced risk and increased profitability have been achieved. A PV cell or battery must be connected to each dc source in the CHB MLI for each measurement to be accurate.

Static compensator (STATCOM), thyristor traded capacitors (TSC), static compensator (STATCOM), static VAR compensators (SVR), and static synchronous plan compensators (SSP) (SSSC). Static synchronous

compensators are more responsive than standard VAR compensators, but they are also more expensive. In the field of high-control medium-voltage imperativeness control, multilevel inverter advancement has emerged as a primary alternative only recently. For example, the ability to operate at high voltage levels, the use of smaller semiconductor devices and the higher number of voltage levels in the yield volt are all positive aspects of amazed converters when compared to conventional two-level converters. Shockingly, stunned topology also shows lower total symphonious twisting (THD) and allows for a decrease in trading repeat. As a result, the use of awe-inspiring topologies combined with power quality conditioners, such as the Static Synchronous Compensator (STATCOM), can improve control quality and adequacy in allocation systems. In the last decade, there have been a few remarkable topologies [8,9]. All other stunned topologies have been improved upon, but NPC is the most advanced. To compete with the NPC, two converter topologies may be used: the FC and the symmetric or asymmetric cascade H bridge converter (S/A H-Bridge Converter) (CHB) In this paper, the divide-and-conquer method of alteration was used. CHB inverters can effectively increase the number of yield voltages by increasing the number of H-range cells. This paper gives a STATCOM a PI controller centered eleven phase CHB amazed inverter for the present consonant, voltage flash and responsive power easing of the nonlinear burden.

Multilevel Inverter Topologies

Various multi-level inverter topologies have been integrated with DSTATCOM in order to meet energy needs. All of these are multilevel inverters, including diode clamped, flying capacitors, and cascaded H bridges.

The table below compares the three multilevel inverters and explains why we chose the cascaded H-bridge inverter. This comparison is based on the voltages on each stage, the number of output levels, and the number of switches available.

There are a variety of power levels for the STATCOM depending on the application. The STATCOM application has three primary regions based on different power levels.

STATCOMs at medium and high power levels necessitate a high-power converter that frequently exceeds the power-handling capacity of a two-dimensional converter.

Convertors with two levels Arrangement/parallel association of STATCOM devices. The two-dimensional converter is typically used for high-power applications and for boosting the DC transport voltage above the voltage rating of an individual switch. In the same way, in this case, the arrangement of low-appraising gadgets works like one of the switches depicted in Fig. 2.1. However, due to the different dispersing times of semiconductor devices, the accompanying issues must be thoroughly considered to avoid voltage-sharing issues among the switches. The electrical and thermal properties of semiconductor devices should be matched in a similar change. In order to avoid voltage imbalances, the exchanging must be synchronised precisely. The switch's killing procedure, like its entryway flows, necessitates additional attention. As a result of these limitations, power distribution occurs between transmission and exchange with the goal of restricting the frequency of exchange. Resulting in a moderate framework reaction and massive yield channel circuits. Expanded parameters are needed to compensate for transient voltage imbalances and to achieve static voltage adjustments. The longer the exchanging time, the more misfortunes it may bring about. To connect to transmission systems, a stage up transformer is still needed despite an increase in the switch's blocking voltage in the two-level converter. The two-level converter outputs of the symphonious models are expected to be coordinated in additional efforts.

Using attractive transformer-coupled multi-beat converters [5] is another possible method for achieving such high power requirements. Staircase voltage waves are orchestrated by changing transformer turns proportions with convoluted crisscross associations in standard attractively coupled multi-beat converters. Symphonious twisting and high voltage can be achieved by utilising a 48-beat converter that has eight 6-beat converters linked together by eight crisscross game plan transformers, a symphonious crossing out system, or by utilising Wye/Delta and Delta/Delta linkage

transformers and modern control plans. 8 VSCs are used for both the arrangement and the Shunt side of Unified Power flow Controller (UPFC) [13] according to this patent. The voltage waveform is combined using entangled crisscross transformer associations to ensure that the THD (Total Harmonic Distortion) guidelines are met at the end of the process. Tennessee Valley Authority (TVA) in northeastern Tennessee introduced the first 100 MVA STATCOM in 1995 at the Sullivan substation [14]. There is a need to control 161kV transport during daily stack cycles to reduce activity on a 161kV/500kV transformer's tap changer. Two-level VSCs with complex-interface attractive circuitry make up the 48-beat power converter in its 48-beat power supply unit. An arrangement of five door kill (GTO) thyristors is used as the primary switch in this two-level VSC. This STATCOM employs a 60 Hz staircase as its control conspire. It is because of GTOs' moderate exchanging rate that ending points of a yield waveform are settled; in turn, the abundance of each yield waveform is limited by trading the dynamic intensity of the DC-interface capacitor with the power lattice. Some of the TVA-STATCOM framework's weaker purposes have been raised since it began operating.

As discussed above, some of these powerless points were due to the use of arrangement-related exchanging gadgets. The VSCs were designed to use a three-level design rather than a two-dimensional approach previously used in the TVA STATCOM project. Regardless, this structure still employed a multi-beat approach. The drawbacks of this multi-heartbeat game plan with attractive transformer coupling strategy are: I they are expensive, (ii) they create around 50 percent of the total misfortunes of the framework, (iii) they involve up to 40 percent of the all out framework's land, (iv) they cause issues in charge because of DC polarising and flood overvoltage issues coming about because of immersion of the transformers in transient states, and (v) they are inclined to dissatisfaction. An attractive coupling strategy for achieving higher-rated converters can be achieved using this method. The staggered converter is an appealing alternative to the previously discussed topologies and the most

recent advancement in the field of high power converters..

Cascaded H-Bridge Multilevel Inverter:

Beneath H-connect inverters are used instead of DC control sources. Switches are numbered from one to four on these inverters. These four switches are capable of creating a wide range of different soundscapes. In addition, each time the inverter falls, it has to switch over to a new source of power. There are a variety of methods for bringing down the voltage of an inverter. With (a)extremely low mutilation, the staggered-state fall inverter is able to produce an incredible yield voltage. With low all-out consonant distortion, (b) it may be capable of delivering the most current information. (c) They have the ability to work at a high rate of repetition. IGBT/DIODE has been used as a power semiconductor
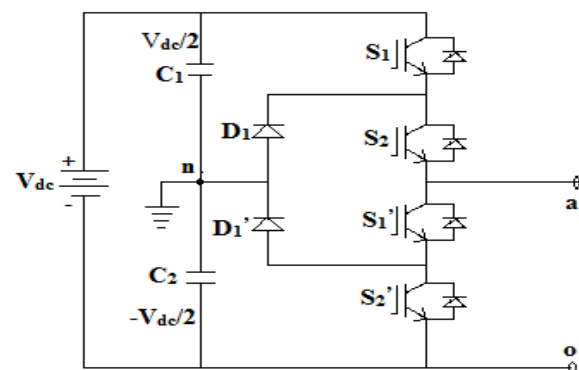
Fig 1 Cascaded h-bridge multilevel inverter

In addition to the numerous ways in which electricity can be of poor quality, the reasons for this are numerous as well. Power quality (PQ) issues such as music, gleam, and irregularity have emerged as serious concerns as nonlinear and electronically exchanged devices become increasingly common in distribution frameworks and businesses. Likewise Homeless people and voltage droop are just two examples of PQ issues caused by system flaws such as lightning strikes on transmission lines and capacitor bank swaps. Custom power (CP) gadgets based on voltage–source converters (VSCs) are increasingly being used to alleviate these PQ issues in power distribution frameworks. Configuration and unbalance in a heap can be compensated for with the help of what is known as the Shunt Dynamic Channel (also known as the Shunt Converter). For

example, an arrangement converter (also known as the dynamic voltage) can make up for voltage list and twisting in the supply voltage to ensure that the voltage over a sensitive load is superbly controlled by a voltage regulator. The power conditioner's control procedures play a critical role in its overall operation. To generate reference signals for the shunt converter, it is common to use the momentary power hypothesis. Momentary responsive power hypothesis is used in pivoting reference outline to smother the music and address the power factor in a more comprehensive strategy. The shunt converter's pay flows are controlled by a flimsy rationale.

Methodology

On a rotating flow power transmission network, STATCOM serves as a guiding device. Depending on the voltage source converter in the power hardware, it can serve as a source or sink of responsive AC capacity for a power network. It can also produce dynamic AC power if it's connected to a source of intensity. Figure 1 shows the standard STATCOM setup, while figures 2 and 3 show the standard DVR setup and a schematic diagram. It belongs to the FACTS gadget family. SVCs and STATCOMs are used in transmission systems to increase power exchange capacity where post-contingency voltage criteria or voltage loss of burden proabability limit the amount of power that can be exchanged. It's difficult to find the right balance between dynamic and exchanged pay. It is the goal of cantrol frameworks to keep the typical working point within a dyanamic range of the SVC or STATCOM. Essential to a STATCOM is the voltage source inverter (VSC), which converts dc voltage into recurrence and phase. Voltage-sourced converters for utility applications can be studied in a variety of ways. Pulse width modulation (PWM) or a slew of converters are employed based on musical and unfortunate considerations. Asymmetrical ratings for inductive and capacitive receptive influence are built into STATCOMs. This is why they are called "statcoms." It is through the use of an

equalisation strategy that a converter's trading limit can be determined. The change technique must ensure that the voltage created at the converter's output is as close to the ideal voltage as possible. The goal of the experiment is to apply standard change methodologies to the awe-inspiring case, in which the enormous number of cells provides clear decisions for the converter. ' For example, trading hardship decline, uniform trading incident scattering, consonant show upgrade and typical mode voltage minimization all revolve around improving some aspect of the converter. Stunned converters are most familiar with these change frameworks. The most important trading modulators set a trading limit so that each cell receives a single reward for each focal cycle it is involved in. The trading limit for multicarrier PWM is determined by a comparison of transporters and a reference banner's performance. Significant and transporter-based changes can be found in cross breed PWM. Each control cycle, Space Vector Modulation (SVM) considers all possible trading states and select the best blends to achieve a yield voltage with proportional voltage/second as the reference regard. This section provides a detailed description of each modulator. The trading headings for the converter are also worth mentioning because they can be directed by a quick result of the general rather than by a submitted equalisation organisation. converter controller.
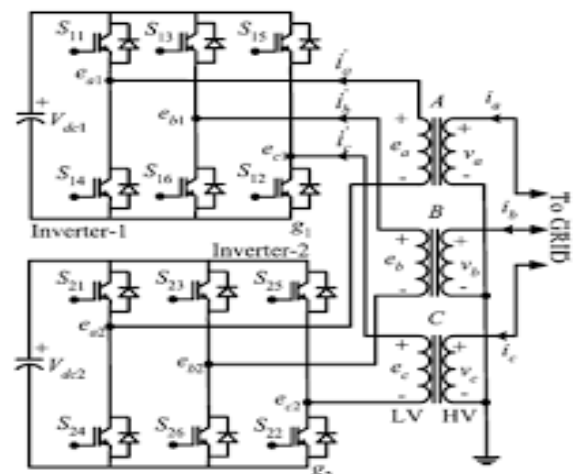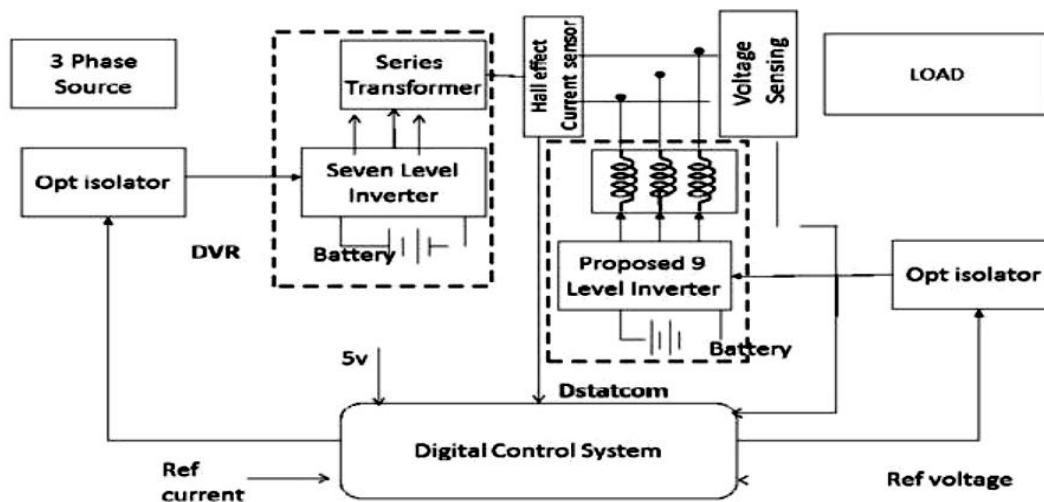

Fig 2 Generalized Diagram

Fig 3 Proposed Diagram of the project

Conclusions

An investigation into Cascaded H-Bridge (CHB) converter control and guidance for STATCOM applications has been completed. The system execution under balanced and unbalanced action has been examined, with a focus on the star and delta relationship between the stage legs that include the converter, in an effort to highlight the central focuses as well as the difficulties and potential entrapments that this type of topology presents for STATCOM applications. The system. General control structure for CHB-STATCOM has been depicted following an audit of standard amazed converter topologies that are available in the current market. Guidelines for tuning the particular control circles have been displayed, and dynamic execution has been attempted through diversions. The Stage Shifted Modulations (PS-PWM) technique encounters a non-uniform power distribution among the specific cells that are involved in the stage legs of the converter, resulting in the need for additional control circles to ensure that the different DC-capacitor voltages do not separate from the reference regard in actual use. Where it has been demonstrated that the non-uniform

unique power assignment results from the association between the cell voltage and the base-band music (when a low-trading repeat for the individual cells is picked) of the current, as well as poor annulment of the transporter side-band music (mostly in case of high-trading repeat assurance).

It has been shown that by ensuring that the repeat guideline ratio is properly maintained, the power movement of the various cells in a comparative stage leg can be more evenly distributed.

Individual controllers will no longer be required to modify the overall structure's security as a result of this decision. The cells masterminding estimation discussed in Chapter 4 is another strategy for the individual DC-interface voltage changing discussed in this chapter. When the CHB-STATCOM isn't exchanging current with the system, the two methodologies aren't able to provide suitable individual modifying (here implied as zero-current mode). This is especially critical for the CHB-STATCOM, which is star-related, due to the lack of a closed path for the current (for example, in the delta configuration).

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