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***Dr. R. V. Bhole***



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## **Digital Payment Adoption: Review (2015- 2020)**

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### **Abstract:**

Millions of people in developing nations could see a major improvement in their quality of life thanks to digital payments' widespread financial inclusion potential. These emerging nations have not, however, generally embraced digital payment methods, despite the potential of these technologies. This study reviewed the literature on digital payment uptake and evaluated the different motivators and deterrents. After reviewing the literature, it was found that most research studies employed either the tam or the untaught theories. Research indicates that customers' expectations regarding the success of their digital payment transactions are the most important element determining their behavioral intention to utilize digital payments. Additionally, it was discovered that adoption of digital payments was significantly influenced by convenience of use. Perceived danger and trust are also seen as barriers to the adoption of digital payments, considering the factors that encourage and hinder their use.

**Keywords:** Digital Payments, Online Payments

### **Introduction:**

India is going through a major transition as a result of using digital payment methods. A new era of efficiency and convenience in banking and financial transactions has been ushered in by digitalization. Through a number of programs and regulations, such as the 2015 launch of the Digital India campaign, the Indian government has played a significant role in promoting the use of digital payment networks.

With the government pushing for a cashless economy and more digital payment infrastructure being available, the use of digital payment systems has surged in India in recent years. Payments for a range of services and goods may now be made quickly and securely thanks to the growing popularity of digital payment platforms like Paytm, Google Pay, PhonePe, and others.

The proliferation of cellphones and the Internet has been one of the main factors driving the acceptance of digital payments in India. India is now the second-largest internet and smartphone market in the world, with over 750 million Internet users and 500 million smartphone owners. More consumers are now able to use digital payment platforms and carry out financial transactions online thanks to reasonably priced smartphones and data plans.

### **Objectives:**

1. To study the idea of cashless transactions and digital payment systems.
2. To understand the effects of digital payment methods
3. To understand the benefits of transactions without cash
4. To understand the advantages and disadvantages of India's e-payment system

5. To be aware of the issues with the digital payment system

### **Research Methodology:**

The methodology is used for the paper is secondary data based research paper and it is conceptual research paper of Digital Payment system.

### **Digital payment method**

**Banking card:** Banking The banking industry offers a variety of cards to reduce the time needed for transactions. More security, ease of use, and control are available to customers with this payment option than with any other. There are numerous card kinds. Rupay, Mastercard, Visa, and so forth give the user greater security when utilizing them. Payment cards enable customers to make purchases in physical places, online, over the phone, and through mail-order catalogues. They facilitate easy transactions by saving time and money for both clients and retailers.

**USSD:** The Unstructured Supplementary Service Data (USSD) channel is utilized by the cutting-edge payment service \*99#. Without internet access, users can utilize this service for mobile banking. The \*99# feature allows money transfers between individuals without the use of smartphones or the internet. The \*99# service was introduced to provide banking services to all citizens of the nation. On their mobile device, users can use the same number provided by all telecom service providers to transact utilizing an interactive menu. Customers can use this to check their balance, send money, receive a short statement, and more.

**Adhar enabled Payment system:** AEPS is a bank led model which allows online interoperable financial transaction at PoS (Point of Sale or Micro

ATM) through the Business Correspondent or Bank Mitra of any bank using the Aadhar authentication.

**UPI:** The Unified Payments Interface (UPI) system combines many banking functions into a single mobile application by enabling the integration of different bank accounts. It is used for receiving and sending money, paying bills, and other things. It is currently becoming more and more well-liked among Indians. The beneficiary's account number is not frequently needed to be remembered, making it an engaging and simple to use feature. The customer can quickly pay and view their transaction history.

**Mobile Wallets:** Numerous mobile wallets are accessible, and every bank has a unique application. Through a mobile wallet, the customer can carry digital currency. Customers can link their credit or debit cards to their mobile devices through wallets to complete transactions. The digital wallet must be connected to a specific person's account in order to receive the funds. In India, some of the popular mobile wallets are Paytm, Freecharge, Mobikwik, Airtel Money, Jio Money, SBI Buddy, itz Cash, Vodafone M-Pesa, Axis Bank Lime, ICICI Pockets, and Speed Pay.

**Point of sales:** Sales are made at a point of sale (PoS). It enables Proof of Stake holders to obtain funds from their clients through swapping. Additionally, there is no need to visit a bank to complete a purchase or sale transaction. Shops define a point of sale (PoS) as the location where a customer completes a transaction, such a checkout counter. However, the GPS system, internet, and merchant bank account are required.

**Internet banking:** Also referred to as online banking, e-banking, or virtual banking, internet banking is an electronic payment system that enables bank clients to transact via the bank's website by supplying their ID and password.

**National Electronic Fund Transfer: (NEFT)** A nationwide payment system called National Electronic Funds Transfer allows money transfers between any bank and any branch. Through the use of the system, individuals, businesses, and corporations can electronically transfer money between any bank branch and any other individual, business, or corporation that has an account with a bank branch nationwide. In addition to account holders, anyone can send money to another person's account by putting money from any location. Nevertheless, the maximum amount that may be transacted in cash using this service is Rs. 50000. Additionally, individuals can only utilize this facility during business hours.

**Real Time Gross Settlement (RTGS):** RTGS allows money transactions to be settled one by one, order by order. "Real Time" refers to processing instructions immediately upon receipt as opposed to later. The payments are final and non-refundable because the monies settlement is recorded in the

Reserve Bank of India's records. When transferring big amounts, RTGS is employed. Clients may send up to a maximum of 2 lakh, with no upper restriction. When banks are open, RTGS is usable.

**Electronic Clearing System (ECS);** ECS is a substitute payment mechanism for things like phone and power bills, insurance premiums, card payments, loan repayments, and utility bill payments.

**Immediate Payment Service (IMPS):** IMPS provides a mobile-based, instantaneous, round-the-clock interbank electronic fund transfer service. With IMPS, you may send money quickly and affordably throughout India via ATM, internet, and mobile devices.

**Mobile banking:** With a specific software program, mobile banking is a portable system that banks offer to their customers on their smartphones or mobile phones. For that reason, banks and other financial institutions supplied it. Every bank offers a Windows and Android mobile banking app.

**Micro ATM:** A micro ATM is a gadget designed to provide basic banking services to one million business correspondents. Business Correspondents can conduct immediate transactions using the mini ATM. It facilitates instantaneous transfers and withdrawals.

### **Digital Payment Ecosystem in India**

The Digital India program promotes digital payments in all national divisions with the goal of creating a "Faceless, Paperless, Cashless" society. In order to provide every person with easy, affordable, and efficient access to safe and easy digital payment facilities, the Indian government has made the promotion of these services a top priority. The goal is to formally include every citizen in digital payment services.

### **UPI: Revolutionizing Digital Payments**

Additionally, the Indian government has implemented a number of regulations to encourage the use of digital payments, such as the 2016 launch of the UPI (Unified Payments Interface). Using a mobile device, UPI is a payment system that allows for immediate money transfers between bank accounts. With over 1.25 billion transactions valued over \$24 billion in March 2021 alone, it has greatly increased in popularity in India. With its ease of use and security features, UPI has completely changed the way people trade money in India. The National Payments Corporation of India (NPCI), Digital India, and BHIM (Bharat Interface for Money) are just a few of the government programs that have helped to increase the use of digital payments in India.

The use of UPI has accelerated India's transition to a cashless economy and helped establish digital payments as a routine practice. Up to 346 banks have incorporated the UPI interface by August 2022, generating an astounding 6.58 billion

financial transactions valued at over Rs. 10.73 lakh crores.

UPI now makes up more than 40% of all digital transactions in India due to its widespread use. Due to this platform's ability to provide quick and safe bank-to-bank transfers, even for modest amounts, small enterprises and street vendors have benefited. Furthermore, UPI offers migratory workers a hassle-free way to transfer money. With only a quick scan of a QR code, its intuitive technology facilitates smooth money transfers with little need for human participation.

#### **UPI: A Saviour during COVID-19 Pandemic**

The Covid-19 epidemic has brought even more attention to UPI's importance because of how quickly its use has increased and how easy and frictionless its transactions may be.

India has accelerated the implementation of digital payment solutions due to the COVID-19 epidemic. More people are using digital payment platforms to complete transactions as a result of social distancing policies and physical store closures, which emphasizes the necessity for a dependable and effective digital payment ecosystem. The pandemic has also led to a rise in the use of contactless payment systems including NFC-based payments and UPI QR codes.

#### **India's Payment Future**

The introduction of digital payment technology has resulted in a dramatic transformation of the payment landscape, making India's payment future seem bright. India's payment future is primarily driven by innovation, financial inclusion, and consumer experience. In order to give the unbanked population, especially in rural regions, low-cost, user-friendly financial services, the government and financial institutions are utilizing technology. The nation has implemented programs like Aadhaar, Jan Dhan Yojana, and mobile payments, and as a result, more people are now part of the formal financial system.

The payment ecosystem is shifting its focus to offering a secure and frictionless payment experience, with a greater emphasis on the customer. In order to encourage digital payments, digital payment providers work with retailers to create loyalty programs, cashback deals, and other incentives. With the rise of innovative payment systems like UPI, Bharat QR, and Bharat BillPay, users can now make digital payments easier and more simple. The expansion of India's payment future is anticipated to be driven by the government's push for digital payments through programs like Digital India and rebate schemes.

#### **Challenges:**

Adoption of digital payment networks is not without its difficulties, nevertheless, in India. The first issue is that a sizable section of the populace need digital literacy. A lot of individuals,

particularly in rural regions, need to learn more about digital payment methods and their advantages as well as how to use them. The concern over security and data privacy is the second difficulty.

India needs to overcome a number of structural and technological obstacles in order to fully realize the potential of digital payments. The increase in cybercrime, which puts a significant risk to the security and dependability of online transactions, is one of the most talked-about subjects. Creating strong cybersecurity defenses and fraud prevention plans to protect digital transactions will be necessary to meet this challenge. The transaction costs of digital payments present another difficulty and may deter adoption, especially for low-value transactions. Adopting cutting-edge payment systems that provide convenient and affordable payment options will be necessary to reduce transaction costs.

#### **Advantages of Digital Payments:**

##### **1. Convenience and Accessibility:**

**Digital Wallets and Mobile Apps:** With digital payments, consumers can transact whenever and wherever they choose, with unmatched ease. Users only need to tap their cellphones to manage their funds and make payments thanks to digital wallets and mobile apps.

**Quick and Effortless Transactions:** The main feature of digital payments is speed. Quick transaction processing removes the need for paper money and cheques. This effectiveness is especially useful for online purchases and in hectic work settings.

##### **2. Enhanced Security Measures:**

**Encryption and Authentication:** Robust authentication and encryption mechanisms are used by digital payment platforms to safeguard private financial data. By doing this, security is improved and the possibility of fraud or illegal access is decreased.

**Biometric Authentication:** Biometric authentication is a feature that many digital payment systems use to increase security. Unique and safe ways to confirm user identity include fingerprint, face, and iris scanning.

##### **3. Record-Keeping and Analytics:**

**Transaction History:** Digital payments produce a transaction history that is extensive. It is simple for users to monitor and analyze their spending trends, which offers insightful data for financial planning and budgeting.

**Data-Driven Insights:** Companies can use the data that digital payments create to learn more about the behavior of their customers. Better customer experiences and tailored marketing strategies are made possible by this data-driven strategy.

##### **4. Global Transactions and Financial Inclusion:**

**Cross-Border Transactions:** Cross-border transactions are made easier by digital payments,

which are not limited by physical locations. This promotes worldwide trade and commerce, which is especially beneficial for companies having a global presence.

**Financial Inclusion:** By giving people in underserved or rural locations access to financial services, digital payments promote financial inclusion. Payment options using mobile devices enable people who might not have access to regular banking services.

#### **Disadvantages of Digital Payments:**

##### **1. Security Concerns:**

**Cybersecurity Threats:** Cybersecurity attacks can still affect digital payments even with strong security measures in place. Risks such as identity theft, phishing, and hacking can jeopardize the privacy of financial information.

**Fraudulent Activities:** The digital environment gives con artists the chance to carry out a range of fraudulent operations, such as unapproved transactions and con games aimed at gullible consumers.

##### **2. Technological Dependency:**

**System Outages and Downtime:** Infrastructure related to technology is necessary for digital payment systems. Cyberattacks or technical issues can cause system outages or downtime, which might affect the availability of funds and impede transactions.

**Lack of digital literacy:** The technologies used for digital payments are not known or comfortable for everyone. People who are not tech-savvy or do not have access to the required tools may be left out of the digital divide.

##### **3. Privacy Concerns:**

**Data Collection Practices:** Privacy problems are raised by the massive data collection that digital payments entail. The quantity of personal data that payment systems collect and use for tailored advertising may make users uneasy.

**Monitoring and Tracing:** Electronic transactions may be monitored and traced. This degree of surveillance may be too much for some users, which raises concerns about how to strike a balance between security precautions and personal privacy.

##### **4. Dependency on Infrastructure:**

**Dependency on Internet Connectivity:** A steady internet connection is necessary for digital payments. Conducting digital transactions may provide difficulties for users in locations with inconsistent or limited internet access.

**Dependency on Electronic Devices:** For those without access to or ownership of electronic equipment, such as laptops or cellphones, the dependence on these gadgets may be a barrier. Understanding the benefits and drawbacks of digital payments is essential for individuals, financial institutions, and businesses alike as the market

continues to change. Although there is no denying the ease and effectiveness of digital payments, building a balanced and inclusive digital financial ecosystem requires tackling security issues, protecting privacy, and overcoming technology gaps.

#### **Prospect:**

1. The Indian banking industry is among the best in the nation and adapts to the needs of the nation.
2. Due to the growing trend, India has a wide range of digital payment options. Transactions using payment issued bank entities have increased significantly in both volume and value.
3. There are many banks, almost all of which have adopted digital banking. The NPCI has also encouraged the use of Adhar-enabled payment systems to encourage digital transactions among all Indians.
4. The UPI system is the most effective way to conduct digital transactions, and it is anticipated to advance the field of digital payment transactions.
5. Although credit and debit cards are accepted as usual for payment, this is a trend that has been growing since the demonetization of money in 2016.
6. The use of cash will decline as mobile payment applications, e-commerce, and mobile banking services increase.
7. Between 2013 and 2016, the quantities of RTGS and NEFT nearly tripled, indicating a higher level of system usage.
8. The Indian government is concentrating on digital infrastructure and can promote the culture of digital transactions in the country, where nearly everyone has an Adhar card and Jan Dhan Yojana account.
9. According to studies, India has 320 million or more mobile users in 2018, which creates an ideal atmosphere for encouraging the adoption of digital payment systems.

#### **Conclusion:**

In conclusion, India has benefited greatly from the adoption of digital payment networks, which have increased financial inclusion, efficiency, and convenience. With the backing of the government and the growing accessibility of digital payment infrastructure, India's digitalization is expected to keep growing and bring in a new era of financial transactions.

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## **An Overview of Business Analytics and Its Use in Various Indian Industries**

**Dr. S. Santhana Jeyalakshmi<sup>1</sup>, Dr. B. Meenakshi Sundaram<sup>2</sup>, Dr. M. Abbas Malik<sup>3</sup>**

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### **Abstract:**

Business analytics involves the use of data, statistical analysis, and predictive modeling to derive insights and make informed decisions in various business domains. Its applications span across industries and functions, providing valuable insights for strategic planning, operational efficiency, marketing optimization, risk management, and customer satisfaction. In essence, business analytics involves gathering, processing, and analyzing data to uncover patterns, trends, and correlations that can guide decision-making processes. By leveraging techniques such as data mining, predictive modeling, machine learning, and data visualization, organizations can extract actionable insights from large and complex datasets.

**Keywords:** Business Analytics, Applications, Tools

### **Introduction:**

Modern businesses depend heavily on business analytics, which uses data and sophisticated analytical methods to help them make data-driven decisions. Business analytics seeks to transform data into insights that assist firms in measuring performance, spotting trends, and streamlining workflows. The use of data, statistical methods, and technologies to extract insights and assist in decision making within organizations is the broad field of business analytics. In order to assist organizations in identifying trends, measuring performance, and streamlining procedures, it entails the collection, analysis, and interpretation of data.

### **Definition:**

1. Business analytics (BA) refers to the skills, technologies, and practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning. Business analytics focuses on developing new insights and understanding of business performance based on data and statistical methods.
2. Business Analytics is the process of transforming data into insights to improve business decisions. Data management, data visualization, predictive modelling, data mining, forecasting simulation, and optimization are some of the tools used to create insights from data

### **Evolution Of Business Analytics**

**Here are some more historical facts about business analytics:**

- During the early 1900s, Henry Ford, inspired by Frederick Taylor's scientific management system, hired him in order to measure the performance of the assembly line of his famous Ford Model T. This led to a series of events that had transformed the manufacturing industry and

production lines across the world. This also helped Henry Ford make his assembly line as efficient as possible.

- In 1956, IBM introduced the first hard disk drive that allowed users to store data that can be used for business or corporate purposes.
- During the 1970s, Bill Inmon started discussing the concept of a data warehouse to solve the problem of storing vast amounts of data for business intelligence.
- During the 1980s, the first business data warehouse was developed by IBM researchers Barry Devlin and Paul Murphy.
- In this period between the 1990s and early 2000s, various solutions and software were introduced, such as business intelligence tools by companies like SAP, Microsoft, SAS and IBM alongside relational databases.
- After the early 2000s, common people started using data more proactively for personal purposes. This also led to more corporate use of data through employees extensively using organisational data. More tools were also introduced during this time with which individuals can use business intelligence tools without extensive training. Eventually, Google Analytics was introduced that allowed website owners to analyse statistics about their website, such as trends in website visits.
- After 2010, business intelligence and analytics truly took off, being adopted worldwide by companies and businesses around the world. This also pushed us to an era of cloud computing and extensive use of Artificial Intelligence or automation.

### **Recent Developments in Business Analytics:**

The concept of big data and the introduction of automation in analytics are largely responsible for the current evolution of business analytics. With the

emergence of big data, analytics should become more robust and scalable when combined with different data sources. This aided in the introduction of increasingly sophisticated systems and technologies that can handle massive amounts of data.

Data no longer had to be stored locally thanks to the development of cloud computing technologies. By now, there was also a great need for analytical tool automation because of the vast volume of data that needed to be processed. All of this drove businesses to replace their outdated software with more powerful programs that could handle large datasets quickly and from a variety of sources, including distributed file systems and the cloud, as opposed to just the conventional RDBMS.

With the aid of contemporary business analytics, business analysts were also equipped with forecasting and prediction skills that were more accurate than ever before. Businesses started to realize how important data analytics was to their operations at this point. Although all of this technology was already in place, companies of all sizes were pushed to begin integrating data analytics into their regular operations due to the industry's increasing demands.

**There have been four main spheres where business analytics has evolved greatly, these are:**

- Artificial Intelligence and Automated Analytics
- Predictive Analytics
- Real-time Analytics
- Big Data

#### **Common components of Business Analytics**

The common components of business analytics include:

1. **Data collection:** The first step in business analytics is collecting relevant data from various sources, such as internal and external databases, social media, customer feedback, and market research. The data may be structured, semi-structured, or unstructured.
2. **Data cleaning and preparation:** Once the data is collected, it needs to be cleaned and prepared for analysis. This involves removing duplicate or irrelevant data, filling in missing data, and transforming data into a format suitable for analysis.
3. **Data analysis:** In this step, various statistical and analytical techniques are applied to the prepared data to identify patterns, relationships, and trends. The analysis may include exploratory data analysis, predictive modeling, and machine learning algorithms.
4. **Data visualization:** The insights gained from the data analysis are then visualized using charts, graphs, and other visualization techniques. This helps to communicate the insights more effectively to stakeholders.

5. **Business intelligence reporting:** Once the insights are identified and visualized, they are compiled into reports that are distributed to decision-makers within the organization. These reports may include metrics, KPIs, and recommendations for action.

6. **Monitoring and refinement:** Business analytics is an ongoing process, and organizations need to continually monitor and refine their analytics efforts to ensure that they remain relevant and effective. This may involve updating data sources, refining analytical techniques, or adjusting strategies based on new insights.

Overall, the goal of business analytics is to help organizations make data-driven decisions that improve business outcomes. By leveraging the common components of business analytics, organizations can gain insights and develop strategies that lead to improved performance and competitive advantage.

#### **Scope Of Business Analytics**

The scope of business analytics covers a wide range of activities and areas within an organization, including:

- **Data Collection and Management:** The process of gathering, storing, and organizing data from various sources in a structured manner.
- **Data Analysis:** The process of using statistical and mathematical techniques to identify patterns and relationships in data, and to gain insights into business problems.
- **Predictive Modeling:** The use of statistical algorithms and machine learning techniques to make predictions about future events or trends based on historical data.
- **Data Visualization:** The process of creating visual representations of data to help understand and communicate insights and information more effectively.
- **Decision-Making Support:** Using analytics to provide insights and recommendations to decision-makers to help them make more informed choices.
- **Customer Behavior Analysis:** The process of analyzing customer data to gain insights into their behavior and preferences, and to inform business strategy.
- **Market Research:** The process of gathering and analyzing data about the market, customers, and competitors to inform business strategy.
- **Inventory Management:** Using analytics to optimize the management of inventory levels and costs, and to improve supply chain efficiency.
- **Financial Forecasting:** The process of using data and analytical models to make predictions

about future financial performance and outcomes.

- **Operations Optimization:** Using analytics to optimize business processes and operations, and to improve efficiency, productivity, and customer satisfaction.
- **Customer Behavior Analysis:** Understanding customer preferences, needs, and purchase patterns to inform business decisions and improve customer experience.
- **Sales and Marketing Analysis:** Evaluating the effectiveness of sales and marketing strategies, and determining opportunities for improvement.
- **Supply Chain Optimization:** Optimizing supply chain operations, such as inventory management, logistics, and transportation.
- **Financial Analysis and Reporting:** Analyzing financial data to support budgeting, forecasting, and decision-making.
- **Human Resource Management and Analysis:** Examining HR data to improve workforce planning, talent management, and employee satisfaction.
- **Operations and Process Improvement:** Identifying and improving inefficiencies in business processes to increase efficiency and productivity.

#### **Importance of Business Analytics**

1. There is a strong relationship of BA with:
  - a. profitability of businesses
  - b. revenue of businesses
  - c. shareholder return
2. BA enhances understanding of data
3. BA is vital for businesses to remain competitive
4. BA enables creation of informative reports

#### **1. Enhance Customer Experience:**

With the variety of options available, customers are spoiled for choice. To ensure businesses can retain their customer base, they turn to analytics. For example, companies can analyse a customer's interaction on their website and past purchasing habits. Based on this data, they can analyse patterns and make improvements to their website performance. This can be as simple as sending a push notification prompting products that customers have added to their shopping cart. This will result in overall better customer experience, and eventually, loyalty.

#### **2. Make Informed Decisions**

Businesses often outsource a few of their processes to enhance their efficiency. When it comes to selecting vendors for such activities, they need to know which one will bring more profits. Analytics can help them evaluate supplier performance based on customer ratings, order fulfilment speed, quality, etc. This data will help them decide which one works best for their business.

#### **3. Reduce Employee Turnover**

Every year, companies have to bear an extensive cost due to employee onboarding and attrition. To save time and costs, HR professionals can use analytics tools to examine the likelihood of an employee aligning with a company's culture, tracking their performance and how satisfied they are with the new role, and similar factors. Once you know such answers, it will be easier to recognise employees who will stick to your company for a long time.

#### **4. Improve Efficiency**

Efficiency is not always limited to employees. Businesses can also analyse other resources to learn more about their performance. For example, a grocery store chain was able to reduce refrigeration costs by merely analysing the temperatures of in-store coolers. It was found that the refrigerators were being kept several degrees lower than necessary, which increased power usage. So, by increasing the temperature, power costs went down without affecting safe food storage. Business owners can learn from such examples and use data to make their resources efficient.

#### **5. Identify Frauds**

Finance companies have begun using analytics to reduce fraud. One way they do this is by using data to identify potentially fraudulent purchases, based on the analysis of customer's previous transactions. These companies also use predictive analytics to look at customer profiles and gauge the level of risk. This helps rate the risk that a particular customer presents and use this analysis to prevent losses, and builds stronger customer relationships.

#### **6. Cut Manufacturing Costs**

One company that has outranked everyone when it comes to using analytics to reduce manufacturing costs is Intel. Initially, this tech giant would perform 19,000 tests on each chip being manufactured. With the advent of predictive analysis, Intel was able to determine which chips need, which tests before their launch. By using the data collected from all of that testing, it has been able to save almost \$3 million.

#### **7. Make The Most Of Your Investment**

Earlier, business people would rely on traditional marketing techniques to gain and retain customers. However, the internet has changed this completely. Now search marketing has become the most efficient and inexpensive way for businesses to find leads. By using business intelligence, marketers can craft perfect campaigns and strategies, eventually increasing chances of higher ROI.

#### **8. Improved Advertising**

Advertising is expensive; hence marketers must know how to get the best return on investment. This is why they use analytical methods such as A/B and C split-testing. When it comes to advertising

online, all landing pages, pop-ups, and even product descriptions are evaluated and tweaked to ensure maximum results. Even the way products are positioned on the website is assessed to identify the best location to drive more engagement and sales.

### **9. Better Product Management**

When it comes to retail companies, they have more than a thousand products to offer. So, how do they decide which ones to release at which time? Yes, the answer is data analytics. Such businesses analyse which are the most popular products depending on the region and season. This data is then used to target the right product at the right time, which eventually has a positive impact on sales.

### **10. Tackle Problems**

Whenever a problem arises, a business often pauses the current operations, which leads to a huge loss. To prevent such situations, business analysts help the organization to make an informed decision by providing information that can help identify potential risks and avoid any occurrence of loss. These professionals can use the raw data to detect a malfunction in the existing system, and thus help business owners to fix it at the earliest.

### **11. Accelerate Through Uncertainty**

Look at the current business scenario. Owing to the lockdown across the globe, the business environment is as uncertain as it gets. Almost nobody has an idea when things will get back to normal, and the corporate world will be allowed to resume its operations. At such times, data analytics can be used to resolve supply chain issues, introduce crisis management solutions, optimize costs, and more.

### **12. Conduct A Competitor Analysis**

Today, almost every business has a clear idea of its competitors. An effective way to get ahead of them is by understanding what they are up to, their strategies, USPs, etc. By gathering this data by conducting a SWOT analysis, you can get a preview of how your business is performing as compared to your competitors.

### **Business Analytics Tools:**

Business Analytics tools help analysts to perform the tasks at hand and generate reports which may be easy for a layman to understand. These tools can be obtained from open source platforms, and enable business analysts to manage their insights in a comprehensive manner. They tend to be flexible and user-friendly. Various business analytics tools and techniques like.

**1. Python** is very flexible and can also be used in web scripting. It is mainly applied when there is a need for integrating the data analyzed with a web application or the statistics is to be used in a database production. The I Python Notebook facilitates and makes it easy to work with Python and data. One can share notebooks with

other people without necessarily telling them to install anything which reduces code organizing overhead

- 2. SAS** The tool has a user-friendly GUI and can churn through terabytes of data with ease. It comes with an extensive documentation and tutorial base which can help early learners get started seamlessly.
- 3. R** is open source software and is completely free to use making it easier for individual professionals or students starting out to learn. Graphical capabilities or data visualization is the strongest forte of R with R having access to packages like GGPlot, RGIS, Lattice, and GGVIS among others which provide superior graphical competency.
- 4. Tableau** is the most popular and advanced data visualization tool in the market. Story-telling and presenting data insights in a comprehensive way has become one of the trademarks of a competent business analyst Tableau is a great platform to develop customized visualizations in no time, thanks to the drop and drag features.

Python, R, SAS, Excel, and Tableau have all got their unique places when it comes to usage

### **5. Heap Analytics**

In a connected world, Heap Analytics is one of the best analytics as it helps you track and understand user behaviour that takes place in mobile and web applications. Heap also provides many other software services. It is quite easy to use, and easy to track/ Users can develop their own types of visual reports and documentation.

### **6. Alteryx**

One of the most scalable data analytics software is Alteryx. It supports many forms of data and you as the user can perform many different analytics. Once you feed in the data, the analytic sorts and cleans the data, you can extract the results in any visual form of interpretation that can be derived from other supporting applications.

### **7. MixPanel**

If you want an analytics tool that helps you with retention of customers, predictive analytics and even can do A/B Testing, MixPanel is the tool for you. This is available as a web application and a mobile application. An additional feature of this tool allows us to optimise messaging and lets you analyse the target audience of the messages. MixPanel also has great customer support.

### **8. Google Analytics**

One of the best analytical tools out there is Google Analytics. If you are used to the Google ecosystem, which most people are, you can become an expert in using this tool. There are Google Analytics certification programs as well. Google Analytics is available on the web and the phone as well. Google Analytics also integrates well into other ecosystems. It is the worlds most used

analytics tool owing to its ease, accessibility, and costs.

#### **Business Analytics Examples / Applications:**

Here are some examples of how business analytics can be used in different industries and business functions:

1. **Marketing:** Business analytics can be used to analyze customer behavior and preferences, track the effectiveness of marketing campaigns, and identify new market opportunities. For example, a retail company may use business analytics to analyze customer purchase patterns to identify which products are selling the most and to whom.
2. **Finance:** Business analytics can be used to analyze financial data and identify areas for cost savings or revenue growth. For example, a financial institution may use business analytics to analyze loan data and identify which customers are most likely to default on their loans.
3. **Human resources:** Business analytics can be used to analyze employee data, such as performance metrics and engagement surveys, to identify areas for improvement and optimize talent management. For example, a company may use business analytics to identify which employees are most likely to leave the company and take steps to retain them.
4. **Operations:** Business analytics can be used to optimize operations by analyzing production data, supply chain metrics, and quality control data. For example, a manufacturing company may use business analytics to analyze production data to identify which products are taking longer to produce and to optimize production schedules.
5. **Healthcare:** Business analytics can be used to analyze patient data, identify trends in disease outbreaks, and optimize healthcare delivery. For example, a healthcare provider may use business analytics to analyze patient data to identify patterns in disease outbreaks and take preventive measures.

Overall, business analytics can be used in various industries and business functions to gain insights, optimize operations, and make data-driven decisions.

#### **Conclusion:**

In conclusion, the realm of business analytics stands as a pivotal force driving the modern landscape of decision-making and strategy formulation across industries. As organizations navigate an increasingly data-rich environment, the ability to harness the power of data analytics has become imperative for sustaining competitiveness and fostering growth.

Through the systematic gathering, processing, and analysis of data, business analytics

empowers businesses to unearth valuable insights, anticipate market trends, optimize operations, and enhance customer experiences. From predictive analytics forecasting future trends to customer analytics deciphering consumer behavior, the applications of business analytics are vast and multifaceted.

Moreover, the evolution of technology, including advancements in artificial intelligence and machine learning, continues to expand the horizons of what is achievable through business analytics. This presents boundless opportunities for innovation and differentiation in an ever-changing business.

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## **A Study on Tamil Nadu Automobile Industry with Special Reference to Hyundai Car Owners in Tuticorin District, Tamil Nadu**

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### **Abstract:**

The automobile industry has long been recognized as a highly competitive market, with fierce competition among manufacturers, rapid technological advancements, and ever-changing consumer preferences. As a result, effective marketing strategies are crucial for automobile companies to not only attract potential buyers but also retain existing customers in an increasingly saturated marketplace. This abstract aims to provide an overview of the marketing strategies employed by the automobile industry and the ways in which they have adapted to meet the evolving demands of consumers.

In addition to environmental concerns, consumer preferences have evolved, demanding convenience, connectivity, and enhanced safety features. This has prompted automobile companies to integrate advanced technologies into their marketing strategies. Emphasis is now placed on features like advanced driver assistance systems, smartphone connectivity, and autonomous driving capabilities. Companies have also invested in user-friendly interfaces, intuitive infotainment systems, and immersive digital experiences to enhance customer engagement.

In conclusion, the automobile industry has witnessed significant transformations in its marketing strategies, driven by evolving consumer demands, technological advancements, and the need for sustainable practices. Digital marketing, eco-conscious messaging, integration of advanced technologies, and embracing new mobility trends have become pivotal in reaching and engaging consumers. As the industry continues to evolve, successful automobile companies will be those that remain adaptable, innovative, and responsive to consumer preferences and market trends.

**Keywords:** Automobile Industry, Customer Satisfaction, Client satisfaction.

### **Introduction:**

Customer satisfaction research is conducted in market for a variety of reason with the main purpose of assisting them in staying as close to their customer as humanly possible many cutting edge business and research agonies places premium on gathering relevant feedback from customer and clients and turning it into actionable steps to improve their performance. when it comes to customer satisfaction the most active verbal is to improve 'how often a company tests customer satisfaction' is determined by the quality of the operation and the gold it seeks to achieve.

Customer now an ever increasing number of product and services option. They can purchase based on their preferences and perception of quality, value, and service companies must be comprehend the factors that pleasure. The gap between total customer value and total customer cost is known as customer delivered value.

The benefits of customers satisfaction is feedback of the services, desired improvement in services, better innovation in product and services, greater customization and long- term relationship with customer.

### **Statement of the Problem:**

Automobile Industry: The automotive

industry in India is one of the larger markets in the world and had previously been one of the fastest growing globally, but is now seeing flat or negative growth rates. India's passenger car and commercial vehicle manufacturing industry is the sixth largest in the world,

Hyundai Motor India Limited is currently the second largest carmaker after Maruti Suzuki and largest auto exporter in India. It is making India the global manufacturing base for small cars. Hyundai sells several models in India, the most popular being the Santro Xing, i10 and the i20. Other models include Getz Prime, Accent, Terracan, second generation Verna, Tucson, Santa Fe and the Sonata Transform. Hyundai has two manufacturing plants in India located at Sriperumbudur in the Indian state of Tamil Nadu.

### **Objectives Of The Study:**

- To know the customer satisfaction towards the after sales service offers by Hyundai
- To understand the importance of client relationship.
- To understand customer satisfaction regarding the products offered by the company.
- To find out the problems faced by customer.
- To know the feedback of customers regarding

the service which are being provided by the company.

#### **Scope Of The Study:**

- The study covers the customer's perceptions and their most used product.
- The study covers the customer's perception for auto finance.
- The study covers the bankers perception, which automotive company they are sanctioning more.
- The study was conducted to approach the customer those who are approaching for car loan.

#### **Review For Literature:**

- **Hadi Amineha Neha and Nataliya Kosach (2016)** has conducted research on assessment of consumer satisfaction with automotive product quality. In recent, all management theories have established a link between market efficiency and the reality that a company's strategic focus should be a consumer's contentment with driving an automobile.
- **Anilkumar and Bhupender (2016)** has conducted research on role of customer satisfaction in automobile services sector studied consumer behaviour toward passenger car segment in India, this study was the identification of factors influencing customer preference for particular segment of car such as small & hatch back segment.

#### **Research Methodology:**

In this section researcher describe the methodology used in the research study. The main objective of study is customer satisfaction of Hyundai car in Pee Yes Yem. A 120 customer from Thoothukudi city were contacted for collecting data thorough personal interview via questionnaire. The data collected through questionnaire in the nature of dichotomous, likert scale, and multi-response from the respondents. The respondents are selected through non- probability judgmental sampling.

#### **Primary Resources**

Primary source, is a term used in a number of disciplines to describe source material that is closest to the person, information, period, or idea being studied.

#### **Research Period**

The research period from February 2023 to May 2023.

#### **Limitations Of The Study:**

- The sample size is limited to 120 of respondent in Tuticorin District
- Because the information collected from the customers by meeting them at their working places, company service centers, the information extracted would not be sufficient from the respondents.

- The opinion now about Hyundai may not be the same after some days because of new entrants.
- Measurement of customer satisfaction is a complex subject, which uses non-objectives method, which is unreliable.

#### **Overview of Indian automobile Industry:**

**Market Size and Growth:** The Indian automobile industry has experienced robust growth over the years. It is currently the fourth-largest automobile market globally and is projected to become the third-largest by 2025. Factors such as rising disposable incomes, urbanization, and improved infrastructure have fueled the demand for vehicles.

**Manufacturing Hubs:** Several manufacturing hubs are spread across the country, with notable clusters in Chennai, Pune, Gurugram, and Sanand. These hubs house numerous domestic and international automobile manufacturers and suppliers. The industry has attracted significant investments, fostering technological advancements and promoting job creation.

**Passenger Vehicles:** The passenger vehicle segment comprises cars, SUVs, and vans. India is a highly competitive market with both domestic and international automakers vying for market share.

Popular domestic car manufacturers include Maruti Suzuki, Tata Motors, and Mahindra & Mahindra, while international brands such as Hyundai, Toyota, and Honda also have a strong presence.

**Commercial Vehicles:** The commercial vehicle sector comprises trucks, buses, and other heavy-duty vehicles. It is crucial for transporting goods and passengers across the country. Tata Motors, Ashok Leyland, and Mahindra & Mahindra are key players in this segment.

**Electric Vehicles (EVs):** The Indian government has been actively promoting electric mobility to reduce pollution and dependence on fossil fuels. Various incentives and subsidies have been introduced to encourage the adoption of electric vehicles. Several automakers have launched EV models in the Indian market, contributing to the growth of this segment.

**Export Potential:** The Indian automobile industry has a significant export potential, with vehicles being exported to various countries worldwide. Indian-made vehicles are known for their competitive pricing and quality. The government's "Make in India" initiative has further bolstered the sector's export capabilities.

#### **Challenges:**

**1. Infrastructure:** Despite ongoing improvements, India's infrastructure, including roads and charging stations for electric vehicles, still requires further development to support the growing automobile industry.

**2. Emissions and Pollution:** The automobile sector

is a major contributor to air pollution and greenhouse gas emissions. The government has implemented stricter emission norms to address this issue, but ongoing efforts are necessary to promote cleaner and greener technologies.

**3. Regulatory Environment:** The industry is subject to various regulations, including safety standards, emissions norms, and taxation policies. Frequent policy changes and uncertainties can impact business planning and investments.

**4. Mobility Shifts:** The emergence of shared mobility services and the growing popularity of ride-hailing platforms have influenced consumer preferences and mobility patterns. Automakers need to adapt to these shifts and explore opportunities in the changing landscape.

Despite the challenges, the Indian automobile industry continues to show immense potential for growth, innovation, and technological advancements. With the government's focus on promoting electric mobility and manufacturing, the industry is poised for further expansion in the coming years.

Tamil Nadu is a hub for automobile manufacturing and has attracted investments from major global automotive companies. Some

prominent manufacturers with production facilities in Tamil Nadu include Hyundai, Ford, Renault-Nissan, BMW, Ashok Leyland, and TVS Motors. The state has industrial clusters like the Sriperumbudur - Oragadam belt near Chennai, which houses several automobile manufacturing plants and related industries. This region has witnessed substantial growth and development in recent years. The automobile industry in Tamil Nadu provides significant employment opportunities. These include jobs in manufacturing plants, research and development centers, design studios, and various support industries. Tamil Nadu also has a strong ecosystem for auto component manufacturing. Numerous suppliers and vendors operate in the state, supplying components to the domestic and international automobile manufacturers. Some of the major auto component manufacturers in the state are Sundram Fasteners, Brakes India, and Rane Group. Tamil Nadu has a well-developed road network, including national and state highways, facilitating transportation and logistics for the automobile industry. The Chennai Port and Ennore Port are major shipping hubs, providing convenient export and import facilities for the automotive sector.

**Table No 4.1 Age Wise Classifications of Car Owners**

S. No	Age	No. of Respondents	Percentage
1	20 – 30	16	13.33
2	30 - 40	31	25.83
3	40 - 50	56	46.67
4	Above 50	17	14.17
	Total	120	100

**Inference:**

The table indicates that 46.67% of respondents are 40 - 50 years and 25.83% are 30 –

40.14.17% of respondents are in Above 50 years old respectively 13.33% of the respondents are in 20–30 years age group.

**Table No 4.2 Occupation of Hyundai Car Owners**

S. No	Occupation	No. of Respondents	Percentage
1	Employee	47	39.17
2	Businessman	44	36.67
3	NRT	6	5
4	Others	23	19.17
	Total	120	100

**Inference:**

The table shows that 39.17% of employee's are using Hyundai car and next 36.67% is

businessman and the next 5% is NRT and others is 19.17%

**Table No 4.3 Hyundai Car**

S. No	Car Name	No. of Respondents	Percentage
1	SANTRO	33	27.5
2	VERNA	29	24.17
3	ACCENT	8	6.67



4	i10	36	30
5	i20	14	11.67
	Total	120	100

**Inference:** 24.17% respondents are own verna, 11.67% are using i20, 6.67% respondents are using accent.  
 The table reveals the car owners that 30% respondents are using i10 and 27.5% using santro,

**Table No 4.4**  
**Best One Feature In Hyundai Car**

S. No	Particulars	No. of Respondents	Percentage
1	Price	14	11.67
2	Style	14	11.67
3	Mileage	28	23.33
4	Quality	25	20.83
5	M&Q	21	17.5
6	M&S	18	15
	Total	120	100

**Inference:** price and 11.67% style, next is and mileage & style 15%  
 The table shows that 23.33% mileage 15%  
 20.83% quality mileage & quality 17.5%, 11.67%

**Table No 4.5**  
**Driving Feel In Hyundai Car**

S. No	Particulars	No. of Respondents	Percentage
1	Good	43	35.83
2	Better	21	17.5
3	Best	35	29.17
4	Poor	21	17.5
	Total	120	100

**Inference:** good while driving Hyundai car and 29.17% is best  
 The table reveals the 35.83% customers feels 17.5% better, and 17.5% poor

**Table No 4.6 Satisfied With Mileage**

S. No	Particulars	No. Of Respondents	Percentage
1	Yes	72	60
2	No	48	40
	Total	120	100

**Inference:** are satisfied with their mileage and 40% are not  
 The table indicates that 60% Respondents satisfied on their car mileage

**Table No 4.7**  
**Customer Service In Hyundai Car**

S. No	Particulars	No. Of Respondents	Percentage
1	Excellent	47	39.17
2	Good	41	34.17
3	Best	23	19.17
4	Poor	9	7.5
	Total	120	100

**Inference:** The table shows that 39.17% respondents are says excellent and 34.17% good, next 19.17% best and 7.5% are poor

**Table No 4.8**

**Comapany Response Towards Customers**

S. No	Particulars	No. Of Respondents	Percentage
1	Excellent	38	31.67
2	Good	31	25.83
3	Better	36	30
4	Poor	15	12.5
	Total	120	100

**Inference:**

The table reveals that 31.67% are excellent

in response to customers and 30% better, 25.83% are good, next 12.5% poor.

**Table No 4.9 Rate Your Car**

S. No	Particulars	No. Of Respondents	Percentage
1	Excellent	17	14.17
2	Nice	49	40.83
3	Not Bad	42	35
4	Bad	12	10
	Total	120	100

**Inference:**

The table reveals that customers rate their cars and the 40.83% said nice, 35% is not bad, 14.17%

respondents are excellent about their car, 10% were said bad on their car

**Chi Square Test**

**Relationship Between Occupation And Customer Service**

Null hypothesis (Ho): There is no significant relationship occupation and customer service

Alternative hypothesis (H1): There is significant relationship between occupation and customer service

**Observed Frequency**

Factors	Excellent	Good	Best	Poor	Total
<b>Employee</b>	16	17	10	4	<b>47</b>
<b>Businessman</b>	19	15	8	2	<b>44</b>
<b>NRT</b>	2	1	3	0	<b>6</b>
<b>Others</b>	10	8	2	3	<b>23</b>
<b>TOTAL</b>	<b>47</b>	<b>41</b>	<b>23</b>	<b>9</b>	<b>120</b>

Source: Primary data

**Expected frequency of any cell = Row Total × Column Total / Grand Total Expected Frequency**

Factors	Excellent	Good	Best	Poor	Total
<b>Employee</b>	18.408	16.05	9.008	3.525	<b>47</b>
<b>Businessman</b>	17.233	15.033	8.433	3.3	<b>44</b>
<b>NRT</b>	2.35	2.05	1.15	0.45	<b>6</b>
<b>Others</b>	9.008	7.85	4.40	1.725	<b>23</b>
<b>TOTAL</b>	<b>47</b>	<b>41</b>	<b>23</b>	<b>9</b>	<b>120</b>

Source: Primary data

**Calculation of chi square for occupation and customer service**

O <sub>i</sub>	E <sub>i</sub>	(O <sub>i</sub> - E <sub>i</sub> )	(O <sub>i</sub> - E <sub>i</sub> ) <sup>2</sup>	(O <sub>i</sub> - E <sub>i</sub> ) <sup>2</sup> /E <sub>i</sub>
16	18.408	-2.408	5.802464	0.315515
17	16.05	0.95	0.9025	0.056181
10	9.008	0.992	0.984064	0.109228
4	3.525	0.475	0.225625	0.064057
19	17.233	1.767	3.122689	0.181208
15	15.033	-0.033	0.001089	0.000072
8	8.433	-0.433	0.187489	0.022248
2	3.3	-1.3	1.69	0.512121

2	2.35	-0.35	0.1225	0.052128
1	2.05	-1.05	1.1025	0.538049
3	1.15	1.85	3.4225	2.983696
0	0.45	-0.45	0.2025	0.45
10	9.008	0.992	0.984064	0.109228
8	7.85	0.15	0.0225	0.002864
2	4.40	-2.40	5.76	1.309091
3	1.725	1.275	1.630625	0.94498
			<b>TOTAL</b>	<b>7.901382</b>

Degree of freedom = (Row-1) (Column-1) = (4-1) (4-1) =9

**Inference:**

By using chi-square test method for assessing the relationship between occupation and customer service.

Calculated value: 7.90 Level of significance: 5%

Tabulated value: 16.92

Tabulated value > Calculated Value

Since the calculated value is greater than the tabulated value. Null hypothesis (HO) is rejected.

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - (\sum X)^2} \sqrt{N\sum Y^2 - (\sum Y)^2}}$$

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - (\sum X)^2} \sqrt{N\sum Y^2 - (\sum Y)^2}}$$

Where, N=Number of pairs of sources X = x scores Y = y scores

$\sum XY$ =Sum of the products of paired scores

$\sum X$ =Sum of square x scores

$\sum Y$ =Sum of square y score

Let, X be the company response towards customers.

Y be the rate your car.

And alternative hypothesis (HI) is accepted. Hence there is significant relationship between occupation and customer service

**Correlation coefficient**

**Coefficient of correlation**

Correlation analysis is the statistical tool used to measure the degree to which two variables are linearly related to each other. Correlation measures the degree of association between two variables.

X	X <sup>2</sup>	Y	Y <sup>2</sup>	XY
38	1444	17	289	646
31	961	49	2401	1519
36	1296	42	1764	1512
15	225	12	144	180
$\sum X = 120$	$\sum X^2 = 3926$	$\sum Y = 120$	$\sum Y^2 = 4598$	$\sum XY = 3857$

Source: Primary Date

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - (\sum X)^2} \sqrt{N\sum Y^2 - (\sum Y)^2}}$$

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - (\sum X)^2} \sqrt{N\sum Y^2 - (\sum Y)^2}}$$

$$(4 \times 3857) - (120 \times 120)$$

$$r = \frac{(4 \times 3857) - (120 \times 120)}{\sqrt{4 \times 3926 - (120)^2} \sqrt{4 \times 4598 - (120)^2}}$$

**r = 0.45**

The calculated value is 0.45

**Inference:**

It is inferred that the correlation  $r = 0.45$  is positive, therefore there is relationship between customer service and rate their car.

**Findings Of The Study**

- 46.67% respondents are owned car at the age of 40 to 50, and the other 25.83% of are owned car at the age of 30 to 40 next 14.17%

of respondents age is above 50, and the last 13.33% of respondents are age between 20 to 30.

- 35.83% respondents are feel good while driving, and next 29.17% are saying best to their car, and the last 17.5% are says better and, the next 17.5% are says poor
- Most of the 60% respondents of Hyundai car

owners are satisfied about their mileage.

- 39.17% respondents are says excellent on their customer service, and the 34.17% are saying good and the next 19.17% are says best and only 7.5% are says poor.
- Most of the 31.67% respondents says excellent to the customers responses, and the 30% are saying better, and the next 25.83% are saying good and the last 12.5% are says poor.
- 79.17% respondents are satisfied after sales service, and the 20.83% are not satisfied about their after sales service.
- Most of the 44.17% respondents are satisfied with their car, and the next 28.33% are not satisfied with their car and the last 27.5% are just satisfied with their car.
- 46.67% respondents are willing to promote the Hyundai car, and the next 30.83% are not promote their car and the last 22.5% are says maybe they are promote the car or not promote.
- Null hypothesis (Ho): There is no significant relationship occupation and customer service  
Alternative hypothesis (H1): There is significant relationship between occupation and customerservice

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## Role of Haryana in Non-Cooperation Movement of Mahatma Gandhi

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### Abstract:

The present study examines the role of Haryana in the non-cooperation movement of Mahatma Gandhi. In 1919, a nationwide campaign was initiated spearheaded by Mahatma Gandhi leading to an upsurge in national activities within Haryana. The commencement of Mahatma Gandhi's Non-Cooperation movement in 1920 was a momentous moment in Indian history. During this period, the crucial task of arousing political consciousness in Haryana was done by the congress leaders. Lala Amit Chand, Babu Sham Lal, Lala Daulat Ram, Shri Ram Sharma, and other congress leaders actively took part in this movement. The strikes took place and protesters strongly condemned the British rule. At the local level, provincial and other committees were formed.

**Keywords:** National Congress, Non-cooperation, Legislative Council

### Introduction:

During the eighteenth century, the Mughal Empire declined and the East India Company became a dominant force in India. As the Mughal Empire waned, regional, political and economic forces emerged. The fractured political structure of central India served as the foundation for the empires of a great number of independent and semi-independent entities. The foreign powers, particularly the East India Company, strengthened their supremacy over the native states by taking the opportunity of this political instability. The British had taken control of almost every corner of India by 1857.

In 1803 the East India Company took control of Haryana. The people of Haryana, like those of other Indian states, were exploited economically during the British East India Company's rule. Every segment of the Haryana population felt unsatisfied with the exploitation policy. Therefore, the rulers and peasants of several princely states in Haryana broke out an uprising against the company's policies. In 1857, an uprising against British rule was carried out in this region; several people from Kurukshetra, Ambala, Gurgaon, Panipat, Hisar, and Rohtak eagerly took part in it. However, they were mercilessly crushed. Despite being a failure, the 1857 uprising helped the Indian people to create a sense of national identity. The Indian National Congress was founded in 1885. Its first meeting was held in Bombay. Lala Murlidhar from Haryana participated in this meeting. The Moderates influenced the National Congress between 1885 and 1905. The liberals' leadership gave the Indian National Congress a solid foundation. It was led by extremists after 1905. Mahatma Gandhi rose to prominence in Congress in 1919 as a result of the Non-Cooperation movement and subsequently assumed leadership of the Indian National Movement.<sup>1</sup> The personality of Mahatma Gandhi has developed a "Demonstration effect" on different segments of the society which has ultimately given rise to

'strengthen' 'Nationalism' through national movement. The outstanding contribution of Mahatma Gandhi to Indian politics has been the spirit of 'Satyagraha and non-violence'.<sup>2</sup> The 'Satyagraha' is a Sanskrit word, which means "Satya" and "Agraha" which reflects 'the truth and Justice' and 'the request' respectively. According to Gandhi Ji, "the movement which was comprised of different modes of non-violence for 'Right & Justice.'" There was no place of 'violence' in the 'Satyagraha' Gandhi ji has never taken censure against his opponent even.<sup>3</sup> According to Gandhi non-cooperation is essentially a cleansing process. It is a movement to place social relations on a pure basis to define them in a manner consistent with our self-respect and dignity. Besides cooperation is nothing but non-violence in its dynamic condition. Gandhi clarifies that non-cooperation is the method whereby we cultivate the force of public opinion and get bit enforced when there is complete freedom of opinion that the majority must prevail.<sup>4</sup>

It was at this time when there was great discontentment in India that the British government passed the Rowaltt Act, which vested the police and the executive government with unlimited authority to take away the civil liberties of the people. Mahatma Gandhi who was a firm believer in the British sense of justice was shaken.<sup>5</sup> The sentiments of dissatisfaction with British rule were propagated by the Rowlatt Act. The bills are an "unmistakable symptom of deep-seated disease in the governing body," according to Gandhi. The nation was inflamed by these "Black Bills" (kale kanoon), who inspired anti-British sentiment. Every Indian newspaper expressed harsh opposition to the Bills. The Tribune, a well-known newspaper in Punjab, called the bills' execution a "blunder of colossal magnitude."<sup>6</sup> In such a circumstance, Gandhi Ji decided to issue a decree for a nationwide movement to demand the bills' drawing out.

He called for a nationwide strike on March 30, 1919, but it was later rescheduled for April 6,

1919. The British soldiers carried gunfire on the peaceful gathering at Jallianwala Bagh in Amritsar on April 13, 1919, resulting in a cold-blooded massacre. The movement's essence and personality were altered by this incident. At Bahadurgarh, attempts were made to destroy a mail train and the Railway Bridge. In August 1920, Gandhi ji initiated the Non-Cooperation movement following the Khilafat struggle. During the special session held in Calcutta in September 1920, the Congress approved the Non-Cooperation program. Lala Lajpat Rai headed a special Congress session in Kolkata where the noncooperation movement was initiated and eventually passed. During the movement, Congress resolved to launch two different types of programs. First, a one-corer rupee fund was to be raised for the Tilak Swaraj Fund in honour of Balgangadhar Tilak, who passed away on August 1, 1920. Secondly, a one-corer volunteer corps was to be established. To encourage a range of boycotts, including social, legal, educational, and economic ones, it was suggested that twenty lakh spinning wheels be supplied to produce enough textiles to offset the shipments from overseas countries.

All Indian people responded favourably to Gandhi's call for a strike. Many people came forward and joined this movement. The resolutions were passed in meetings that were conducted in several places. In Haryana, the first conference took place on February 11, 1919, at Ambala. Pandit Shriram presided over a committee that was established in Rohtak, particularly for this purpose. Similar took place in Hissar, Hansi, Rohtak, and a few other Haryana cities; resolutions requesting their immediate evacuation were unanimously passed.

In almost every town in Haryana, Satyagraha Samitis were formed successfully to oppose the bills. It was agreed that they would quietly and nonviolently refuse to comply with the Rowlatt Bills. A large number of people were sent to jails, and baton charges took place at several places to suppress the people but the national spirit could not be subdued. The District Congress Committees wore black badges to represent their regret.<sup>7</sup> Sh. Bakshi Ram Krishan and Sham Lal Satyagrahi called a strike in Hissar. The residents of Bhiwani overwhelmingly endorsed a resolution against the Rowlatt Act during the meeting. Many meetings were held in major Haryana cities, including Thanesar, Ambala, Jagadhari, Ladwa, Karnal, Palwal, Rohtak, Jhajjar, Sonapat, Rewari, and Panipat.<sup>8</sup> The movement was led and supported by the educated elite in the cities and towns. But Chhotu Ram did not believe in non-cooperation and defiance of the law. He believed be the attainment of Swarajya constitutional means. Therefore he

resigned from Congress when they adopted the resolution of non-cooperation.<sup>9</sup>

The leaders called on school management committees and teachers to sever all ties with the government. Additionally, the pupils were asked to quit government-run and assisted schools and enrol in national families that Congress had authorized.<sup>10</sup> The Haryana students, those, who were attending the schools and colleges in Delhi, Lahore, and other locations decided to leave. The boycott of foreign goods was carried out. The traders of Jhajjar, Beri, Gohana, and Rohtak swore not to purchase any foreign clothes. The people were urged to develop the quality of discipline and self-sacrifice, decide their disputes through mutual arbitration, and take to hand-spinning, hand- weaving and using Swadeshi goods.<sup>11</sup> In Beri, a weaving facility had opened. Consequently, liquor stores were forced to close as a result of this social movement. The local officials of Rohtak insisted on using Khaddar to promote the usage of the Khadi. Several people went and spread awareness of this movement, including Ramrup, Shriram Sharma, Daulat Ram, Neki Ram Sharma, etc. Another key component of the ongoing struggle was the boycott of the Central and Provincial Legislature elections that were set for November 1920. Many Haryana-based Congress candidates pulled out of the Legislative Council contest. The urban voters showed no enthusiasm for participating in the voting process. The voter's percentage remained extremely low. In response to an additional facet of the boycott of British courts campaign, numerous eminent attorneys, including Bakshi Ram Kishan and Lala Sham Duni Chand, Lal Satyagrahi, departed from the court. A clause regarding a national court was included in the Congress program; nevertheless, it was not until K.A. Desai opened the first and last national court in Bhiwani on May 26, 1921, that this could happen.

When the movement was at its peak, violence erupted at Chauri Chaura in Gorakhpur district (U.P.), where twenty-two policemen were burnt by a violent mob in February 1922. Gandhi was aggrieved at this harrowing incident and immediately suspended the movement.

#### **Conclusion:**

Thus Haryana actively participated in the Non- Non-Cooperation movement. Many eminent leaders such as Lala Lajpat Rai, Pandit Neki Ram and Lala Murlidhar played a crucial role in this movement.

This was the first movement in which large masses took part and it brought people of different sections of society together in the National protest.

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## **Battery Management System for Electric Vehicle Passive Cell Balancing On Lithium -Ion Polymer Battery**

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### **Abstract:**

Automotive industry is moving forward for green innovation which is Electric Vehicles. Battery is one of the basic components in an Electric Vehicle. Lithium-Ion Polymer battery offers superior execution compare to other sorts of the battery in the showcase. In any case, Lithium-Ion Polymer battery is exceptionally touchy to over voltage and beneath voltage which can be dangerous to the client. In addition, the imbalanced cell in a battery influences the execution and life utilization of the battery. By having a legitimate checking and adjusted cell, it can drag out and keep up the execution of the battery. The reason of this work is to receive an inactive cell adjusting amid the charging of Lithium-Ion Polymer battery. This work produces State of Charge profile of Lithium-Ion Polymer battery utilizing measured parameters such as voltage, charging current and temperature. The work on battery testing was done to calculate the State of Charge and confirmed utilizing Orion Battery Administration Framework information. In this report, discoveries on both strategies are talked about. A model of inactive cell adjusting was planned utilizing a PIC16F877A microcontroller. In any case, the model is still beneath way. In this manner, the viability cannot be decided at the moment.

**Keywords:** PIC16F877 A microcontroller, Lithium-Ion Polymer Battery, Affectability to Voltage Fluctuations.

### **Introduction:**

Automotive industry is moving forward for green innovation which is Electric Vehicles. Battery is one of the basic components in an Electric Vehicle. Lithium-Ion Polymer battery offers way better execution compare to other sorts of the battery in the showcase. In any case, Lithium-Ion Polymer battery is exceptionally touchy to over voltage and beneath voltage which can be dangerous to the user. Moreover, the imbalanced cell in a battery influences the execution and life utilization of the battery. By having an appropriate observing and adjusted cell, it can draw out and keep up the execution of the battery.

The reason of this work is to embrace an inactive cell adjusting amid the charging of Lithium-Ion Polymer battery. This work produces State of Charge profile of Lithium-Ion Polymer battery utilizing measured parameters such as voltage, charging current and temperature. The work on battery testing was done to calculate the State of Charge and confirmed utilizing Orion Battery Administration Framework information. In this report, discoveries on both strategies are discussed. A model of inactive cell adjusting was outlined utilizing a PIC16F877A microcontroller. In any case, the model is still beneath way. Subsequently, the adequacy cannot be decided at the moment.

### **Literature Survey:**

- i. Adnan Ashraf , Basit Ali, Mothanna S. A. Alsunjury, Hakime Goren, Halise Kilicoglu, Faysal Hardan and Pietro Tricoli .

In-depth research has been have conducted a comprehensive investigation into cell-balancing

techniques for lithium-ion batteries. Their research delves into the operational principles and control algorithms of various recent methods highlighted in the literature. The review reveals that recent cell-balancing strategies predominantly incorporate inductors, capacitors, or a combination of both components. Typically, to enhance efficiency and speed, additional inductors or capacitors are integrated into fundamental cell-balancing topologies. However, this incorporation may result in a slight increase in power losses within the balancing circuits due to the requirement for additional semiconductor switches.

Some balancing topologies even incorporate auxiliary batteries to supply or draw energy during the cell-balancing process. Furthermore, DC-DC converters, particularly resonant converters, have gained attention for their ability to minimize switching losses by operating near zero voltage/current switching points. Despite their advantages, other converter topologies like buck-boost, push-pull, and Cuk converters are also utilized in balancing circuits to stabilize battery output voltage and reduce cell-balancing duration. However, it's worth noting that the adoption of such converters may lead to an increase in the size, volume, and weight of the balancing circuits.

- ii. Abhijeet Chandratre, Himanshi Saini, Sai Hanuma Vemuri, M.B. Srinivas.

The paper present a novel approach to battery management system (BMS) design tailored for valve regulated lead acid (VRLA) batteries. Given that conventional systems often exhibit up to a 10% error, this research aims to achieve a



maximum 5% error rate in crucial battery parameter measurement. Through the utilization of advanced mathematical algorithms and high-precision data acquisition components, accurate monitoring of parameters such as state of charge (SOC), state of health (SOH), depth of discharge (DOD), and battery life is achieved.

The proposed system also addresses temperature effects on SOC and incorporates algorithms for estimating battery life and cycles. The results demonstrate the system's effectiveness in achieving highly accurate SOC measurements. Future work intends to enhance the system with intelligent charging algorithms. The collaborative efforts of Abhijeet Chandratre, Himanshi Saini, Sai Hanuma Vemuri, and M.B. Srinivas have been pivotal in advancing battery monitoring technology for improved reliability across various applications.

iii. Yasin Fatih Kurt1, Tolga Özer2

In this research, the development of a 48V, 750-Watt battery pack tailored for electric bicycles alongside an ESP32-based Battery Management System (BMS). The battery pack, comprising 13 series batteries and two parallel arms, utilized 18650-type lithium-ion cells. The BMS incorporated a passive balancing method, with temperature monitoring facilitated by DS18B20 digital sensors at seven points. Charging was controlled to ensure safety, with a charging current of 2A and automatic current cutoff if exceeded.

The BMS, isolated power, and control sections used optocouplers, enabling wireless data transfer and updates via Wi-Fi. A novel balancing algorithm facilitated quick and efficient balancing during charging. The study's significance lies in its comprehensive approach to electric bicycle battery design and BMS development, addressing safety, efficiency, and wireless connectivity. By integrating

hardware and software improvements, the research contributes to advancements in electric vehicle technology, providing valuable insights for future research and development in this rapidly evolving field.

iv. D. Li, Abhijeet Chandratre, Himanshi Saini, Sai Hanuma Vemuri, and M.B. Srinivas. "BMS for E-bike: A novel approach to measure crucial battery parameters for a VRLA battery." In Power Electronics (IICPE), 2010 India International Conference, pp. 1-5, Jan. 2011

This paper presents a novel approach to battery management system design specifically tailored for electric bikes. The paper focuses on measuring crucial battery parameters for Valve Regulated Lead Acid (VRLA) batteries, providing insights into effective management strategies for this application.

**Methodology:**

This project centers on the exploration and analysis of Lithium-Ion Polymer batteries. It involves utilizing the Orion Battery Management System (BMS) and conducting hardware module testing to assess the State of Charge (SOC). The primary objective is to leverage this data in the development of a passive cell balancing prototype.

The "Wireless Electrical Vehicle Charging Station" initiative integrates both renewable and non-renewable energy sources to power electric vehicles. It harnesses solar energy as the renewable source and electricity from the state grid as the non-renewable counterpart.

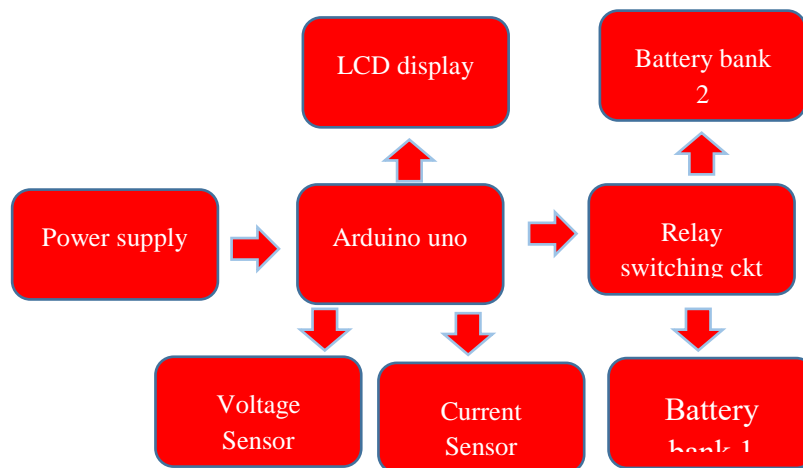
To optimize energy extraction from solar panels, the system incorporates a Maximum Power Point Tracker (MPPT). The solar DC supply is directed through a changeover unit, while the grid supply is rectified before entering the system via a changeover switch.

Sr.No	Battery Charging(V)	Two Cell remove	Balancing Cells
1.	11.78	0	11.78
2.	11.78	11.78	11.78
3.	11.78	0	11.78
4.	11.78	11.78	11.78

**Fig. Table No. 1**

The above text explains how the passive cell balancing technique balances power when one or two cells are removed.

### Block Diagram & Working:



**Fig. 1 Block Diagram**

#### Working :-

The work is relevant in the context of advancing technology in everyday objects. It focuses on energy metering methods and the role of energy meters in the energy industry. Two main types of metering systems are discussed: traditional meters that count LED blinks to measure voltage and current, and modern smart meters connected to the Internet of Things (IoT). These smart meters measure and display data on an LCD screen in real-time, and the data is also sent to a cloud server. Users can monitor real-time data, including voltage and energy consumption, as well as their daily and past energy usage. At the end of each month, the device calculates the units used and sends a bill to the user's smartphone through an Android application connected to the Blynk server. Additionally, users have the ability to control the main power supply.

#### Study Of Bms Parts:

**Parts of BMS:** BMS have several parts;

**Battery Cells:** Lithium-ion polymer battery cells are the energy storage units in an electric vehicle battery pack.

**Battery Management System (BMS) Unit:** This is the core component responsible for monitoring and managing the battery pack. It includes:

**Battery Monitoring Circuit:** Monitors the voltage, temperature, and sometimes current of each individual cell.

**Microcontroller or Processor:** Processes data from the monitoring circuit and controls the balancing process.

**Communication Interface:** Provides a means for external communication, often through protocols like CAN (Controller Area Network) or UART (Universal Asynchronous Receiver-Transmitter).

**Balancing Circuitry:** Implements balancing techniques to ensure that all cells have similar state-of-charge levels.

**Cell Balancing Circuitry:** Passive cell balancing circuits redistribute charge among cells to equalize their state of charge. This typically includes:

**Balancing Resistors:** These resistors create discharge paths for cells that are at a higher state of charge, allowing them to equalize with lower charged cells.

**Switching Transistors:** Control the flow of current through the balancing resistors.

**Voltage Sensors:** Monitor individual cell voltages to determine which cells need balancing.

**Power Management Unit (PMU):** Regulates the power flow within the BMS and between the battery pack and the rest of the vehicle's electrical system.

**Safety Components:** Various safety features to protect the battery pack from overcharging, over-discharging, over-current, and overheating. These may include fuses, thermal sensors, and isolation circuits.

**Cooling System:** Ensures that the battery pack remains within the optimal temperature range to maintain performance and longevity.

**Wiring Harnesses and Connectors:** Connect the BMS components to each other and to the battery cells.

**Control Software:** Manages the operation of the BMS, including monitoring, balancing control, and communication with other vehicle systems.

**Enclosure:** Provides physical protection for the BMS components and insulation against environmental factors.

#### Technological ASPECTS OF BMS

**1. Cell Monitoring:** The BMS continuously monitors the voltage and temperature of each cell in the battery pack, identifying any deviations from the norm that may indicate overcharging or undercharging.

**2. Cell Balancing Circuits:** Passive cell balancing circuits, comprising resistor networks or capacitor-based systems, facilitate controlled current flow to

equalize cell voltages when deviations occur.

**3. Control Algorithms:** Advanced algorithms determine when and how much balancing action is necessary for each cell, optimizing the process based on factors like voltage, temperature, and historical data to minimize energy loss.

**4. Efficiency Optimization:** Passive balancing, while inherently more efficient than active methods, requires careful optimization to minimize energy loss, crucial for enhancing electric vehicle driving range.

**5. Safety Features:** The BMS integrates safety mechanisms to prevent overcharging, over-discharging, and overheating of cells, employing cutoff switches, temperature sensors, and communication protocols to alert vehicle control systems of abnormalities.

**6. Integration with Vehicle Systems:** Tight integration with powertrain controllers and onboard chargers enables the BMS to adjust charging rates, power delivery, and regenerative braking based on battery condition and balancing needs.

**7. Scalability and Modularity:** BMS designs should be scalable to accommodate various battery pack sizes and configurations, with modular components facilitating maintenance and future upgrades to adapt to evolving battery technologies.

#### **Conclusion:**

In conclusion, this paper presents an innovative approach to developing the project on implementing passive cell balancing in Lithium-Ion Polymer batteries for electric vehicles holds significant promise for enhancing battery performance, safety, and longevity. Through meticulous research, hardware development, and simulation testing, the project has laid a strong foundation for addressing critical challenges such as voltage sensitivity and cell imbalance. While the prototype is still under development, its potential advantages include extended battery lifespan, improved safety measures, optimized performance, and cost savings for electric vehicle owners. However, it's important to acknowledge the project's limitations, including the ongoing development of the prototype and the need for further validation and real-world testing. Overall, this project represents a significant step towards advancing sustainable and efficient electric vehicle technology.

#### **Acknowledgement:**

We would like to extend our heartfelt gratitude to all those who have played an essential role in the successful completion of this research project on "Battery Management System For Electrical Vehicle Passive Cell Balancing On Li-Ion Polymer Battery. First and foremost, we express our deep appreciation for the guidance and mentorship provided by Prof. P. B. Vyavahare, whose expertise and unwavering support have been instrumental in shaping this research. Their valuable insights and

encouragement throughout the project were invaluable. We are also indebted to our colleagues and research team members for their dedicated efforts and collaboration. Their enthusiasm and commitment greatly enhanced the project's progress.

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2. Abhijeet Chandratre, Himanshi Saini, Sai Hanuma Vemuri, and M.B. Srinivas collaborated on the research.
3. Yasin Fatih Kurt and Tolga Özer contributed to a study on electric bicycle battery pack development and ESP32- based Battery Management System (BMS).
4. Adnan Ashraf, Basit Ali, Mothanna S. A. Alsunjury, Hakime Goren, Halise Kilicoglu, Faysal Hardan, and Pietro Tricoli conducted research on cell-balancing methods for lithium-ion batteries.
5. Olov. E. authored a master thesis on a Balancing and Monitoring System for Battery Cell Stacks in Electric Vehicles at Lulea University of Technology.
6. Prof. Kishor Pratap Jadhav explored Smart Lightweight Solar Drone Technology in a publication for GIS SCIENCE JOURNAL.
7. K. Michael discussed managing high voltage lithium-ion batteries in Hybrid Electric Vehicles (HEVs) in a publication for Linear Technology Corp.
8. William. J. S. 3rd authored a master thesis on LithiumBased Battery System Management and Balancing at Purdue University.
9. The Microchip 16F8xx Family Datasheet and LM 35 Temperature Sensor Datasheet were referenced for technical specifications.
10. The Orion Battery Management System specifications manual was consulted for battery management system information.

## **Slicing Through the Air: The Aerodynamic Evolution of the Electro-Solo EV**

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### **Abstract:**

Pollution control is one of the biggest issues for our nation. Most pollution is due to industrialization and transportation. In this project, we utilize electric energy stored in a battery to power the vehicle, leading to a reduction in pollution. A battery-motor system is designed based on a pre-planned coverage of distance, and a lightweight structure is fabricated with suitable materials. Efficiency is enhanced by reconstructing the aerodynamic shape, resulting in reduced air resistance. This single-seater electric vehicle is affordable and has a range of 35 km. The efficiency increases by 96.73% for the new developed model.

**Keywords:** Electric Vehicle, Pollution free, Green Energy



### **Introduction:**

The "Design and Development of Electric Vehicle" project represents a significant leap towards sustainable transportation solutions in today's world. With the pressing need to reduce greenhouse gas emissions and dependence on fossil fuels, electric vehicles (electric vehicles) have emerged as a promising alternative. This project seeks to address key challenges in electric vehicle design and development, focusing on enhancing battery technology, optimizing energy efficiency, and ensuring practicality for everyday use. By integrating cutting-edge engineering and innovative design principles, the project aims to create an electric vehicle that not only reduces carbon emissions but also meets the performance and range expectations of modern consumer. As the world transitions towards cleaner transportation options, this research and development effort holds immense potential in shaping the future of mobility and reducing the environmental impact of our journeys.

### **Literature Review:**

GGLaVoie (2020) offers a comprehensive review of key technologies in electric vehicles (EVs), providing insights into various aspects such as propulsion systems, battery technologies, and charging infrastructure, which can inform the design and development process[1]. Smith & Brown (2019) focus specifically on battery technologies for EVs, discussing the current status and future prospects. Understanding advancements in battery technology is crucial for designing EVs with improved range, performance, and energy efficiency [2]. Walker, Roberts, & Parker (2018) provide insights into the environmental implications of EVs, addressing key issues and research needs. Understanding the environmental impact of EVs is essential for designing vehicles that minimize their carbon footprint and other environmental concerns [3]. 4.Li & Lu (2020) discuss advances in electric vehicle power electronics and drivetrain technologies. This paper offers valuable insights into the technological innovations that can enhance the performance, efficiency, and reliability of EVs[4].

**Objectives:**

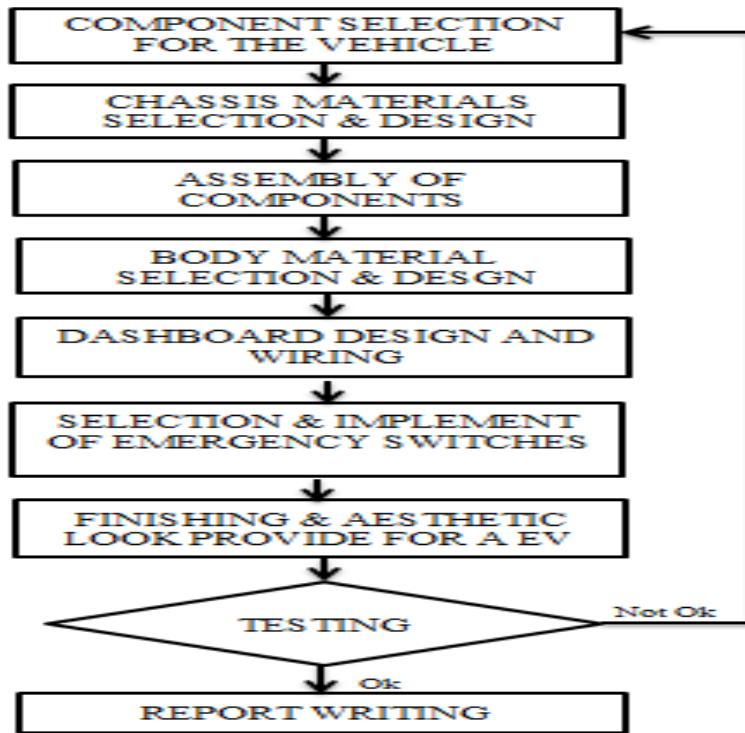
The main objective of this paper is to study the design parameters of an electric vehicle. The second objective is to fabricate the body of this vehicle with composite material to reduce the weight. The performance of this vehicle depends on the air resistance which again depends on the shape of the vehicle, here the objective is to study and rectify the design of the shape of vehicle. Maintaining center of

gravity is one of the important part in fabrication of vehicle, her the next objective lies as to balance the various equipment's position in the vehicle.

Here are the objectives

1. To study of the design concept of Electric Vehicle.
2. To study of fabrication with composite materials.
3. To reduce Air Resistance of Vehicle.
4. To balance the equipment required to maintain center of gravity.

**Methodology:**



**Fabrication:**

The fabrication of this vehicle involves selection of parts to be assembled and body design to reduce air resistance. The parts to be assembled are selected from calculation and availability in the market. For chassis design, advanced fabrication technique has been used ensuring lightweight with robust structural integrity. Precision machining and composite molding utilized to enhance aerodynamics and durability. The interior components have fabricated with ergonomic design principles and high-quality materials to maximize comfort and functionality. Quality control measures have been continuously used throughout the

fabrication process to maintain consistency and meet regulatory standards. Continuously refined fabrication techniques based on prototype testing and feedback to optimize performance, quality, and cost-effectiveness.

**Optimization:**

In this paper more concentration is given on air resistance. The air resistance plays important role in the efficiency of the vehicle. Aerodynamic shape is the best solution to optimize air resistance. In the very first iteration, the shape of the front panel was rectangular. The air resistance for the rectangular surface is calculated as

**For Rectangular Shape**

Length = 1.32l = 1.32 m  
 Breadth = 1.682b = 1.682 m  
 Velocity(v) = 25v = 25 km/h  
 = 253.63.625 m/s  
 Mass( ρ) = 200m = 200 kg  
 Drag coefficient =6.03Cd= 6.03  
 Reference Area(A)=l×b = 1.32m×1.682m  
 = 2.22224 sq.m  
 The air density (ρ) = 1.225ρ  
 = 1.225 kg/m³.

$$\begin{aligned} \text{FD} &= \text{Air resistance} \\ \text{FD} &= 0.5 \cdot \rho \cdot (V^2) \cdot C_d \cdot A \\ &= 0.5 \times C_d \times A \times \rho \times (v^2) \\ &= 0.5 \times 6.03 \times 2.22224 \times 1.225 \times (25/3.6)^2 \\ &\approx \mathbf{321.98N} \end{aligned}$$

Then to reduce the air resistance, ergonomic criteria is used to design the front panel. Now the air resistance for the rectangular surface is calculated as

#### **For Aerodynamic Shape**

Let's assume a drag coefficient = 0.25  $C_d = 0.25$  for a more aerodynamic shape

$$\begin{aligned} \text{FD} &= 0.5 \cdot \rho \cdot (V^2) \cdot C_d \cdot A \\ &= 0.5 \times 0.25 \times 2.22224 \times 1.225 \times (25/3.6)^2 \\ &\approx \mathbf{10.43N} \end{aligned}$$

The calculated air resistance for the rectangular-shaped electric vehicle with the given parameters is approximately 321.98 N. Compared to the previous calculation with a drag coefficient of 6.03, this represents a significant reduction in air resistance. The percentage difference between the two calculations is approximately **96.73%**. This reduction in air resistance highlights the importance of aerodynamic design in minimizing energy consumption and improving vehicle efficiency.

#### **Conclusion:**

The successful design and development of the Electro-Solo single-seater electric vehicle represent a significant milestone in the pursuit of sustainable urban mobility solutions. Through meticulous research, innovative design, and rigorous testing, we have created a vehicle that not only meets the needs of modern commuters but also aligns with our commitment to environmental responsibility. As we conclude this project, we envision the ElectroSolo playing a pivotal role in reducing carbon emissions and alleviating traffic congestion in urban areas. With ongoing support, adaptation to market dynamics, and a focus on user satisfaction, we are confident that the ElectroSolo will continue to make a positive impact on the future of transportation. The efficiency increases by **96.73%** for the new developed model.

#### **Acknowledgement:**

We extend our heartfelt appreciation to Mr. Ravi Mane, Proprietor, Motors e-Battery Vehicles, Principal Dr. K. J. Karande, Vice Principal Dr. S. G. Kulkarni and Head of Mechanical Department Dr. S. S. Kulkarni, SKN Sinhgad College of Engineering Korti, Pandharpur for their unwavering support, guidance, and encouragement throughout the duration of our project.

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## **Food Security in India: Challenges and Achievements**

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### **Abstract:**

Nutritional security or food security refers to ensuring the availability of diverse and nutritious food in adequate quantities at all times throughout the life cycle for all citizens of society. This food should be culturally acceptable to all and accessible to them within appropriate socio-economic limits. The unit of nutritional security can be at the level of a country, a state, or even a village. The concept of food security defines the fundamental rights of individuals, stating that everyone requires a diet rich in essential nutrients for their livelihood. It is also crucial that the need for food is met at regular intervals. As someone aptly said, "One cannot worship God on an empty stomach; one must first feed oneself." A hungry stomach cannot even worship God, let alone think about development. It is akin to keeping oneself in the dark. Another aspect is that considering the uncertain times ahead, it is imperative to ensure that our granaries are stocked with sufficient grains that are secure, and when needed, can be immediately distributed to those in need in an organized manner.

**Keywords:** Books, Journal, News Papers, and Google.

### **Introduction:**

The right to food is a fundamental right of an individual. Our plate is not complete with just grains; to fulfill our needs, we need a variety of food items such as pulses, cooking oil, vegetables, fruits, dairy products, and roots and tubers every day. This is essential to ensure the intake of carbohydrates, fats, proteins, and micronutrients. The government plays a direct role in this because the protection of rights is done through policy formulation, and it is the government's responsibility to formulate policies. If there is no diversity, our stomachs may be full, but the nutritional needs will not be met.

Currently, our country is throbbing in the flames of a food crisis. Due to the skyrocketing prices of food items, food is becoming out of reach for the poor class. In such a dismal situation, it becomes the government's prime responsibility to provide food security to every citizen of the country. In the past three years, there has been an 83% increase in the prices of food items, leading to a growing narrative of hunger worldwide. It is known that during 2008-2009, the number of hungry people in the world increased by four crores, reaching a staggering figure of 96 crore. While the world's leading nations aimed to halve the number of hungry people by 2015, the reality has been quite the opposite. Due to the rising prices of food items, it is becoming increasingly difficult for poor individuals to fill their stomachs.

Therefore, today, every individual needs clothing to cover their body, a roof over their head for shelter, and food to satisfy hunger. Life is possible without clothing and shelter, but it is difficult without food. Therefore, people work hard for bread. Additionally, it is the government's responsibility to provide food to people. Despite the efforts of individuals and the government, many times, adequate food is not available to the common people. Behind this lies the crisis of food and food inflation, which are the main reasons. Even in times

of food crisis, people may not have access to sufficient food due to food inflation. In such situations, the budget for meals at home increases. In both situations of food crisis and food inflation, it becomes difficult for the poor to have two square meals a day.

It is well known that with the increase in population and income, the demand for food increases rapidly on one hand. On the other hand, the expected increase in food production is not happening, leading to a continuous gap in food supply and demand. As a result, due to the rise in prices of food items, food is not reaching the lower strata of society. Therefore, it is extremely necessary to increase the physical availability of food to provide food security to the entire population of the country. In the Ninth Five-Year Plan, food security was given top priority, and it is evident that developing the food security system is the country's foremost priority so that the threat of famine can be eliminated.

The government established the National Food Security Mission in 2007, whose main objective is to increase not only the production of wheat, rice, and pulses but also productivity. This is to achieve food security in the country.

It is well known that India is considered an agrarian country where still about 70% of the population resides in villages. Agriculture remains the backbone of their livelihoods. However, the negligence towards agriculture, which not only supports 70% but the entire population in terms of sustenance and nutrition, has led to a situation where we are now compelled to restrict the availability of grains to fill the stomachs of our countrymen. It seems that our situation is resembling that of the Pune decade. Therefore, there is an urgent need to bring about fundamental changes both in the condition and direction of agriculture. During the Green Revolution, indiscriminate use of irrigation, deforestation, chemical fertilizers, and pesticides has

had adverse effects, which are now becoming apparent. Today, soil erosion, loss of biodiversity, global warming, soil salinity, etc., are the result of the Green Revolution. Hence, since 1990, there has been an improvement in food production. Recognizing this, the pioneer of the Green Revolution, Dr. Swaminathan, is now advocating for the use of organic fertilizers such as green manure and cow dung instead of chemical fertilizers and pesticides. Aditya is feeling the need for a green revolution to encourage the use of organic fertilizers such as green manure and cow dung instead of chemical fertilizers and pesticides so that sustainable agriculture can be promoted and food can be produced in abundance without disturbing the ecological balance.

### **The achievements of the Ministry of Food Processing Industries**

The Government of India has approved a central scheme named the Production Linked Incentive (PLI) scheme for the food processing industry with an outlay of 10,900 crores for the period from 2021-22 to 2026-27. The primary objective of this scheme is to promote the formation of global food manufacturing companies, assist Indian brands of food products in international markets, increase employment opportunities in non-agricultural activities, and ensure high remunerative prices and high income to farmers.

Under the scheme, specific high-value-added food products with high development potential have been identified for assistance. These include processed fruits and vegetables, marine products, and prepared or preserved food preparations ready for consumption.

### **Economic achievements of the food processing sector:**

1. The food processing sector has emerged as one of the crucial segments of the Indian economy, identified as a significant area under the 'Make in India' initiative, and has flourished as an important part of the Indian economy in terms of domestic production, export, investment, and employment contribution.
2. The export of processed food products increased from 8.56 billion US dollars in 2020-21 to 10.42 billion US dollars in 2021-22. The share of processed food exports in total agricultural and food exports increased by 22.6 percent in 2020-21.
3. During 2021-22, the food processing sector attracted direct foreign investment of 709.72 billion US dollars.

### **Food Processing Summit**

During the period from 2022 to December 2022, the Ministry of Food Processing Industries organized Food Processing Training Summit in various states including Telangana, Andhra Pradesh, Andaman, Chhattisgarh, Jharkhand, Nagaland, Arunachal Pradesh, West Bengal, Mizoram,

Manipur, Sikkim, and Meghalaya, to raise awareness about various aspects of the initiatives of the Indian government, such as investment opportunities in the agricultural food sector. These summits saw the participation of stakeholders including farmer producer organizations, entrepreneurs, corporates, banks, state departments, and other key stakeholders.

### **Nutrition security**

World Food Day was celebrated on October 16th, but we often view food merely as a system or mechanism. No country understands the challenges of food systems better than India, which must feed the world's largest population. While the primary goal of food systems is to ensure nutrition security for all, this can only be achieved sustainably when food producers receive economic benefits that endure over time. This resilience is intricately linked to the resilience of our natural ecological systems, as the inputs for agriculture—such as soil, water, and climate—are natural resources. Recognizing the interconnection between livelihoods, environmental protection, and nutrition security is essential for truly making our food system sustainable.

### **Health and Nutrition**

Nutrition security prevents health issues related to malnutrition, such as stunting, cognitive impairment, disability, and disease susceptibility, thereby improving individuals' health and well-being. Approximately 45% of deaths in children under the age of 5 are associated with malnutrition.

### **Economic stability**

Improving nutrition security makes individuals and nations more productive by enabling them to engage more effectively in production and trade, thereby enhancing their economic stability. According to a World Bank study, it is estimated that malnutrition costs the global economy approximately \$3.5 trillion annually in terms of loss of productivity and human capital. Reductions in public health and healthcare costs through nutrition-related security can help reduce healthcare expenditure by preventing nutrition-related diseases such as diabetes and heart disease. This, in turn, reduces the burden on healthcare systems, resulting in approximately 47% contribution to out-of-pocket healthcare spending tomorrow.

### **Poverty alleviation**

Ensuring people have access to nutritious food is a means of poverty alleviation. The lack of nutrition-related security can perpetuate the cycle of poverty because malnutrition can hinder educational attainment and reduce earning potential.

### **Sustainable agriculture and environmental conservation**

Sustainable agricultural practices are also included in promoting nutrition security, which is essential for preserving the environment and



ensuring that future generations can meet their nutritional needs.

### **Realizing the benefits of population growth**

Nutrition security plays a crucial role in realizing the benefits of population growth. This scenario arises when a significant portion of a country's population is in the working-age group. There is a greater likelihood of well-nourished individuals being productive and contributing to economic development. Therefore, the full realization of population benefits should be ensured.

### **The status of nutrition security in India**

India is grappling with the dual burden of malnutrition on the nutrition front. Despite significant progress in recent years, a large portion of the Indian population exhibits deficiencies in essential nutrients. According to the National Family Health Survey 2019-21, 35% of children suffer from stunting, while 57% of women and 25% of men are afflicted with anemia. On the other hand, due to an imbalanced diet and sedentary lifestyle, 24% of busy women and 21% of the country's population suffer from obesity.

Supplying food in adequate and qualitative quantities is essential for health and balanced living so that nutritional needs can be met. In this way, the concept of food security has changed perception, giving more priority to food energy intake over food availability based on traditional concepts. From this perspective, ensuring adequate nutrition through regular food supply is possible by ensuring the availability of health facilities. Keeping food security in mind, the availability of food grains is as dependent on individuals as it is on power.

From this perspective, to ensure access to food for low-income groups in the country, the public distribution system has been introduced. Under this system, the government is striving to provide essential items to the poor at subsidized rates by issuing BPL cards. Under this system, the Antyodaya Anna Yojana was launched in 2000, through which low-income families are provided 25 kilograms of grains at special rates. In the same vein, under the Annapurna scheme initiated in April 2000, the government is providing 10 kilograms of grains free of cost to poor, destitute elderly citizens. To provide basic commodities to the common people at appropriate and low prices, the popular National Scheme was launched in July 2000.

The main objective of this scheme is to make essential items available at low prices for BPL beneficiaries. Under the ongoing Indira Gandhi National Widow Pension Scheme and Indira Gandhi National Disability Pension Scheme, the pension amount has been increased from ₹200 to ₹300 per month. Doubling the free grant given on the death of the main member of a BPL family aged 18 to 64 years, it has been increased to ₹20,000.

### **Major challenges in the face of nutrition security**

Agricultural productivity remains low, limiting the fulfillment of the needs of marginal and small-scale farmers in terms of production. According to a report by the Transforming India Foundation, more than 68% of marginal farmers supplement their income with non-agricultural activities. The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is experiencing a shortage in primary labor and other temporary labor types, indicating a lack of skills or opportunities for income enhancement.

### **Decreasing natural resources**

Decreasing natural resources and changing climate are making food production in India highly insecure. According to the Soil Health Survey of 2023, nearly half of the agricultural land in India has experienced a decline in organic carbon, which is a vital indicator of soil health. Groundwater, the primary source of irrigation, is rapidly depleting, with over-extraction exceeding 75% in states like Punjab, posing a threat to agricultural income.

### **Friendship Food Distribution Systems**

Through the public distribution system, adequate food distribution contributes to increasing food availability and security. However, due to flawed processes, the targeted public distribution system often excludes eligible candidates, leading to situations where individuals are deprived of benefits like Antyodaya Anna Yojana (AAY) or Below Poverty Line (BPL) status, resulting in reduced uptake of food grains and a deterioration in the quality of grains distributed. Consequently, the situation changes due to post-shop service challenges.

### **Lack of monitoring of nutrition programs**

Several schemes have been introduced in the country to bring improvement in nutrition, but they have not been implemented properly. For example, many states have been successful in effectively implementing the Mid-Day Meal Scheme.

### **Lack of inter-sectoral coordination**

Along with the lack of compatible food and nutrition policies, the absence of inter-ministerial coordination among various ministries of the government such as the Ministry of Women and Child Development, Ministry of Health and Family Welfare, Ministry of Agriculture, Ministry of Finance, etc., has exacerbated the issue.

### **Perspective on nutrition security**

The need is to shift consumer demand and engagement towards healthier and sustainable food options. We must adopt food alternatives like water chestnuts or quinoa, grown locally in India, following the perspective utilized by corporations. Creating partnerships with civil society and health communities, along with leveraging social media, can promote healthier consumption for millions.

Public sectors like midday meals, railway catering, urban canteens, and public procurement can aid in enhancing the well-being of at least 70% of Indians. Religious institutions can also contribute by influencing food choices, as seen with the Tirumala Tirupati Devasthanam, which serves approximately 70,000 people daily and is now purchasing naturally grown products.

#### **Support for farmers and sustainable agriculture**

We should support farmers in moving towards profitable and sustainable agriculture practices so that they can expect a secure future. The National Mission on Natural Farming is a positive step in this direction, but our commitment to sustainable agriculture is still lacking, even with just one percent of the agricultural budget allocated for it. We need to extensively expand and broaden aspects like agricultural mechanization, agricultural extension services, and conservation farming for various agricultural situations. Direct cash assistance to farmers per hectare for farming should be central to agricultural support, encouraging skilled use of inputs. This will enhance agricultural productivity and provide equal opportunities for the fruition of agricultural practices. Allocating a portion of the budget to agricultural research and extension services focused on sustainable farming is essential, as it can provide farmers with the necessary knowledge and tools for sustainable agriculture.

#### **Conclusion:**

The objective of food security is to eradicate hunger and malnutrition. Therefore, it becomes necessary to control this problem by improving the national agricultural policy to reduce agricultural risks and strengthen food security, and by incorporating other biological methods into the food chain. For this, attention needs to be paid to land, water, energy, nutritional elements, genetic diversity, pest management, post-harvest systems, organic farming, and agricultural mechanization. Agricultural practices need to be diversified. Along with agriculture, research and surveys, market information networks, Jayashree agricultural marketing schemes, and attention to food security laws are also required. Until the country achieves complete self-sufficiency in terms of food security and ensures that every individual, down to the lowest level, has access to adequate food, the number of hungry people will continue to increase. Therefore, food exports should not be expected. The expected food security law should guarantee not only adequate food for everyone but also freedom from hunger, malnutrition, and hunger-related diseases, and ensure that no one sleeps hungry at night. Therefore, it is time to find a solution to the problem of hunger in the country's agricultural system.

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## **Mini Windmill Power Generation & Saving**

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### **Abstract:**

The mini windmill power generation project aims to harness renewable energy from the wind using a scaled-down wind turbine. By utilizing the kinetic energy of the wind, the mini windmill generates electricity through the rotation of its blades. The project focuses on designing an efficient and compact wind turbine system suitable for small-scale power generation. Through experimentation and analysis, the project investigates factors such as blade design, wind speed, and generator efficiency to optimize energy output. This sustainable energy solution holds the potential to contribute to local power generation, reduce carbon emissions, and promote the adoption of renewable resources.

**Keywords:** Mini windmill power generation, Renewable energy, Wind turbine, Kinetic energy, Electricity generation, Blade design, Wind speed, Generator efficiency, Analysis.

### **Introduction**

In a world striving for sustainable energy solutions, our Mini Windmill Power Generation project offers an innovative approach to harnessing the power of the wind. The concept is simple yet impactful by utilizing miniature wind turbines, we aim to generate clean and renewable electricity. With a focus on efficiency and adaptability, our project explores the design and functionality of these compact wind turbines. Through experimentation and analysis, we aim to optimize energy output while considering factors such as blade design, wind patterns, and generator technology. The potential of mini windmills extends beyond their size. These unobtrusive devices can be integrated into various environments, contributing to localized power generation without compromising aesthetics or space. As we delve into this project, we envision a future where mini windmill power generation plays a pivotal role in reducing carbon emissions and promoting sustainable energy practices.

### **Literature Survey:**

#### **1. “Induction Motor Speed Control Using PLC AND SCADA”**

**Authors:** Vaibhav Gupta

**Conference:** International Journal of Emerging Trends in Engineering Research (IJETER), 2015

This conference paper presents a detailed study on the speed control of a three-phase induction motor using a PLC and VFD. It covers the hardware setup, control algorithm, and results.

#### **2. “Design and Implementation of PLC-Based Monitoring Control System for Three-Phase Induction Motors Fed by PWM Inverter”**

**Authors:** Yasar birbir, H. Selcuk nogay

**Journal:** International Journal of Emerging Technology and Advanced Engineering (IJETA), Volume 2, Issue 11, 2012

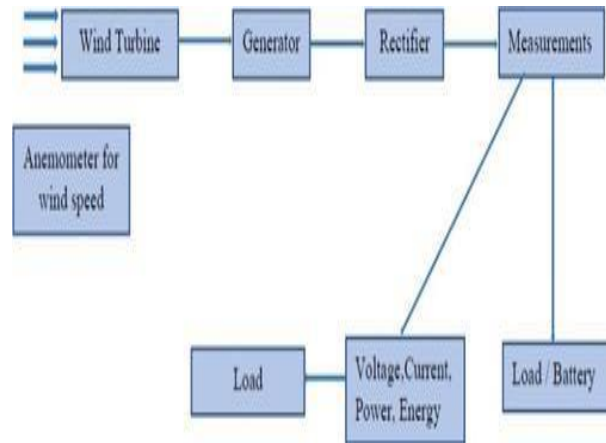
The paper discusses the use of VFDs and PLCs for speed control of induction motors. It provides insights into the working principle of VFDs and their integration with PLCs.

#### **3. “Speed and Frequency Control of AC Induction Motor Using Variable Frequency Drive”**

**Authors:** Syed Usama Hassan, Hafiz Bilal Akram  
**Journal:** International Journal of Engineering Research & Technology (IJERT), Volume 6, Issue 2, 2017

This paper focuses on the integration of PLCs, VFDs, and Human-Machine Interface (HMI) for induction motor speed control. It discusses the role of HMI in user-friendly control and monitoring.

**Methodology:**



**Fig. 1 Block Diagram**

Xxx-X-Xxxx-Xxxx-X/Xx/\$Xx.00 ©20xx Ieee

A green highway is constructed as per a relatively new concept for roadway design that integrates ecological sustainability and transportation functionality. An environmental approach is used throughout the planning, design and construction. The result is a highway that will benefit transportation, public health, ecosystem, urban growth and surrounding communities.

As it is not suitable for all wind turbines to create electrical energy in all directions in minimum design cost, installation and maintenance. To overcome all these problems VAWTs are introduced which produces continuous energy in a useful manner. VAWTs are adjustable, portable, low cost and less maintenance.

**Working:-**

The "Speed Control of Induction Motor Using PLC & VFD" system operates smoothly to regulate the speed of an induction motor. Imagine it as a team effort between a smart controller (PLC) and an adjuster (VFD).

Sensors constantly check how fast the motor is spinning. The PLC, acting like the brain, thinks about the ideal speed by comparing it to what's wanted. It then sends instructions to the VFD on what changes to make in the power going to the motor

The VFD, like a speed knob, adjusts the power going to the motor to hit the desired speed.

This continuous loop ensures the motor stays at the right speed, adapting as needed

Operators can easily set the speed and monitor things through a simple panel or interface.

For safety, there are quick-stop buttons, and the system can spot and report issues

If someone needs to control things from afar, the system can communicate remotely. If a problem arises, the system alerts people and can even fix small issues by itself.

In essence, the PLC and VFD collaborate to keep

the motor running efficiently and safely for the task at hand.

**Conclusion:**

The Mini Windmill Power Generation project presents a significant stride towards sustainable energy solutions by harnessing wind power through scaled-down wind turbines. Through the utilization of kinetic energy from the wind, these mini windmills efficiently generate electricity via blade rotation. The project's core objective lies in the development of an effective and compact wind turbine system tailored for small-scale power generation. By delving into experimentation and analysis, it scrutinizes crucial factors such as blade design, wind speed, and generator efficiency to fine-tune energy output. This endeavor embodies a sustainable energy solution with vast potential, poised to make notable contributions to local power generation while concurrently curbing carbon emissions and advocating for the adoption of renewable resources. With its emphasis on efficiency and adaptability, the project underscores the feasibility of integrating mini windmills into diverse environments, facilitating localized power generation without sacrificing aesthetics or space.

In a world increasingly cognizant of the imperative for sustainable practices, the Mini Windmill Power Generation project offers a promising pathway towards a cleaner, greener future. Through meticulous research, innovative design, and practical implementation, it paves the way for broader adoption of renewable energy technologies, positioning mini windmills as key players in the global transition towards a more sustainable energy landscape.

**Acknowledgement:**

It is our pleasure to get this opportunity to thank our beloved and respected guide **Prof. V. P. More** who imparted valuable knowledge of "Mini Windmill Power Generation & Saving". He is also

kind enough to spare his valuable time to guide us in making our project. We sincerely thank him for his consistent guidance, inspiration and sympathetic to work, which we sure, will go a long way in our life. We owe sincere thanks, more than what we can express, towards our Head, Electrical Engineering Department, Prof. B.B. Godbole for his constant inspiration, and assistance throughout the course.

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## Tourists Perception in Goa Beaches

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### Abstract:

The beaches are the principal attraction of Goa, the beaches impressed the domestic and foreign tourists in Goa. Tourism all over the world has become a powerful industry after the world war-II, tourism has emerged as an industry in most countries. The stress was on projecting new tourism destinations and activities, promoting beaches and shopping as a major attraction and stressing the cultural richness of the country. India is no doubt the most appropriated country as a year round destination, article written regarding tourism have focused on various angles, few authors have written on its role in national integration, thus binding all sections of people in the society. Some have concentrated on tourism's economic advantage for bringing about financial and economic gains, as discussion in article, the write-up regarding tourism and its related aspects saw light only during the last quarter of the 20<sup>th</sup> century. A few recent studies have been reviewed keeping in mind, the objectives and scope of the present article. A study undertaken by Chamberlain (1982) dealt with knowing the growth of the international tourism. He observed that the most important contribution of tourism is of creating jobs and business, that tourism is a crucial resource-generating activity and pushes up the pace of economic development. The areas identified were the need for trained manpower, transport needs, performance of travel agents, all other aspects in the development of tourism, marketing of tourism is quite essential. If all tourism has to reach the larger population, then marketing needs have to be looked at very closely.

### Introduction:

The day today life of individuals has become a routine work, so in order to break from this monotonous life they often work out plans to engage themselves in various entertainment options. One of such option is travelling to distant places of interest. People move from their place of residence to other places of interest in search of entertainment,

### Study Area:

Goa has a total geographically area of 3.702 sq kms and its location position is marked by  $14^{\circ} 53' 54''$  N to  $15^{\circ} 48' 00''$  N latitude and  $73^{\circ} 40' 33''$  E to  $74^{\circ} 20' 13''$  E longitude, in the north, Goa has a common boundary with Ratnagiri and Kolhapur district of Maharashtra state, in the west, Goa has a 100 kms of long coastline washed by the waters of the Arabian Sea and in the east, Goa share a boundary with Belagavi, Dharwad and North

pleasure, as they have leisure time with them. In view of development of business, people engaged in business move out to explore new avenues and opportunities for the growth of their business and enjoyment. Apart from this, beach resorts, pilgrimage, archaeology, hill stations, cultural events also have contributed to the growth of tourism.

Kanara district of Karnataka State, Goa has a hilly terrain, especially on its eastern side lies the southern ends of Sahyadri range hills. It has a number of rivers, which are of immense importance for the developmental activities of the state are; Terekhol, Mandovi, Zuari and Talpona. In terms of topography Goa falls into three distinct areas; The Western Ghat, The Malnad Region and The Coastal Region.



**Objectives:**

1. To know the domestic and foreign tourists perception in Goa beaches,
2. To review the development of tourism in Goa beaches and
3. To understand the conceptual framework of various beaches of Goa state.

**Hypothesis:**

The natural scenario and infrastructure facilities of beaches attracts the domestic and foreign tourists frequency in Goa.

**Methodology:**

Primary data is collected at Goa by interviewing to the tourists with the help of and questions and also collected secondary data from the organizations associated with the tourism Goa, data collected from field work were substantial and they are arranged, The results are presented in the form of tables, graphs and diagrams. The simple but effective statistical methods of analysis are used for processing the available data.

**Analysis Of Tourists Perception In Goa Beaches: Domestic and Foreign Tourists Perception in Goa Beachs**

It is evident that, Calangute and Baga have impressed the domestic tourists with 21.94 and 22.29% each and given good position, it is followed by Miramar (11.58%). Anjuna (10.19%), Vagator (7.77%), Bogmalo (5.27%), Colva and Majorda (each with 7.82%), Palolem (1.90%), Benaulim (1.47%), Sinqerim (1.38%), Harmal (0.69%), Agonda (0.94%), Mabor (0.43%) and other beaches account for 7.00%. Also it is clear that, Baga has impressed foreign tourists with 48.86% and positioned in the top position, which is followed by Calangute (12.36%), Benamalim (10.33%), Anjuna (8.47%), Vagator (7.24%), Bogmalo (6.71%), Majorda (6.00%), Colva (5.65%), Miramar (4.59%), Mobor (1.76%), Sinqerim (1.59%), Palolem (1.41%), Agonda (0.35%), and other beaches have impressed (10.41%).

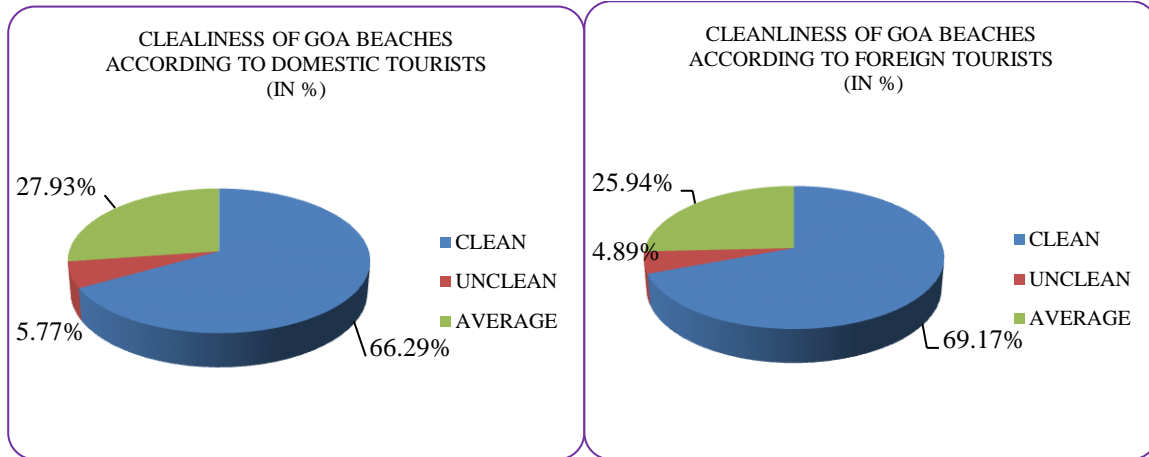
Name of Beaches	No. of Tourists and Percentages			
	Domestic	%	Foreign	%
Calangute	508	21.94	140	12.36
Anjuna	236	10.19	96	8.47
Bogmalo	122	5.27	76	6.71
Baga	516	22.29	260	22.95
Colva	90	3.89	64	5.65
Majorda	91	3.89	68	6.00
Sinqerim	32	1.38	18	1.59
Vagator	180	7.77	82	7.24
Miramar	268	11.58	52	4.59
Agonda	10	0.43	04	0.35
Mobor	6	0.26	20	1.76
Palolem	44	1.90	16	1.41
Benaulim	34	1.47	117	10.33
Harmal	16	0.69	02	0.18
Others	162	7.00	118	10.41
Total	2315	100.00	1133	100.00

**Cleanliness of Goa Beaches as seen by the Domestic and Foreign Tourists**

The up keeping and maintenance of beaches is necessary to protect them from pollution,

degradation and cleanliness, with this view in mind, information on the cleanliness, as viewed by the tourists was sought.

Cleanliness	No. of Tourists and percentages			
	Domestic	%	Foreign	%
Clean	712	66.29	368	69.17
Unclean	62	5.77	26	4.89
Average	300	27.93	138	25.94
Total	1074	100.00	532	100.00



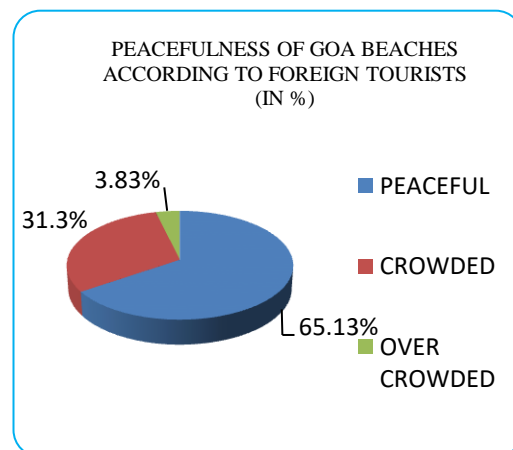
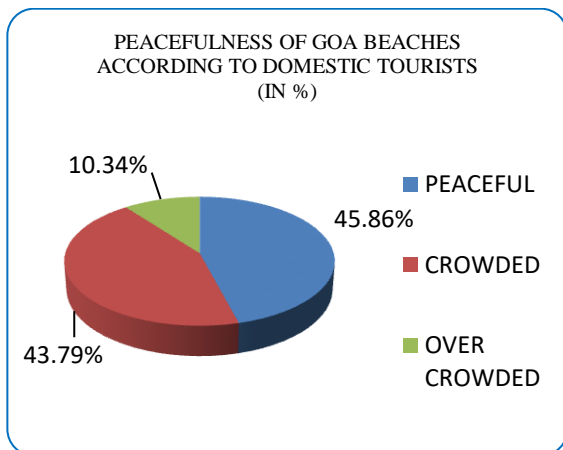
It is clear from above table and diagram that, 66.29% of the domestic tourists have opined that, Goa beaches are clean, which is followed by average cleanliness account for 27.93%, and 5.77% of the domestic tourists felt unclean conditions, likewise even the foreign tourists, which are quite similar i.e.66.29% of them have stated that beaches are clean, this is followed by 25.94% average and 4.89% unclean conditions of beaches. That means for most of the tourists beaches are clean, but for

others these should be improved in cleanliness and maintenance of conditions.

**Peacefulness on Goa Beaches according to Domestic and Foreign Tourist**

It is but, natural beaches, which form major attraction for the tourists may become crowded, disturbing the peaceful nature of the beaches and tourists. The following table and diagram shows the opinions of the domestic and foreign tourists respectively.

Peacefulness	No. of Tourists and percentages			
	Domestic	%	Foreign	%
Peacefulness	488	45.86	340	65.13
Peaceful	466	43.79	162	31.03
Crowded	110	10.34	20	3.83
Total	1064	100.00	522	100.00



From the above table, it is clear that, only 45.86% of the domestic tourists have stated that beaches are peaceful. 43.79% have stated crowded condition and for 10.34% beaches are overcrowded. That means for over 45.86% of domestic tourists the beaches are found to be crowded or overcrowded. It is possible to reason out here that most of the Indian tourists

may be visiting nearby beaches, which are more accessible and due to the same reason they are already more crowded. Also it is clear that form 65.13% of the foreign tourists say the beaches are peaceful, 31.03% the beaches are crowded and for 3.83% they are overcrowded. That amounts to 35.00% of the foreign tourists the beaches are



crowded or overcrowded, which is less than domestic tourists experiences, this may be attributed to the fact that foreign tourists prefer peaceful and remote beaches.

**Conclusion And Suggestions:**

The local people of Goa are really cooperative in providing information about the destination. The people of Goa are highly educated and have good communication with inbound and outbound tourists. The Goa city has well built infrastructure, local restaurants of Goa are costly in terms of food, during the visit, it found that, city is very clean, residents, shop keepers etc are very kind. A number of foreign tourists, who come to Goa are mostly for holiday, rest, relaxation, entertainment and enjoyment, most of the tourists are frequent visitors, who love the nature and climate as well as beaches of Goa. Goa has a lot to attract for tourist, its nature, nightlife and mainly for the beaches and also heritage centres such as, churches and forts. It has a great influence of Portuguese culture. The Government should create basic amenities like toilet facilities like; drinking water, hospitality, to build toilets/public convenience and provide tap water for bathing purpose on the beaches.

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## **Design And Implimentation Of Solar Based Smart Irrigation System**

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### **Abstract:**

The disparity in supply and demand for these commodities is the root cause of India's present energy and water issues. Because traditional irrigation systems tend to water when it is not necessary, a sizable portion of water waste occurs within irrigation systems. The Fourth Industrial Revolution (4IR) has made it feasible to transition from manual to automated irrigation systems. The goal of this project was to optimize the usage of water and electricity during irrigation operations by designing and implementing a smart irrigation system driven by solar energy. The device can be used manually or automatically and features a GSM module for connectivity. A study was conducted and the results showed that the device reduced water usage by 25% to 57.8%.

**Keywords:** Node MCU, GSM modem, Temperature and Humidity sensor, Solar Pannel, Soil Moisture Sensor, Float sensor.

### **INTRODUCTION:**

In recent years, environmental conservation has emerged as a major priority for nearly all nations. Even if industrialization has been growing uncontrollably over the past few decades, it is evident that the current scenario is shifting in favor of greener alternatives. To keep human progress and a healthy environment in balance, water and air quality are crucial. It's also critical to remember that pollution and resource consumption in companies can both be reduced by searching for more efficient production methods. Almost all types of factories operating today perform processes like boiling, drying, binding, and so on.

Numerous gas emissions and contaminated water discharges are caused by those procedures. Measuring the quality of the waste water being dumped into the public sewer is important, even though most factories have their own sewage plants. In actuality, having clean air is essential to day-to-day existence. Human health is impacted by air pollution, which is seen as a major global issue, particularly in nations where the oil and gas sectors are well-established. The United States Environmental Protection Agency (USEPA) states that the following gases are measured to determine the quality of the air: hydrogen sulfide (H<sub>2</sub>S), ground-level ozone (O<sub>3</sub>), and carbon monoxide (CO).

Environmental monitoring aims to provide useful information to end users while also collecting data from multiple sites and providing scientists, planners, and policy-makers with the information they need to make informed decisions about

managing and enhancing the environment. Significant efforts are made to enhance the quality of the air in both indoor and outdoor spaces.

### **LITERATURE SURVEY:**

Verma Gaurav "IOT-Based Real-Time Weather Prediction System with Machine Learning" Three crucial aspects of the suggested system—temperature, light, and humidity—are tracked and data is posted to the Thing Speak cloud. The system has been set up indoors, and a Google spreadsheet has been used to record the parameter values. "A Novel Environmental Monitoring System for Real Time using Arduino and Node JS," by Subhadra Kompella. The environment's temperature and humidity can be tracked in real time with this method. Wi-fi transmits the sensed or gathered data to the cloud, where it is displayed together with graphical analysis.

"Surveillance of Environment using Node Mcu Based on Iot," T. Penchala Naidu. A wireless sensor network prototype for monitoring environmental conditions is being created using a Node MCU, together with DHT11 and MQ135 sensors for temperature and humidity, CO<sub>2</sub> levels, and pulse and heart rate monitoring, respectively. People can easily access real-time data from the Cloud platform, increasing awareness and enabling appropriate preventive steps to be performed. When the soil moisture content is low, the co<sub>2</sub> sensor, etc., will activate the pump valve to irrigate the system. The development of the system makes use of sensors and Raspberry Pi.

Mr. Jitcha Shivang and "machine learning-based weather prediction for Indian locations." The suggested approach makes use of machine learning

techniques like linear regression and data analysis to forecast different weather conditions across the Indian subcontinent. Jawahar Thakur and Mrs. Divya Chauhan, "Data mining technique for weather prediction." The suggested solution demonstrates that employing data mining techniques to forecast weather produces positive outcomes and is a viable substitute for conventional metrological methods. The paper concludes that key strategies including decision trees and lazy learning are effective in forecasting a variety of meteorological phenomena, including temperature, rainfall, and thunderstorms. It also describes the capacities of different algorithms in doing so. The K-medoids algorithm, the Naive Bayes algorithm, the Vector Machine, the FP Growth Algorithm, Hadoop with Map Reduces, and the decision tree classification technique. "Analysis of Three IoT Based Wireless Sensors for Environmental Monitoring," by George Mois, an IEEE member. The WiFi-based module of the proposed system connects the temperature, humidity, and pressure sensors, and HTTP is used to plot the data on the web server. To cut down on power usage, use the sleep and wake modes. An HTTP web server was used to plot the recorded data. Temperature, humidity, and pressure sensors, LDR, wind speed, rainfall, and cloud conditions are all taken into consideration in the earlier research projects, and the model uses these observed parameters for training and testing. The correctness of the model evaluation result will be shown after. The temperature and humidity parameters in my suggested system are detected by a single sensor unit and shown on a cloud platform. "Analysis of Three IoT Based Wireless Sensors for Environmental Monitoring," by George Mois, an IEEE member. The WiFi-based module of the proposed system connects the temperature, humidity, and pressure sensors, and HTTP is used to plot the data on the web server. To cut down on power usage, use the sleep and wake modes. An HTTP web server was used to plot the recorded data. Temperature, humidity, and pressure sensors, LDR, wind speed, rainfall, and cloud conditions are all taken into consideration in the earlier research projects, and the model uses these observed parameters for training and testing. The correctness of the model evaluation result will be shown after. The temperature and humidity parameters in my suggested system are detected by a single sensor unit and shown on a cloud platform.

#### **METHODOLOGY:**

The system is divided into three sections: hardware testing, automatic irrigation, and manual watering. You can access each section by utilizing the menu options in the The control box with these

menu selections will show up on the screen. The amount of water in the water storage was determined using the moisture sensor. It functions by producing sound waves, which are subsequently reflected off of the water to determine the moisture content of the water. After that, the sensor's value is shown on the screen and via an SMS sent by GSM MODEM. When the sensor's value is greater than 800, it indicates that there is less water in the water storage, and when it is less than 800, it indicates that there is sufficient water for watering to occur. Sound waves are sent to the water by a moisture sensor, and the waves return to the sensor. A Node MCU microcontroller was in charge of the system. The Bluetooth module, GSM module, and soil moisture sensors were all controlled by it. It consists of six analog input pins and fourteen pins that, when used in pin mode, can be used as either digital input or output. This board accepts input voltages between 7 and 12 V. The battery was charged by the solar panel and used to power the pumps. The soil moisture sensor value was shown on the mobile app, and the plants were automatically watered.

#### **WORKING AND FLOW CHART:**

PV panels are used in solar power irrigation systems to convert solar radiation into electrical power. The battery is charged by this electricity using a charge controller, which also serves as a battery protector. The water pumps, which take water from a reservoir or a well, are run by this electricity. Water is subsequently sent to the fields by the pumps using sprinklers and pipes.

When solar cells are installed in the pumps that move water, a solar irrigation system functions. Here, the solar energy that the cells capture is transformed into electrical energy, which powers an electric motor that powers the pump.

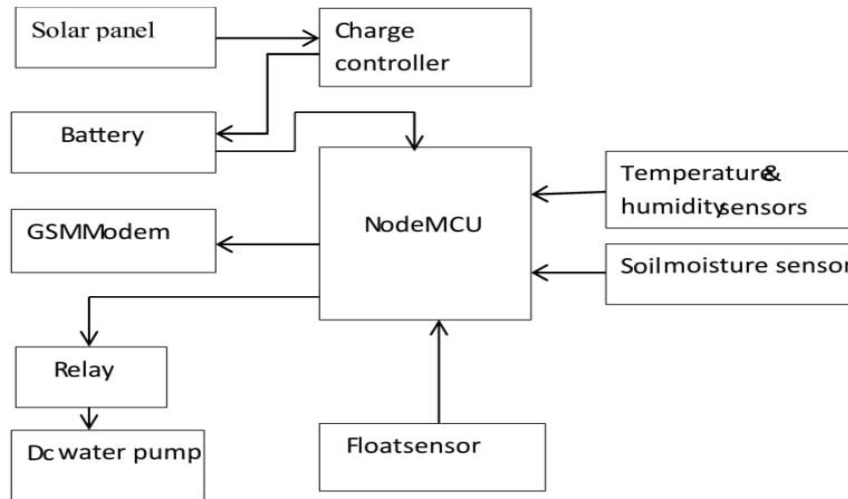
In essence, photons from the sun are converted into electricity to run the water pump by solar-powered water pumps. It gathers photons, or units of light, from sunlight using solar panels, creating direct current (DC), which gives the motor the energy to pump water out of its source. Photovoltaic (PV) or solar panels are the first component of the system; they are placed in a location that receives plenty of sunshine. These solar panels use the photovoltaic effect to absorb sunlight and transform it into power. Charge Controller: Direct current (DC) electricity produced by the solar panels must be controlled before the irrigation system may use it. In order to prevent overcharging of the batteries and to guarantee a steady power supply for the pump, a charge controller is utilized to control the voltage and current derived from the solar panels.

**Battery Bank:** A battery bank is a component used in many solar-powered irrigation systems that stores extra electricity produced during sunny spells for use at night or in situations where sunshine is

scarce. In places with sporadic sunshine or off the grid, batteries are crucial for maintaining stability and ongoing operation.

**Water Pump:** The irrigation system's main component, the water pump runs on electricity

produced by the solar panels. The kind of irrigation system and the water supply (such as wells, rivers, or reservoirs) will determine which kind of pump to employ. Some common types of pumps are surface, submersible, and centrifugal.



**Fig. flow chart of solar based irrigation**

**Results and Discussions:**

**Water Efficiency Optimization:** By continuously checking the soil moisture content, the system efficiently managed water resources. It made sure that watering was only done when necessary, avoiding overwatering.

- Precise irrigation scheduling was made possible by real-time data from soil moisture sensors, guaranteeing that plants received the appropriate quantity of water at the appropriate time.
- When compared to conventional watering techniques, this led to considerable water savings.

**Energy Sustainability:** The irrigation system was powered by solar panels, which offered a renewable and sustainable energy source.

- By utilizing solar power, the system functioned effectively and decreased reliance on grid electricity. By cutting carbon emissions, this not only decreased operating expenses but also improved environmental sustainability.
- **Crop Yield Improvement:** Healthier plants with faster development rates and higher yields were produced when ideal soil moisture levels were maintained.
- Because of regular and sufficient irrigation, plants were less susceptible to stress, which improved crop health overall.
- The system's capacity to modify irrigation in response to current conditions allowed for the best possible growth circumstances for a range of crops.

- A user-friendly interface allowed agricultural managers and farmers to remotely monitor the system.
- This remote monitoring capability saved farmers time and effort while giving them peace of mind regarding the state of their crops. Alerts were provided in case of abnormal conditions, such as low soil moisture or system faults, enabling rapid response.

**Water Conservation and Sustainable methods:**

The precision irrigation feature of the system reduced water waste, which is consistent with sustainable water management methods. The efficient use of water was especially helpful in areas where water is scarce, since every drop counts for agricultural output. **Energy Efficiency and Cost Savings:** The system's economic viability was aided by lower operating costs and a decreased dependency on non-renewable energy sources. The system's solar-powered operation also cut electricity costs, particularly in isolated agricultural areas without access to grid power.

**Measures of Performance** Give information about the efficacy and efficiency of the irrigation system powered by the sun. Incorporate data on energy usage, system dependability, and water supply rate. **Comparing Traditional Systems** Evaluate the solar-powered irrigation system's performance in comparison to conventional techniques. Emphasize any increases in effectiveness, affordability, or environmental effect. **Seasonal Differences** Talk about any differences in the way the system performs during the various seasons. Examine the effects of variations in temperature and sunshine availability on system

performance. Case Studies Provide case studies or field tests that illustrate how well the technology works in actual situations. Provide information on agriculture yields, water conservation, and financial gains. Effectiveness and Durability Examine the outcomes in light of the overall sustainability and efficiency of the system. Talk about how using solar energy minimizes carbon emissions and dependence on fossil resources. Financial Sustainability Evaluate whether installing a solar-powered irrigation system is financially feasible. Think about long-term savings, operating costs, and the cost of the initial expenditure.

Adaptability and Scalability Examine how well the system can be scaled and adjusted to fit various agricultural situations. Talk about the opportunities and possible obstacles to widespread adoption. Technological Progress Emphasize any new developments in technology that could improve the system's functionality even more. Think about cutting-edge innovations in precision farming, water management, and solar power generating. Impact on the Environment. Analyze how the irrigation system powered by solar energy affects the environment. Talk about how it can help slow down global warming, cut pollution, and preserve water supplies.

#### **CONCLUSION:**

To support the proposal, a prototype of the solar-powered smart irrigation system was constructed and put into operation.

Method designed to minimize water and electricity waste during irrigation, with the water waste results cutting 25% and 57.8% of the farmer's water usage and electricity bills, respectively. Every experiment required to verify the system's functionality was carried out, and the outcomes were satisfactory. Soil moisture should be utilized on an actual farm to cover all of the soil there.

Future work could involve adding more solar panels and a larger battery bank to boost the system's performance on cloudy and bright days. The three angles that the solar panel can accommodate are limited, but this can be enhanced by employing a solar panel that can track the sun's direction automatically. The mobile app was limited to storing sensor and watering information automatically; however, it is possible to enhance this by include rainfall detection in the app and utilizing the internet of things (IoT)

Numerous studies on solar-powered irrigation projects have led to the conclusion that there are major advantages. It has been discovered that using solar irrigation facilities (SIF) can save irrigation costs by 21% to 30% and enhance ROI by 20% to 30%. The article highlights communal solar-powered irrigation systems (SPIS) as an affordable option. PVWP systems exhibit lower maintenance and operation expenses when compared to traditional diesel pumping systems.

Furthermore, the development of solar-powered auto irrigation systems uses sensor-based technologies to optimize water usage, lower labor costs, and improve system reliability. With an asset return of 9.14% and a self-sufficiency level of 46.6%, the techno-economic study of grid-connected solar PV systems for agricultural irrigation shows that the systems are both technically and financially feasible. All things considered, these results highlight how solar-powered irrigation can improve agricultural output and sustainability.

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## **Evaluating Constraints of Female Child Labour**

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### **Abstract**

Children are the gift of God and very innocent towards life. It is surprising that due to many reasons they are the victims of female child labour. Today's girl are tomorrow's future. Still in many states female is found doing labour work.

Worldwide, 7.1 million children are engaged in forms of domestic work that constitute child labour, of these, 4.4 million (62%) are girls, and 2.5 million (57%) are aged between 5 - 11 years. The specific objectives are to assess the information status of parent of child labour, to find out the working condition of female child labour, to find out the causes of female child labour, to study the problems and difficulties of female child labour. The 200 sample of Kurkheda block of Gadchiroli district have selected for study. It has been found that 42.5 % female child labour had education upto Std. 1-4., 44.5% have single parenting of female child labour, cutting tendupatta and picking of moh leaves is a traditional work and stood in the I rank order, Poverty is the major cause for female child labour and coded as I rank order. The major constraints faced by female child labour were that she has to work for long hours as compared to others.

**Key words:** Female child labour, constraints

### **Introduction:**

The term "Child labour" is often defined as work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development." Subsequently the act was amended in 2016 with the enactment of the child labour (Prohibition & Regulation) Amendment Act 2016 prohibiting the employment of children below 14 years in all employment. Hiring children below the age of 14 years for any kind of work, other than in certain family based work, is a cognizable offence and will attract a jail term of upto 2 years. Worldwide, 7.1 million children are engaged in forms of domestic work that constitute child labour. Of these, 4.4 million (62%) are girls, and 2.5 million (57%) are aged between 5 - 11 years. As the number of women in salaried employment increases, it has a positive impact on

the gender gap in earnings, which decreases with more women leaving casual wage work. These shifts in the female workforce imply a longer term impact on women's economic participation in the country.

### **Objectives:**

1. To assess the information status of parent of child labour.
2. To find out the working condition of female child labour.
3. To find out the causes of female child labour.
4. To study the constraints of female child labour.

### **Research Methodology:**

The study was conducted in Kurkheda block of Gadchiroli district. A sample of 200 female child labour beneficiaries has been selected on random basis to collect the data. The researcher has selected interview schedule method of data collection and collected the data from sample respondents.

### **Result and Discussion:**

**Table No. 1.1 Education of the female child labour N=200**

Sr.No.	Education	No. of Respondents	Percentage
1	Illiterate	35	17.5 %
2	Std. 1-4	85	42.5 %
3	Std. 5-7	30	15.0 %
4	Std. 8-10	50	25.0 %
	Total	200	100.0 %

The above table revealed that 42.5 % had education upto Std. 1-4 whereas 25.0 % had education till Std. 8-10. The illiteracy among female

child labour found to be 17.5% whereas negligible percentage had education upto Std. 5-7 respectively.

**Table No. 1.2 Information about parents of the respondents**

Sr.No.	Parent's data	No. of Respondents	Percentage
1	No parents	50	25.0 %
2	Single parenting	89	44.5 %
3	Both parents	61	30.5 %
	Total	200	100.0 %

It is indicated from the above table that 44.5% have single parenting of female labour, 30.5% had both parents and 25% child labour has no

parents at all that's why they are the victims of child labour.

**Table No. 1.3 Working condition of the female child labour**

Sr. No.	Occupation	No. of Respondents	Rank Order
1	Cutting tendupatta	178	I
2	Labour work in vitabhatti	57	V
3	Making agarbatti	168	II
4	Cutting and selling of Ranbhaji	154	III
5	Picking moh leaves	178	I
6	Household work with mothers	141	IV

It was very surprising about the working pattern of female child labour as they are cutting tendupatta and picking of moh leaves is a traditional work and stood in the I rank order, making agarbatti is an easy work for the labour and hence scored II rank order, Cutting and selling of ranbhaji also a traditional one which prevails in the society and

coded as III rank order. Household work with their mothers is a work which female child labour likes and stood in the IV rank order and Labour work in vitabhatti is a work which they are doing forcefully and hence accorded V rank order. As the frequency of each reply are more, the rank order has been considered for the study.

**Table 1.4 Causes of the female child labour**

Sr. No.	Causes	No. of Respondents	Percentage
1	Poverty	196	I
2	Lack of education	195	II
3	Unaware of child labour laws	171	VI
4	Gender discrimination	194	III
5	No social protection	193	IV
6	Natural disasters	141	VII
7	Demand for cheap labour	190	V

The causes had been analyzed given by the respondents and given rank order as there were multiple causes for each statement. Poverty is the major cause for female child labour and coded as I rank order. Lack of education is found in the child and hence scored II rank order. Gender discrimination found everywhere in this male dominated society and hence given III rank order. Many a times girls didn't get much protection in

society and found to be in IV rank order. Demand for cheap labour for females has been found and accorded V rank order. Though the female child labour are unaware about the child labour laws, people are taking advantage of it and scored VI rank order, Now a days due to natural disasters many problems and difficulties are faced by child labour and coded VII rank order simultaneously.

**Table 1.5 Constraints faced by female child labour**

Sr. No.	Constraints	No. of Respondents	Rank Order
1	Social inequality and discrimination	188	V
2	Long working hours	198	I
3	Deprived of entertainment	196	II
4	Health issues	194	IV
5	Less payment	195	III
6	Multiple work	141	VI

The above table show that the respondents has given multiple answers hence given rank order. The major problem faced by female child labour was long working hours(I rank order), all girls complained that as they are busy in work outside, they are not getting time hence deprived of entertainment (II rank order). Though she is working with shoulder to shoulder with others but due to gender discrimination she is getting less payment (IV rank order). Social inequality and discrimination found all over and hence scored V rank order.

Female child labour work from sun to sun but her work is never done as she is having multiple work (VI rank order) and unequal load of household responsibilities she is facing problems from many years.

**Conclusion:**

Female child labour force participation is an important driver and outcome of growth and development. The female child labour participate in it due to poverty. Sometimes this work referred to as the 5 Cs that is cleaning, catering, cashiering(retail),

clerical work, and caring. Women's work is a field of labour assumed to be solely the realm of women and associated with specific stereotypical jobs considered as uniquely feminine or domestic duties throughout history. Beti bachao, Beti Padhao is the most recent initiative started by the government to actively encourage people to save the girl. Apart from that, many HGOs, companies, corporate groups, human rights commission run various campaign to save girl child. The child rights and you (CRY) of india have been tirelessly working towards eradicating the child labour and ensuring the child welfare and development of India's children. Advocacy & policy change, awareness campaigns, support for education, livelihood opportunities, gender equality, disaster relief and legal advocacy.

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## **Knowledge Regarding Marital Property Rights Towards Rural Women**

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### **Abstract;**

Marital property exists to protect spousal rights. Most states are common law property states. The common law system provides that property acquired by one member of a married couple is owned completely and solely by that person. The major objectives of this study were to assess the general information of the respondents, to analyze the respondent's knowledge about marital property rights, to find out their opinion regarding their willingness to get their property rights, to assess the attitude of rural women regarding marital property rights. The data was collected from 231 respondents of tarodi village of Nagpur district. The current study shows that rural women have maximum knowledge about marital property rights and have a favourable positive attitude towards their rights.

**Key words:** Rural women, Marital women rights

### **Introduction:**

Men's work is from sun to sun but women's work are never done. Rural women plays a very major role in today's sphere. Rural women are a fundamental part of rural communities around the world. They play an important part in rural society. Marital property includes real estate and other property a couple buys together during their marriage, such as a home or investment property, cars, furniture, when not acquired by either as separate property. Bank accounts, pensions, securities, and retirement accounts are also included, even an individual retirement account, which is individually owned by laws, is marital property if earned income is contributed to it during the course of a marriage. If a wife buys a car and puts it only in her name than the car belong to her only. If she buys the car and puts it in both her and her husband's name, however the car belongs to booth of them.

### **Objectives:**

1. To assess the general information of the respondents.
2. To analyze the respondent's knowledge about marital property rights

3. To find out their opinion regarding their willingness to get their property rights.

4. To assess the attitude of rural women regarding marital property rights.

### **Research Methodology:**

The sample were collected from 231 respondents of tarodi village of Nagpur district were selected by simple random technique. Primary data and secondary data are used for the study. The selected 231 total respondents were studied using the interview schedule. Some data required for the study was collected from newspapers and related websites.

### **Scope of the Study:**

The study also made an attempt to gain the knowledge about marital property rights among rural women Without the security if a home or income, women and their families fall into poverty traps and struggle for livelihoods, education, sanitation health care and other basic rights. In recent years, international agreements have repeatedly emphasis on the importance of women's land and property rights.

### **Result and Discussions:**

**Table 1.1 Age of the rural women**

Sr. No.	Age	No. of Respondents	Percentage
1	18-21 years	27	11.68
2	22-25 years	29	12.55
3	26-29 years	59	25.54
4	30-33 years	57	24.67
5	34-37 years	31	13.41
6	38-41 years	28	12.15
	Total	231	100.0

The usually implies a considerable extent of time, especially one has associated with a dominant personality, influence and characteristic. The above table reveals that most of the rural women belongs

to the age group of 26-29 years (25.54%) and 30-33 years (24.67%) whereas 22-25 years (12.55%), 34-37 years(12.15%) and very few respondents belong to 18-21 years (11.68%) respectively.

**Table 1.2 Education of the rural women**

Sr. No.	Education	No. of Respondents	Percentage
1	Illiterate	16	6.92
2	Std. 1-4	32	13.85
3	Std. 5-8	63	27.27
4	Std. 9-12	66	28.57
5	Std. 11-12	43	18.61
6	Graduation	11	4.78
	Total	231	100.0

The educational qualification matters in life. Education plays a vital role in the case of property rights awareness and opinion of rural women. The education shows that the educated women have a high chance of her knowing about her property

rights. This shows that Std. 9-12 (28.57%) and Std. 5-8 (27.27%), Std. 11-12 (18.61%), and Std. 1-4 (13.85%). The negligible percentage were found to be illiterate and only 4.78% had graduation simultaneously.

**Table 1.3 Type of the family of the rural women**

Sr.No.	Type of family	No. of Respondents	Percentage
1	Nuclear family	119	51.51
2	Joint family	112	48.49
	Total	231	100.0

Joint family and nuclear family represent two distinct family structures that differ in terms of composition and dynamics. It is indicated from the

above table that 51.51% have nuclear family and 48.49% have joint family system prevailing in the society.

**Table 1.4 Family status of the rural women**

Sr.No.	Family status	No. of Respondents	Percentage
1	Low	39	16.88
2	Middle	179	77.48
3	High	13	5.64
	Total	231	100.0

Financial goals are set for the future and use money according to the family status and hence it is important that all are categorized into three types of income group i.e. low, middle and high income

groups. Most of the families belong to the middle income group i.e. 77.48%, low income group i.e. 16.88% and 5.64% belongs to high income group respectively.

**Table 1.5 Awareness about Matrimonial property rights**

Sr. No.	Awareness	No. of Respondents	Percentage
1	Yes	228	98.70
2	No	03	1.30
		231	100.0

The above information opined that 98.70 % are aware about matrimonial property rights and very negligible percentage were unaware about it. It

shows that rural women are interested in their property which is their fundamental right.

**Table 1.6 knowledge about Matrimonial property rights**

Sr.No.	Knowledge	No. of Respondents	Percentage
1	Yes	201	87.01
2	No	30	12.99
		231	100.0

Knowledge means information, understanding and skills that you have gained through learning or experience. Thought the rural women are aware about their matrimonial property

rights hence they have much knowledge about it i.e. 87.01 % and 12.99 % have not much information about it.

**Table 1.7 Opinion regarding willingness about property**

Sr. No.	Opinion regarding willingness	No. of Respondents	Percentage
1	Yes	228	98.70
2	No	03	1.30
		231	100.0

An opinion is a belief or attitude about something that isn't necessarily based on facts. Some rural women are very opinionated, which means they are certain about what they think and believe and express their ideas and opinions strongly

and frequently. It was very surprising that 98.70 % are satisfied and confirm "yes" willingly for their property and negligible percentage rural women are unsatisfied regarding it.

**Table 1.8 Attitude of rural women towards property**

Sr.No.	Attitude of rural women	No. of Respondents	Percentage
1	Positive	229	99.13
2	Negative	02	0.87
		231	100.0

An attitude means the way that you think, feel or behave. Instead of denying or neglecting it or whatever attitude in the past always think positive and have positive attitude towards it. It has been clearly indicated that 99.13 % had positive attitude towards matrimonial property rights.

**Conclusion:**

Though the marital property rights are legal right are in favour of women, she is ready to fight with men shoulder to shoulder. In some houses, there should be attitudinal change of parents then only the women will get their property easily. There should be no discrimination between their wards.

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## Role of Mass Media in Rural Sector of Kurkheda Block of Gadchiroli District

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**Abstract:**

Rural development still remains the core of the overall development of the country.

It is generally said that the rural areas house upto 70% of India's population. The objectives are to assess the general information of the respondents, to identify the knowledge regarding mass media and to examine the role of mass media in rural sector. The 222 samples from Kurkheda block of Gadchiroli district has been selected for the study. The findings are the majority of the respondents belongs to 32-41 years of age group. Regarding educational qualification the respondents had educated from Std. VI to X mainly.

**Introduction:**

Rural sector or development usually refers to the method of enhancing the quality of life and financial well-being of individuals, specifically living in populated and remote areas.

The mass media including newspapers, radio, television, and the internet can play an important role in rural development by providing information, promoting education, and raising awareness among the rural population. In the current situation, the role of mass media is very important to upgrade the rural society. It can stimulate the rural people towards progress. The mass media have been used at once for transmission of development communications to the people of this society as in others. 95.49 % agreed about the knowledge

regarding mass media. that majority of the respondents i.e. 72.52 % watch Television which is most effective for the rural sector.

**Objectives:**

1. To assess the general information of the respondents.
2. To identify the knowledge regarding mass media.
3. To examine the role of mass media in rural sector.

**Research Methodology:**

A samples of 222 has been selected for the study of Kurkheda block of Gadchiroli district. Interview schedule has been prepared for this purpose. A set of questions prepared and analysis is done with the help of percentage only.

**Result and Discussion:**

**Table 1.1 Age of the Respondent**

Sr. No.	Age	No. of Respondents	Percentage
1	21- 31 years	45	20.27 %
2	32-41 years	85	38.28 %
3	42-51 years	71	31.98 %
4	52-61 years	15	6.75 %
5	62-71 years	06	2.72 %
	Total	222	100.0 %

It is observed that majority of respondents i.e. 38.28 % belong to the age group of 32-41 years, 31.98 % are of 42-51 years, whereas 20.27 % from

the age group of 21-31 years and very negligible percentage of 52-71 years respectively.

**Table 1.2 Education of the Respondents**

Sr. No.	Education	No. of respondents	Percentage
1	Upto Std. V	56	25.22 %
2	Std. VI-X	96	43.24%
3	Std. XI-XII	60	27.02 %
4	Graduation	10	4.52 %
	Total	222	100.0 %

It was found that most of the rural sector had their education upto Std. VI- X i.e. 43.24 % , 27.02 % had education of Std. XI-XII, 25.22 %

educated upto Std. V and 4.52 % had taken education till graduation.

**Table 1.3 Knowledge regarding mass media**

Sr. No.	Knowledge	No. of Respondents	Percentage
1	Agree	212	95.49 %
2	Disagree	10	4.51 %
		222	100.0 %

It is identified from the above table that 95.49 % agreed about the knowledge regarding mass media and negligible percentage disagree towards it.

**Table 1.4 Role of mass media in rural sector**

Sr. No.	Mass media	No. of Respondents	Percentage
1	Radio	09	4.05 %
2	Television	161	72.52 %
3	Internet(Mobile)	34	15.31%
4	Newspaper	11	4.95% %
5	Books	07	3.17 %
		222	100.0 %

It opined from the above table that majority of the respondents i.e. 72.52 % watch Television which is most effective for the rural sector. It was quite amazing that only 15.31 % of the respondents watch internet as a source of information. Very few respondents listen radio (4.05%) and hardly 3.17% still read books for the entertainment purpose.

**Conclusion:**

The role of mass media plays a very important role to upgrade the rural society. It can stimulate the rural people towards progress. The mass media have been used at once for transmission of development communication to the people of this society as in others.

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## A Detailed Investigation and Strategy Projection of Growing Marketing Patterns in 2023

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### Abstract:

Marketing patterns allude to the changes, improvements, and advancements in promoting that impact the way of behaving of shoppers and organizations. As innovation progresses, promoting patterns proceed to advance, and organizations should keep up-to-date with the furthest down-the-line patterns to stay cutthroat in the commercial center. This study means to recognize and dissect the advertising patterns that organizations ought to keep an eye out for in 2023. This study looks at different sources, including industry reports, scholastic examination, and well-qualified conclusions, to recognize the main promoting patterns prone to shape the Marketing scene in 2023. The philosophy of this study includes an extensive writing survey, which incorporates scholastic exploration, industry reports, and well-qualified sentiments from promoting experts. The examination of this study centers around the main Marketing patterns in 2023, including the ascent of Metaverse, Artificial intelligence, Content advertising, intuitive substance, and the utilization of powerhouses in promoting. The discoveries of this study propose that organizations ought to zero in on formulating customized advertising procedures that influence arising advancements, for example, voice search and Artificial intelligence. Moreover, organizations ought to put resources into making an intelligent substance that draws in and teaches their interest group.

**Keywords:** *Metaverse, Artificial Intelligence, Content Marketing, Intelligent Promoting, Influencer Marketing*

### Introduction:

Marketing patterns continually develop, driven by innovative headways, moving buyers' ways of behaving and changing economic situations. (Nair, K et al., 2021) . As we enter 2023, organizations should know about the most recent Marketing patterns to remain cutthroat and successfully arrive at their interest groups. (Gupta et al., 2021). This presentation will talk about a portion of the significant Marketing patterns organizations ought to keep an eye out for in 2023.

#### **Metaverse:**

The metaverse is a term that depicts a virtual existence where clients can connect with computerized objects in a completely vivid climate. This idea has been around for quite a long time, however, it is turning into a reality with the ascent of virtual and expanded reality innovations. The metaverse can upset Marketing by giving better approaches to organizations to draw in customers. (Giang et al., 2023). For instance, organizations can make virtual retail facades in the metaverse, where clients can peruse and buy items completely vividly. Brands can likewise make virtual occasions, for example, item dispatches or design shows, that permit clients to encounter their items in a previously unheard-of manner.

#### **Content Marketing:**

Content Marketing has been a famous pattern for quite some time and keeps on being a basic component of any effective promoting methodology. Content Marketing includes making a significant substance that draws in and connects with clients. In 2023, organizations should zero in on making customized and custom-made content for their client's requirements. (Izogo et al., 2022). With the ascent of simulated intelligence and AI, organizations can make customized content well-defined for every client's advantages and inclinations. This personalization level can assist organizations in constructing more grounded associations with their clients and drive greater commitment and changes.

#### **Artificial Intelligence:**

Artificial reasoning (computer-based intelligence) changes the Marketing scene by giving organizations better approaches to investigating and deciphering client information. With computer-based intelligence, organizations can acquire bits of knowledge about clients ways of behaving and inclinations, permitting them to make more designated and customized promoting efforts. (Manjarres et al., 2021). For instance, computer-based intelligence-controlled chatbots can assist organizations with giving customized client service and help day in and day out, further

developing consumer loyalty and steadfastness. Simulated intelligence can likewise assist organizations with improving their Marketing efforts by breaking down client information to decide the best times to send messages or post via online entertainment.

***Intelligent Promoting:***

Intelligent promoting includes drawing in intuitive encounters that permit clients to connect with brands and items in previously unheard-of ways. Intelligent Marketing has been around for a very long time, yet with the ascent of innovations, for example, virtual and increased reality, it is turning out to be more open and common. (Gupta et al., 2021). For instance, organizations can make computer-generated reality encounters that permit clients to take a stab at garments or test-drive vehicles in a completely vivid climate. Intuitive promoting can assist organizations in fabricating more grounded associations with their clients and drive greater commitment and changes.

***Influencer Marketing:***

Powerhouse advertising includes cooperating with virtual entertainment forces to be reckoned to advance items or administrations. Force to be reckoned with Marketing has turned into a well-known pattern lately as online entertainment stages have filled in prevalence and impact. (Gupta et al., 2021). In 2023, organizations should zero in on making more credible and real associations with powerhouses. Clients are turning out to be progressively wise about powerhouse promoting, and they can rapidly recognize inauthentic associations that vibe constrained or deceitful.

***Literature Review:***

***Metaverse:***

The metaverse is a term begat by science fiction creator Neal Stephenson in his 1992 novel *Snow Crash*, which portrayed a completely vivid virtual reality where individuals could collaborate and computerized objects in a three-layered space. Today, the metaverse is turning into a reality, driven by virtual and expanded reality innovation advancements. The metaverse can upset marketing by giving better approaches to organizations to draw in clients. For instance, organizations can make virtual retail facades in the metaverse, where clients can peruse and buy items completely vividly. (Hennig et al., 2022) This could give another channel to organizations to arrive at shoppers progressively investing energy on the web. Furthermore, the metaverse could furnish

organizations with new chances to make drawing-in and intelligent client encounters. For instance, brands could make virtual occasions, for example, item dispatches or style shows, that permit clients to encounter their items in a previously unheard-of manner. This could assist organizations assemble more grounded associations with clients and increment brand loyalty. (Jha, K. 2022).

Notwithstanding, there are likewise difficulties related to the metaverse. For instance, making vivid encounters in the metaverse requires a huge interest in innovation and mastery. Also, organizations should explore the moral and protection worries of gathering information from virtual collaborations. (Pasquarelli, A. 2022). Generally, the metaverse can be a unique advantage for marketing, yet organizations should cautiously think about the expenses and advantages before putting resources into this arising innovation.

***Content Advertising:***

Content marketing is a promoting approach that includes making important and pertinent substance to draw in and connect with clients. The Substance Promoting Establishment states, "Content marketing is an essential promoting approach zeroed in on making and disseminating important, pertinent, and reliable substance to draw in and hold a characterized crowd — and, eventually, to drive productive client action." (Bowden et al., 2021). Lately, satisfied promoting has turned into a famous pattern, driven by the rising significance of computerized marketing and the ascent of virtual entertainment (Kulkarni, et al., 2023). With the expansion of content on the web, organizations should make content that sticks out and offers some incentive to their main interest group.

One arising pattern in satisfied advertising is the utilization of customized content. Customized content includes fitting substance to the singular necessities and inclinations of every client. With the ascent of simulated intelligence and AI, organizations can make tweaked content intended for every client's advantages and inclinations. This personalization level can assist organizations in constructing more grounded associations with their clients and drive greater commitment and transformations. (Murgia, M. 2015).

One more rising pattern in happy promotion is the utilization of intelligent substances. Intelligent substance includes drawing

in intuitive encounters that permit clients to communicate with brands and items in previously unheard-of ways. This could incorporate tests, surveys, or games that give clients a tomfoolery and connecting method for finding out about a brand or product.(Sunil et al., 2018).Overall, content marketing will keep on being a fundamental promoting pattern in 2023, and organizations that make significant, important, and customized content will be best suited to succeed.

***Artificial Consciousness:***

Artificial consciousness (simulated intelligence) changes the promoting scene by furnishing organizations with better approaches to dissecting and deciphering client information (Khatwani et al., 2023). With simulated intelligence, organizations can acquire bits of knowledge about clients' ways of behaving and inclinations, permitting them to make more designated and customized promoting efforts (Khatwani and Mishra, 2021). One arising pattern in Artificial intelligence is the utilization of chatbots. Chatbots are PC programs that can conversationally collaborate with clients. Chatbots can give customized client care and help all day, every day, further developing consumer loyalty and steadfastness. Also, chatbots can assist organizations with mechanizing routine errands, like responding to now and again get clarification on pressing issues and opening up HR to zero in on additional complicated assignments. (André et al., 2018). One more arising pattern in artificial intelligence is the utilization of prescient examination. Prescient examination includes AI calculations to investigate client information and anticipate future ways of behaving. With prescient investigation, organizations can distinguish clients probably going to agitate and find proactive ways to hold them. (Sunil, An et al., 2018) Furthermore, the prescient examination can assist organizations with streamlining their marketing.

***Influencer Marketing:***

Influencer Marketing is an advertising methodology that includes cooperating with persuasive people via virtual entertainment to advance a brand or item. Influencer Marketing has become progressively well known as of late as organizations search for better approaches to contact more youthful crowds who are progressively wary of conventional promoting. (Nair, K 2019). Influencer Marketing can be an exceptionally successful way for organizations to arrive at their main interest group. Organizations

can make genuine and significant promoting efforts that resonate with their interest group by cooperating with influencers with broad and drawn followings.

One arising pattern in force to be reckoned with in advertising is the utilization of miniature Influencers. Miniature influencers have more modest followings yet are profoundly drawn in with their crowd. By joining forces with miniature influencers, organizations can make more designated and specialty-promoting efforts custom-made to explicit audiences. (Alvarez et al., 2023). One more rising pattern in influencer advertising is the utilization of long-haul organizations. As opposed to working with influencers on an oddball premise, organizations are progressively hoping to fabricate long-haul associations with influencers who line up with their image values and ideal interest groups. (Kulkarni 2022) Long-haul coalitions can assist organizations in fabricating more grounded associations with their ideal interest group and drive greater commitment and conversions. (Levin, A. 2020). Generally, influencer marketing will keep on being a fundamental advertising pattern in 2023, and organizations that collaborate with influencers who line up with their image values and ideal interest groups will be best suited to succeed.

***Intelligent Advertising:***

Intelligent marketing is a promoting procedure that includes connecting with and intuitive client encounters. Intelligent advertising can take many structures, including tests, surveys, games, and increased reality encounters. The force and assortment of client cooperation during the administration conveyance process are prescient of positive word-of-mouth and references. (Maru et al., 1992). Three intuitive marketing interchange channels (verbal, online survey gathering, and site improvement) expanded the pace of procuring a client over time(Majid et al., 2021).

Intuitive advertising has become progressively famous as of late as organizations search for better approaches to draw in clients in an undeniably computerized world. With the expansion of virtual entertainment and cell phones, clients progressively look for drawing-in and intuitive encounters that offer some incentive and entertainment.(Kannan et al.,2022).

One arising pattern in intuitive promoting is expanded reality (AR). AR includes overlaying advanced content onto the actual world, making



vivid and intelligent client encounters. With AR, organizations can make virtual takes at encounters for items, permitting clients to perceive what products look like and feel before buying. (Majid, K. A. 2021). Moreover, AR can make intuitive encounters, for example, virtual voyages through stores or historical centers, that furnish clients with an exceptional drawing-in experience. (Gupta et al., 2021). One more rising pattern in intelligent marketing is the utilization of gamification. Gamification includes integrating game components into promoting efforts, like prizes, lists of competitors, and difficulties. Gamification can assist organizations with driving commitment and reliability by giving clients a tomfoolery and drawing in experience. (Maru,1992). By and large, intelligent marketing will keep on being a significant promoting pattern in 2023, and organizations that connect with intuitive client encounters will be best suited to succeed.

#### **Procedures for Embedding the Advertising Patterns:**

##### ***Metaverse:***

*Innovative work:* The metaverse is still in its beginning phases of advancement, yet advertisers can remain on the ball by exploring and staying aware of the most recent mechanical turns of events.

*Brand Presence:* A solid brand presence in the metaverse is fundamental. Advertisers ought to foster a predictable brand voice and picture that lines up with their image values.

*Client Experience:* Making a vivid connection with client experience is basic to progress in the metaverse. Advertisers ought to zero in on making encounters that offer some benefit and amusement to clients.

*Coordinated efforts and Associations:* Cooperation with different brands and powerhouses inside the metaverse can assist with expanding brand openness and contacting new crowds.

##### ***Content Promoting:***

*Grasping the Interest group:* To make convincing substance-promoting efforts, advertisers should profoundly figure out their main interest group. They ought to direct exhaustive examination and investigation to distinguish their interest group's problem areas, inclinations, and interests.

*Enhancement of Content:* Advertisers ought to make various substance designs, like web journals, info graphics, recordings, digital broadcasts, and virtual entertainment posts, to take special care of the inclinations of various crowd sections.

*Narrating:* Narrating is a fundamental component of content promotion. Advertisers ought to recount convincing stories that resonate with their crowd and line up with their image values.

*Consistency:* Consistency is basic to building brand mindfulness and steadfastness. Advertisers ought to make a reliable distributing plan and keep a steady brand voice and picture across every single substance configuration and channel.

##### ***Artificial Consciousness:***

*Personalization:* Artificial intelligence-controlled personalization can assist advertisers with conveying modified content and encounters that take special care of individual clients' extraordinary necessities and inclinations.

*Information Examination:* Artificial intelligence information investigation can assist advertisers with acquiring further bits of knowledge into client conduct and inclinations, empowering them to make more designated and compelling promoting efforts.

*Chatbots:* Artificial intelligence-controlled chatbots can assist organizations with mechanizing client care and backing, further developing the general client experience.

*Advancement:* simulated intelligence enhancement can assist advertisers with upgrading their promoting efforts continuously, making changes given execution information to further develop return for capital invested and transformation rates.

##### ***Intelligent Marketing:***

*Gamification:* Gamification can be a successful method for driving commitment and dedication. Advertisers can utilize game components like prizes, lists of competitors, and difficulties to make fun and connect with client encounters.

*Intelligent Substance:* Intuitive substance, for example, tests, surveys, and studies can assist with expanding commitment and give important bits of knowledge into client inclinations and conduct.

*Increased Reality:* Expanded reality can make vivid and intelligent client encounters like virtual items take a stab at encounters. (Wang, C. L. 2021)

*Personalization:* Intuitive Marketing can be customized to individual clients' novel necessities and inclinations, making a seriously captivating and pertinent experience.

##### ***Influencer Marketing:***

*Tracking down the Right Influencers:* The progress of a force to be reckoned with marketing effort relies upon finding the right Influencers who line up with your image esteem and have a drawn-in and important following. Advertisers ought to lead

a careful exploration to recognize expected forces to be reckoned with and assess their compass and commitment metrics. (Mishra, 2012)

*Creating Valid Organizations:* Influencer marketing works best when the force to be reckoned with's underwriting feels legitimate and veritable. Advertisers ought to fabricate solid associations with Influencers and foster organizations that line up with the two players' qualities. (Mishra, 2015)

*Defining Clear Objectives and Assumptions:* Advertisers ought to lay out clear objectives and assumptions for the Influencer Marketing effort, including the kind of happiness, posting recurrence, and execution measurements. Clear correspondence is fundamental to guarantee the two players are in total agreement and pursuing a common goal (Bedarkar et al., 2023).

*Estimating Results:* Estimating the outcome of an Influencer advertising effort is critical to deciding the return for capital invested and recognizing regions for development. Advertisers ought to follow pertinent measurements, for example, commitment, navigation, and change rates to assess the mission's effectiveness. (Mishra, 2022).

*Consistency with Guidelines:* Influencer marketing is dependent upon different guidelines and rules that oversee supports and exposures. Advertisers ought to guarantee their missions consent to important regulations and approaches to stay away from legitimate and reputational gambles.

#### **Conclusion:**

Marketing patterns are continually developing, driven by mechanical progressions and changing customer ways of behaving. In 2023, organizations should zero in on making customized, intuitive, and drawing-in advertising encounters that reverberate with their ideal interest group. Organizations can make creative Marketing efforts that drive commitment and transformations by utilizing Artificial intelligence, computer-generated reality, and expanded reality advances. Also, organizations should zero in on building veritable and valid organizations with Influencers as clients become progressively wise about force to be reckoned with Marketing. In general, organizations that keep up-to-date with the most recent Marketing patterns will be best suited to prevail in the cutthroat and consistently changing marketing scene (Khatwani et al., 2019).

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## **Evaluating the Impact of Mergers on Financial Performance: A Comprehensive Camel Analysis of Select Public Sector Banks In India (2017-2023)**

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### **Abstract:**

This study delves into how mergers and acquisitions in the banking industry could enhance economic development by making effective use of financial resources and also on Indian public sector banks, particularly those that merged with other significant public sector banks in 2020. Prominent instances comprise Punjab National Bank's acquisition of Oriental Bank of Commerce and United Bank of India, culminating in the establishment of the nation's second-largest lender. While Union Bank of India merged with Andhra Bank and Corporation Bank. It is expected that the study's conclusions would provide light on how effectively mergers support public sector banks' ability to act as accelerators for economic growth. The CAMEL Approach is being used in research to analyze and compare the financial performance of these banks over a seven-year period from 2017 to 2023, and various types of ratios have been constructed to evaluate the performance of CAMEL in several areas, including capital adequacy, asset quality, managerial efficiency, earning quality, and liquidity and a paired t-test was used to determine whether there was a significant difference in financial variables before and after the merger.

**Key Words:** Banking Sector, Financial Ratios, Paired t-test

### **Introduction:**

The Indian banking industry is an essential part of the country's economy, acting as a driving force behind stability and development. India has an abundance of financial institutions operating within its boundaries, which means that the country's banking industry is characterized by intense rivalry and quick change. The industry's performance has steadily improved over time, resulting in yearly changes to bank rankings and places. This research focuses on two major Indian public sector banks: Punjab National Bank and Union Bank of India. The study's goal is to evaluate the impact of mergers on the performance of these banks by comparing financial statistics before and after the merger.

### **Literature Review:**

2.1.1 **Iheanyi and Sotonye (2017)** assessed the CAMEL rating to assess how well Nigerian banks

have performed. Ordinary least squares were employed for the analysis, which involved data collected over a 19-year period. They concluded that management efficiency, earnings, and liquidity have no appreciable influence on bank profitability. The banks is adversely affected by asset quality.

2.1.2 **Kandel (2019)** examined the CAMEL framework's performance analysis of commercial banks. The data analysis shows that appropriate capital and high-quality earnings are the main factors affecting ROA and ROE. Asset quality and liquidity also have a moderating effect on bank performance. The results show that management efficiency has little impact on ROA and ROE.

### **Conceptual Review:**

A few ratios of CAMEL model which is used in the research are mentioned below.

<b>Camel</b>	<b>Ratios</b>	<b>Formulas</b>
Capital Adequacy Ratio	CAR Total Advances to Total Assets Ratio	$\frac{\text{Tier 1} + \text{Tier 2}}{\text{Risk weighted Assets}}$ $\frac{\text{Total Advances}}{\text{Total Assets}}$
Assets Quality	Net NPA to Net Advances Ratio Total Investment to Total Assets Ratio	$\frac{\text{Net NPA}}{\text{Net Advances}}$ $\frac{\text{Total Investment}}{\text{Total Assets}}$
Management Efficiency	Total Advances to Total Deposits Ratio Assets Turnover Ratio	$\frac{\text{Total Advances}}{\text{Total Deposits}}$ $\frac{\text{Total Income}}{\text{Total Assets}}$
Earnings Quality	Net Profit Margin Return on Assets	$\frac{\text{Net Profit}}{\text{Total Income}}$ $\frac{\text{Net profit After Tax}}{\text{Total Assets}}$
Liquidity	Total Investment to Total Deposits Ratio Interest Expended to Interest earned Ratio	$\frac{\text{Total Investment}}{\text{Total Deposits}}$ $\frac{\text{Interest Expenditure}}{\text{Interest Income}}$

### **Objectives:**

1. To Analyze the Financial Performance Using the CAMEL Approach.
2. To Examine Changes in Financial Ratios Before and After Mergers.

### **Research Methodology:**

This research is descriptive and analytical in nature. The study employed secondary data that

was obtained from the banks' annual reports. The research was conducted by employing the CAMEL Model using the Paired Sample t-test.

**Samples:**

Sr.No	Acquirer Bank	Acquired Bank	Year of Merger
1.	Punjab National Bank	Oriental Bank of Commerce and United Bank of India	2020
2.	Union Bank of India	Corporation Bank and Andhra Bank	2020

**Analysis and Interpretation:  
Punjab National Bank**

**Table 5.1.1 Financial Ratios of PNB Bank**

Ratios	Pre-Merger Years			Year of Merger	Post-Merger Years		
	2017	2018	2019	2020	2021	2022	2023
Capital Adequacy Ratio	11.66	9.20	9.73	14.14	14.32	14.49	15.50
Net NPS To Net Advances Ratio	7.81	11.24	6.56	5.78	5.73	4.80	2.72
Total Advances To Total Assets Ratio	57.85	56.32	58.58	56.00	53.08	54.78	56.06
Total Investment To Total Assets Ratio	26.11	26.43	26.57	29.80	31.59	29.01	27.91
Total Advances To Total Deposits Ratio	67.37	67.66	67.81	67.13	60.99	63.57	64.90
Assets Turnover Ratio	7.80	7.39	7.54	7.55	7.42	6.59	6.63
Net Profit Margin	1.87	-25.82	-19.22	0.66	2.62	4.82	3.53
Total Investment To Total Deposit Ratio	30.41	31.75	30.75	35.73	36.30	33.66	32.31
Return on Assets	0.12	1.61	1.27	2.02	0.32	0.35	0.34
Interest Expended to Interest Income ratio	68.08	68.81	66.45	67.36	62.05	61.41	59.66

**Source:** Compiled From Annual Reports of PNB (2017-2023)

**Table 5.1.2 Analysis of Financial Ratios of PNB Pre and Post Merger**

Ratios		Mean	S.D	t-value	p-value
Capital Adequacy Ratio	Pre	10.1967	1.2946	-4.731	0.041
	Post	14.7700	0.6378		
Net NPS To Net Advances Ratio	Pre	8.5367	2.4231	3.253	0.083
	Post	4.4167	1.5411		
Total Advances To Total Assets Ratio	Pre	57.5833	1.1533	3.078	0.091
	Post	54.6400	1.4949		
Total Investment To Total Assets Ratio	Pre	26.3700	0.2358	-2.554	0.125
	Post	29.5033	1.8889		
Total Advances To Total Deposits Ratio	Pre	67.6133	0.2236	4.378	0.048
	Post	63.1533	1.9880		
Assets Turnover Ratio	Pre	7.5767	0.2074	4.314	0.050
	Post	6.8800	0.4680		
Net Profit Margin	Pre	-14.3900	14.4630	-2.018	0.181
	Post	3.6567	1.1054		
Total Investment To Total Deposit Ratio	Pre	30.9700	0.6965	-2.247	0.154
	Post	34.0900	2.0294		
Return on Assets	Pre	1.0000	0.7808	1.501	0.272
	Post	0.3367	0.0152		
Interest Expended to Interest Income ratio	Pre	67.7800	1.2082	17.008	0.003
	Post	61.0400	1.2372		

**Note:** Significant at 5 percent

**Interpretation:**

As per the above table 5.1.2 the capital adequacy ratio, assets turnover ratio, total advances to total deposits ratio, and interest expended to interest income ratio, the null hypothesis is rejected

indicating that p-value is lesser than the significance level. There is no significance difference in the other ratios, indicating that p-value is greater than the significance level therefore the researcher is failed to reject the null hypotheses.

**Union Bank of India:**

**Table 5.2.1 Financial Ratios of Union Bank of India**

Ratios	Pre-Merger Years			Year of Merger	Post-Merger Years		
	2017	2018	2019	2020	2021	2022	2023
Capital Adequacy Ratio	11.79	11.50	11.78	12.81	12.56	14.52	16.03
Net NPS To Net Advances Ratio	6.57	8.42	6.85	5.49	4.62	3.68	1.70
Total Advances To Total Assets Ratio	63.19	59.16	59.92	57.18	54.81	55.56	59.32
Total Investment To Total Assets Ratio	24.89	25.55	25.75	27.76	31.32	29.47	26.67

Total Advances To Total Deposits Ratio	76.33	70.82	71.56	70.21	64.09	64.13	68.21
Assets Turnover Ratio	8.39	7.82	7.89	7.78	7.68	6.84	7.53
Net Profit Margin	17.26	-15.84	-8.54	-8.11	4.08	7.63	10.38
Total Investment To Total Deposit Ratio	30.07	30.59	30.75	34.09	36.62	34.01	30.68
Return on Assets	0.12	-1.06	-0.58	-0.54	0.26	0.43	0.65
Interest Expended to Interest Income ratio	72.45	71.22	69.64	68.93	63.64	58.88	59.18

**Source:** Compiled From Annual Reports of Union Bank of India (2017-2023)

**Table 5.2.2 Analysis of Financial Ratios of Union Bank of India Pre and Post Merger**

Ratios		Mean	S.D	t-value	p-value
Capital Adequacy Ratio	Pre	11.6900	0.1646	-2.630	0.119
	Post	14.3700	1.7398		
Net NPS To Net Advances Ratio	Pre	7.2800	0.9971	3.926	0.059
	Post	3.3333	1.4905		
Total Advances To Total Assets Ratio	Pre	60.7567	2.1413	1.851	0.205
	Post	56.5633	2.4166		
Total Investment To Total Assets Ratio	Pre	25.3967	0.4500	-2.359	0.142
	Post	29.1533	2.3411		
Total Advances To Total Deposits Ratio	Pre	72.9033	2.9905	2.865	0.103
	Post	65.4767	2.3672		
Assets Turnover Ratio	Pre	8.0333	0.3108	3.807	0.063
	Post	7.3500	0.4480		
Net Profit Margin	Pre	-2.3733	17.3903	-0.844	0.487
	Post	7.3633	3.1584		
Total Investment To Total Deposit Ratio	Pre	30.4700	0.3555	-1.726	0.226
	Post	33.7700	2.9772		
Return on Assets	Pre	-0.5067	0.5934	-2.305	0.148
	Post	0.4467	0.1955		
Interest Expended to Interest Income ratio	Pre	71.1033	1.4086	10.333	0.009
	Post	60.5667	2.6658		

**Note:** Significant at 5 percent

**Interpretation:**

There is a substantial difference between the pre- and post-merger periods for the Interest Expended to Interest Income Ratio, which is the only ratio for which the null hypothesis is rejected. The researcher is failed to reject the hypothesis for the other ratios, indicating that there are no notable variations. These findings reveal light on the particular financial indicator that changed significantly after the merger while the others remained substantially identical.

**Conclusion:**

The study yields a thorough examination of the impact of mergers on the financial performance of Punjab National Bank and Union Bank of India. The analysis of financial ratios revealed mixed results for the two banks, findings point to beneficial changes in risk management, asset quality, and profitability following the merger.

In accordance with the paper, whereas some financial indicators saw noteworthy changes after the mergers, others for both banks stayed predominantly same. However, the constraints of sustaining lending efficiency and optimizing asset usage necessitate on-going strategic analysis.

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## Impact of Social Media on Human Resource Management: A Comprehensive Review

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### Abstract:

HRM involves a range of activities related to the acquisition, development, motivation, and retention of employees, as well as ensuring compliance with labor laws and regulations. This research paper aims to provide a comprehensive review of the impact of social media on human resource management (HRM). The widespread adoption of social media platforms has revolutionized communication and interaction patterns, and this transformation has extended to the field of HRM. The paper explores the multifaceted influence of social media on various HRM functions, including recruitment and selection, employee engagement, employer branding, training and development, and employee relations. By examining existing literature and empirical studies, this paper presents an overview of the advantages, challenges, and best practices associated with leveraging social media for effective HRM. The findings suggest that while social media offers numerous benefits, organizations need to carefully manage its use to mitigate potential risks and ensure positive outcomes for both employees and employers.

**Keywords:** Social Media, HRM, Impact of SM on HRM, Best Practices of HRM

### Introduction

The emergence and widespread adoption of social media platforms has brought about significant changes in how individuals communicate, connect, and share information. Alongside its influence on personal interactions, social media has also permeated various professional domains, including the field of human resource management. Impact of social media on HRM practices, shedding light on the opportunities and challenges it presents for HR professionals and organizations. In recent years, social media has experienced an explosive growth trajectory, reshaping the way people interact and engage with information. Platforms like Facebook, LinkedIn, Twitter, and Instagram have become integral parts of daily life, enabling individuals to connect, collaborate, and share content on a global scale. This proliferation of social media has not only transformed personal communication but has also revolutionized the business landscape, including HRM.

### Review of Literature

**Kluemper D et al (2016)** stressed on applications of social media in the human resources of any organization. The study resulted in a medium-high impact on branding, organizational image, employee productivity, employee engagement and teamwork, employee training, knowledge management, and leadership. another study by **Asaad Ali Karam & A F Kitana (2018)** encompassed that the effect of social media on HRM scope activities in the UAE. The study showed that social media are very useful in conducting operating activities of the firm. The relationship between social media and HRM is crucial in every firm that fosters employee engagement and commitment.

**Agarwal, N., & Dass, M. (2016).** the authors focused on the discussion of theory, practice, and

current challenges in social media and HRM. The study explored the use of social media in employee selection and recruitment processes, discussing theoretical perspectives, practical implications, and challenges associated with its implementation. **Bondarouk, T., Parry, E., & Furtmueller, E. (2017).** the study provided an overview of the use of social media for human resource development, discussing its potential benefits and challenges. **Briscoe, F., & Feeney, M. K. (2017).** The author provided a conceptual analysis of the impact of social media on human resource development. It examined the potential implications for HRD practices such as learning and development, talent management, and employee engagement. **Crossler, R. E., et al. (2013).** The study investigated the impact of social media on information security in organizations. It highlights the challenges and risks associated with social media usage in HRM, emphasizing the need for effective security measures and policies.

**Koch, A. J., & McGregor, J. (2018).** Examined the use of social media in the workplace and its impact on HRM practices in emerging economies. The study explores the potential benefits, challenges, and cultural implications of social media integration. **Lee, I., & Lee, K. (2019).** Examined the antecedents and consequences of social media usage in HRM. It identifies key factors influencing social media adoption, highlights its impacts on recruitment, employer branding, employee engagement, and employee voice, and proposes a research agenda for future studies. **Sahoo, S., & Saha, P. (2017).** The paper provides an overview of social media's role in HRM. It discusses the potential benefits and challenges associated with social media integration in areas such as recruitment, employee engagement, learning and development,



and employee relations. **Parry, E., & Tyson, S. (2018).** This study explores the advantages of using social media platforms in the recruitment process, including increased access to a larger talent pool, improved employer branding, and enhanced candidate engagement. **Bal, P. M., & Stamm, A. M. (2019).** This chapter explores the relationship between social media and employee voice, discussing how social media platforms can facilitate employee expression, participation, and collaboration in organizations.

**Need for the study:**

The present study is an conceptual discussion regarding the impact of social media on the practices of human resource management practices. Thus, current research topic is more reliable and relevance to carry the research on this topic. Therefore, aims to trace the determinant factors influence the impact of social media on HR practices in select areas.

**Objectives of the Study:**

1. To study theoretical background and explore the impact of social media on HRM practices .
2. To highlight the opportunities, benefits, and challenges associated with integrating social media into HRM strategies and operations.

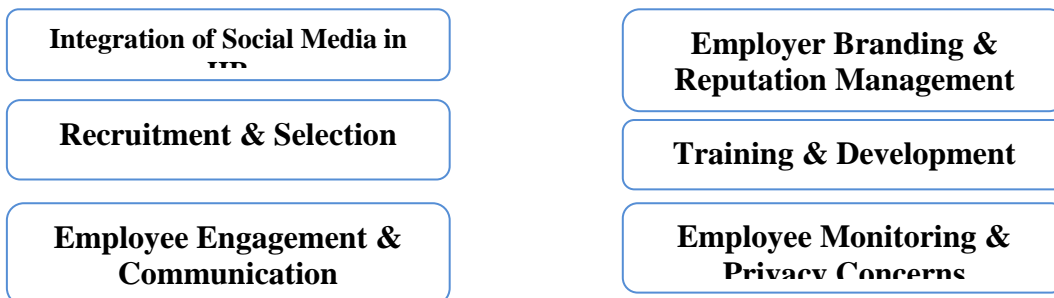
**Research Methodology:**

The present study is done based on the qualitative research approach to understand the concepts and conventions of social media influence on HR practices. To provide a comprehensive review of the impact of social media on HRM, this research paper utilized both conceptual and pragmatic way understanding research methods. The methodology involves an existing literature review to establish a theoretical foundation, supplemented by empirical studies to illustrate practical implications. The study used secondary sources of data which has been collected from various journals, research papers, articles, and other relevant sources.

**Social Media and HRM: An Overview**

**Social Media:** Social media refers to online platforms and tools that enable users to create, share, and exchange content, as well as participate in virtual communities. It encompasses a wide range of platforms, including social networking sites, microblogging platforms, professional networking platforms, multimedia sharing platforms, and more. These platforms have evolved significantly over time, becoming integral parts of people's personal and professional lives.

**Overview of HRM Practices**



Human resource management (HRM) encompasses the policies, practices, and strategies involved in managing an organization's workforce. It covers a broad range of areas, including recruitment and selection, employee engagement, training and development, performance management, compensation and benefits, and employee relations. HR professionals play a crucial role in attracting, developing, and retaining talent to support organizational goals and objectives.

**Integration of Social Media in HRM:** Social media platforms have provided HR professionals with new avenues for sourcing talent, engaging employees, promoting employer brands, delivering training, and monitoring employee activities. By leveraging social media effectively, HR departments can enhance their efficiency, reach, and effectiveness in managing human capital.

**Recruitment and Selection:** Social media has revolutionized the recruitment and selection process.

HR professionals can utilize social media platforms to attract and engage potential candidates, showcase the company culture and values, and effectively communicate job openings. Social media platforms also provide opportunities for targeted candidate sourcing and screening, utilizing features such as professional networking sites, online job boards, and applicant tracking systems integrated with social media.

**Employee Engagement and Communication:** Social media platforms offer HR departments the ability to enhance employee engagement and communication within organizations. It allows for improved internal communication channels, fostering collaboration and knowledge sharing among employees. Additionally, social media can be utilized to solicit employee feedback, recognize achievements, and facilitate employee advocacy, thereby strengthening employee engagement and

creating a sense of belonging within the organization.

**Employer Branding and Reputation Management:** Social media plays a crucial role in building and managing an organization's employer brand and reputation. HR professionals can leverage social media platforms to showcase the company's values, culture, and employee experiences, thus attracting top talent. Moreover, social media provides an avenue for organizations to respond to employee feedback and complaints promptly, thereby addressing concerns and maintaining a positive employer brand image.

**Training and Development:** Social media platforms offer innovative opportunities for training and development initiatives. HR professionals can utilize social learning tools, such as discussion forums, webinars, and online courses, to foster continuous learning and knowledge sharing among employees.

**Employee Monitoring and Privacy Concerns:** While social media offers numerous benefits, it also raises concerns regarding employee monitoring and privacy. Organizations must navigate legal and ethical considerations when monitoring employee activities on social media platforms. Striking a balance between monitoring for security purposes and respecting employee privacy is crucial to ensuring a positive work environment and maintaining trust.

**Impact of Social Media on HRM Functions**

**Advantage of social media in HRM**



**Expanded Talent Pool:** Social media platforms provide HR professionals with access to a vast talent pool. They can actively search for and engage with potential candidates beyond traditional recruitment channels. This expands the reach and diversity of the candidate pool, enabling organizations to attract talent from different backgrounds and locations.

The impact of social media on various human resource functions is substantial, bringing both opportunities and challenges. Let's explore the effects of social media on key HR functions:

**Talent Management and Succession Planning:** Social media platforms provide HR professionals with additional tools for talent management and succession planning. They can identify high-potential employees, track their achievements and professional growth, and provide targeted development opportunities. HR departments can also utilize social media for succession planning by identifying internal talent and creating talent pipelines for key positions.

**Employee Advocacy and Brand Ambassadors:** Social media empowers employees to become brand advocates and ambassadors. By encouraging employees to share positive experiences and engage with the organization's content on social media, HR departments can amplify the reach and impact of their employer brand. Employee advocacy programs can enhance the company's reputation, attract top talent, and strengthen the overall brand image.

**Advantages and Challenges of Social Media in HRM**

**Advantages**

The integration of social media in Human Resource Management (HRM) brings several advantages and benefits to the HR function and overall organizational success. Here are some key advantages of social media on HRM:

**Enhanced Employer Branding:** Social media offers a powerful platform for organizations to showcase their employer brand and company culture. HR professionals can use social media to highlight their organization's unique values, work environment, employee testimonials, and success stories. This helps attract top talent who resonate

with the organization's values and increases the employer's visibility and reputation.

**Improved Candidate Screening:** Social media allows HR professionals to gain insights into candidates beyond their formal resumes and application materials. By reviewing candidates' social media profiles, HR can assess their online presence, communication skills, and cultural fit. This helps in making more informed decisions during the candidate screening process.

**Engaging Recruitment Process:** Social media enables HR professionals to create engaging and interactive recruitment processes. They can leverage social media platforms to communicate job openings, share videos or virtual tours of the workplace, and interact with candidates through comments, messages, or live chats. This enhances candidate experience, increases engagement, and promotes a positive employer brand.

**Enhanced Employee Engagement:** Social media can be a powerful tool for fostering employee engagement within the organization. HR can create internal social media platforms or groups where employees can share ideas, collaborate on projects, recognize achievements, and provide feedback. This promotes a sense of community, strengthens relationships, and boosts overall employee engagement levels.

**Improved Communication and Collaboration:** Social media facilitates seamless communication and collaboration within the organization. HR can leverage social media platforms for internal communication, disseminating important announcements, sharing company news, and fostering open dialogue among employees across different levels and locations. This leads to improved information flow, transparency, and teamwork.

**Learning and Development Opportunities:** Social media offers new avenues for learning and development initiatives. HR can utilize social learning tools, such as discussion forums, webinars, and online courses, to facilitate knowledge sharing, collaboration, and continuous learning among employees. Additionally, social media enables employees to connect with industry experts and thought leaders, expanding their professional networks and access to valuable resources.

**Real-time Feedback and Employee Sentiment Analysis:** Social media platforms provide HR with real-time feedback and insights into employee sentiment. HR professionals can monitor employee discussions, comments, and feedback on social media to gauge employee satisfaction, identify potential issues or concerns, and take proactive measures to address them.

### **Challenges**

While social media integration in Human Resource Management (HRM) offers several

advantages, it also presents various challenges that organizations and HR professionals need to address. Here are some key challenges of social media in HRM:

**Privacy and Data Security:** Social media platforms involve the collection and sharing of personal information, which raises concerns about privacy and data security. HR professionals must navigate legal and ethical considerations when accessing and using personal information available on social media. They need to ensure compliance with data protection regulations and establish clear guidelines on the collection, storage, and use of employee data.

**Information Accuracy and Reliability:** Information shared on social media may not always be accurate or reliable. HR professionals need to exercise caution and verify the authenticity of information obtained through social media channels. Relying solely on social media profiles or online sources for candidate screening or employee evaluation may lead to biased or misleading judgments.

**Potential for Discrimination and Bias:** Social media platforms can inadvertently expose HR professionals to information that may lead to unconscious biases and discrimination. Viewing personal information, such as age, race, religion, or political affiliations, on social media profiles may influence HR decisions in an unfair or discriminatory manner. HR professionals must ensure that their decision-making process is based on job-related qualifications and avoid using personal information obtained through social media as a determining factor.

**Information Overload and Distractions:** The vast amount of information available on social media can lead to information overload and distractions. HR professionals may find it challenging to filter relevant information and prioritize their activities. Balancing social media usage for recruitment, employee engagement, and communication purposes while maintaining productivity can be a challenge.

**Maintaining Professional Boundaries:** Interacting with employees on social media can blur the line between personal and professional relationships. HR professionals need to establish and maintain clear boundaries to avoid potential conflicts of interest, favoritism, or breaches of confidentiality. Balancing the need for open communication on social media with maintaining professional decorum can be a delicate task.

**Legal and Ethical Issues:** Social media usage in HRM must comply with legal and ethical guidelines. Organizations need to establish policies and procedures that address issues such as online harassment, defamation, intellectual property rights, and employee privacy. HR professionals must stay

updated on legal requirements and ensure that social media practices align with relevant regulations.

**Reputation Management:** Social media platforms can amplify both positive and negative information about an organization. Negative comments or reviews on social media can quickly gain traction and impact the organization's reputation. HR professionals need to be proactive in monitoring and managing the organization's online presence, promptly addressing any negative feedback or complaints.

**Time and Resource Management:** Social media management can be time-consuming and resource-intensive. HR professionals need to allocate sufficient time and resources to develop and implement effective social media strategies. This includes creating engaging content, monitoring social media platforms, responding to inquiries or comments, and staying up to date with social media trends and best practices.

### **Best Practices for Leveraging Social Media in HRM**

**Develop Social Media Strategy:** Define clear goals and objectives for using social media in HRM. Determine the target audience, desired outcomes, and key performance indicators (KPIs) to measure success. Align the social media strategy with the overall HR and organizational goals.

**Establish Guidelines and Policies:** Create comprehensive guidelines and policies that outline the appropriate and responsible use of social media by employees and HR professionals. Address issues such as privacy, confidentiality, online behavior, and adherence to legal and ethical standards.

**Build Strong Employer Brand:** Use social media platforms to showcase the organization's culture, values, and employee experiences. Develop engaging content that highlights the unique aspects of the company and its employee value proposition. Encourage employees to share positive experiences and act as brand ambassadors.

**Targeted Recruitment and Candidate Engagement:** Leverage social media for targeted recruitment efforts. Utilize platforms like LinkedIn, Facebook, and Twitter to promote job openings, reach a wider talent pool, and engage with potential candidates. Implement strategies to actively communicate and respond to candidate inquiries through social media channels.

**Enhance Employee Engagement:** Create internal social media platforms or groups for employees to foster engagement and collaboration. Encourage employees to share their ideas, insights, and success stories. Use social media as a channel for two-way communication, employee recognition, and feedback mechanisms.

**Provide Learning and Development Opportunities:** Utilize social media as a platform for continuous learning and development. Share

industry articles, educational resources, and relevant content to support employees' professional growth. Encourage employees to participate in online discussions, webinars, and virtual training programs.

**Monitor and Respond to Employee Feedback:** Regularly monitor employee discussions and feedback on social media platforms. Actively listen and respond to employee concerns, suggestions, and inquiries. Use social media as a channel to address employee questions and provide timely and transparent communication.

**Measure and Analyze Results:** Use social media analytics tools to measure the effectiveness of HRM activities on social media. Track metrics such as reach, engagement, candidate quality, employee satisfaction, and employer brand perception. Analyze the data to identify trends, refine strategies, and make data-driven decisions.

**Stay Updated and Adapt:** Social media platforms and trends evolve rapidly. Stay updated on the latest social media features, algorithms, and best practices. Adapt your social media strategy and tactics to align with changing technology and user behavior to ensure maximum impact.

**Ensure Legal and Ethical Compliance:** Stay informed about relevant laws, regulations, and guidelines related to social media usage in HRM. Ensure compliance with data privacy laws, intellectual property rights, non-discrimination regulations, and other legal and ethical considerations.

**Promote Employee Advocacy:** Encourage employees to become brand advocates and share positive experiences on social media. Develop employee advocacy programs that provide guidelines and incentives for employees to share company-related content on their social media profiles. This can amplify the reach of the organization's employer brand and attract talent through employee referrals.

**Continuous Learning and Development:** Utilize social media for learning and development initiatives. Curate and share relevant industry news, articles, and thought leadership content. Encourage employees to participate in online discussions and engage with subject matter experts. Facilitate knowledge sharing and peer learning through internal social media platforms or online communities.

**Monitor and Respond to Feedback:** Actively monitor social media channels for feedback, comments, and reviews related to the organization and the HR function. Respond to feedback promptly, addressing both positive and negative comments professionally and constructively. Use feedback to improve HR processes, address concerns, and enhance the employee experience.

**Stay Updated with Social Media Trends:** Stay abreast of the latest trends and best practices in

social media usage. Regularly evaluate and adjust social media strategies based on changing platforms, algorithms, and user preferences. Experiment with new features, tools, and content formats to keep the organization's social media presence fresh and engaging.

**Measure and Analyze Results:** Establish key performance indicators (KPIs) and metrics to measure the effectiveness of social media initiatives in HRM. Track metrics such as candidate engagement, employee satisfaction, recruitment outcomes, and employer brand reach. Use analytics tools to gain insights and make data-driven decisions to optimize social media strategies.

#### **Findings:**

1. Social media platforms have become increasingly popular for recruitment purposes, allowing organizations to reach a wider pool of candidates and access passive job seekers.
2. Social media offers a powerful tool for organizations to showcase their culture, values, and employee experiences, contributing to employer branding efforts.
3. Social media platforms provide opportunities for continuous learning and development, allowing employees to access industry news, educational resources, and professional networks.
4. Social media platforms can enable employees to voice their opinions, provide feedback, and actively participate in organizational discussions.
5. Social media integration in performance management can provide opportunities for real-time feedback, public recognition, and peer-to-peer appreciation.
6. Research emphasizes the importance of addressing legal and ethical considerations in social media usage for HRM.

#### **Conclusion**

By thoroughly examining the impact of social media on HRM functions, this research paper provides insights for HR professionals, managers, and organizations aiming to effectively leverage social media in their HR strategies. It highlights the potential benefits, challenges, and best practices to optimize the integration of social media tools and platforms in HRM processes, fostering a positive work environment and strengthening employee-employer relationships in the digital age. The findings will shed light on the opportunities and challenges that HR professionals and organizations encounter in leveraging social media effectively. By understanding the impact of social media on HRM, organizations can develop strategies to harness its potential and overcome associated risks, ultimately contributing to improved HRM practices in the digital era.

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## **Analysis of Disparities in the MSME Sector in India: A Study**

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**Abstract:**

The Micro, Small, and Medium Enterprises (MSME) sector in India is pivotal to the nation's economic landscape, contributing significantly to entrepreneurship, employment generation, and GDP growth. However, disparities within the sector, including regional, gender, and social inequalities, hinder its full potential. This paper delves into the disparities present in the MSME sector and offers recommendations to address these disparities for inclusive growth. The study uses secondary sources of data to scrutinize the government's utilization of the sector's potential for achieving inclusive growth, assess the geographical distribution of MSMEs, and delve into the socio-economic status of the sector, focusing on identifying and analyzing existing disparities. The data highlighted a notable disparity in the distribution of MSME entities between rural and urban sectors, with Micro entities dominating both regions, comprising 51% in rural areas and 49% in urban areas. Additionally, the findings reveal a pronounced gender gap in enterprise ownership, with males representing 79.63% across all categories, emphasizing the need for addressing skewed distributions favoring male entrepreneurs within the MSME sector. Recommendations include targeted policies for rural development, regional balance, gender equality, and social inclusion, emphasizing the need for collaborative efforts between the central and state governments to ensure optimal utilization and contribution of MSMEs across all sectors of society.

**Keywords:** MSME, Disparity, and Inclusive India.

**Introduction**

The Micro, Small, and Medium Enterprises (MSME) sector in India is a vital component of the country's economic landscape, playing a pivotal role in fostering entrepreneurship, generating employment, and contributing significantly to economic growth. As the backbone of the Indian economy, the MSME sector comprises a diverse range of enterprises that span various industries, from manufacturing to services. This sector not only caters to local demands but also serves as a crucial contributor to exports, fostering economic resilience and sustainability.

This MSME sector serves as a supportive entity, fostering vertical integration, especially in rural remote areas. This sector significantly

contributes to the nation's economic progress beyond agriculture, offering extensive opportunities for personal and wage employment, driving economic growth, promoting inclusive development, ensuring regional equity, gender equality, and environmental sustainability, and serving as a safeguard against deflation.

A revision in the Micro Small and Medium Enterprises (MSME) definition was announced in the AatmNirbhar Bharat Abhiyaan Scheme on May 13, 2020. The Ministry of Micro, Small, and Medium Enterprises, vide a gazette notification dated June 1, 2020, has announced the upward definition and criteria of the MSME. The new classification for MSME came into effect from July 1, 2020.

**Table 1: Definition of MSMEs in India as per Turnover and Investment**

Classification	Manufacturing Enterprises and Services Enterprises	
	Investment In Plant and Machinery or Equipment	Turnover
<b>Micro Enterprises</b>	Not more than Rs. 1 Crore &	Not more than Rs. 5 Crore
<b>Small Enterprises</b>	Not more than Rs.10 crore &	Not more than Rs. 50 Crore
<b>Medium Enterprises</b>	Not more than Rs.50 Crore &	Not more than Rs. 250 Crore

**Source:** As per the Ministry of MSMEs.

The current paper attempts to explore the disparity present in the MSME sector in India. The MSME sector, known for its labor-intensive industries and minimal capital investments, holds significant potential for employment generation in underdeveloped areas.

However, addressing the sector's existing challenges with timely and cost-effective solutions is essential to unlock its full potential as the genuine engine of growth for the Indian economy.

**Need for the Study**

The need for an in-depth analysis of the MSME sector in India arises from its critical role in the country's economic development. MSMEs contribute significantly to employment, especially in rural and semi-urban areas, acting as engines of inclusive growth. But is the government exploiting the potential of the sector to achieve inclusive growth? Is the MSME sector evenly spread in the country? What is the socio-economic status of the

sector in the country? This research paper will attempt to address these questions by examining the disparities within the MSME sector. The focus will be on identifying and analyzing the various inequalities present in this sector.

### **Objectives of the Study**

1. To analyze the disparities in the MSME sector in India.
2. To give suggestions for eradicating disparities in the MSME sector.

### **Research Methodology**

This study, characterized by its descriptive and analytical nature, relies on secondary sources of data for research. The pertinent data has been sourced from Annual Reports and other published documents of the Ministry of MSME and the Directorate of Industries. In addition to these official documents, the study incorporates information from published research papers, journals, and research articles. The analysis employs statistical tools, including averages, percentages, and ratios, to meticulously examine the collected data. Furthermore, visual aids such as graphs and charts have been employed for analytical purposes, enhancing the depth and clarity of the study's findings.

### **Review of Literature**

Dr. Sultan Singh Jaswal (2014) Micro, Small, and Medium Enterprises (MSMEs) in India serve as vital contributors to economic and social development, fostering entrepreneurship, and innovation, and playing a key role in manufacturing, employment generation, and exports. With their diverse products, widespread dispersion, and employment potential at low capital cost, the MSME sector remains a crucial pillar of India's economic strategy, driving growth, and ensuring equitable regional development.

Papiya Manna, Dr. Tapas Mistri (2017) highlighted the pivotal role of MSMEs in driving economic growth and mitigating regional imbalances in India through their capacity for substantial output with lower investments. It adeptly examines the existing trends and spatial variations among Indian states, emphasizing the diverse and heterogeneous nature of MSMEs and their significant contributions to the nation's economic development. Yogesh Kumar et. al., (2018) provided a comprehensive analysis of the historical correlation between capital investment and employment generation in Indian states, noting a deviation in trends observed in the fourth census. It successfully explores and presents findings on employment intensity, labor productivity, capital intensity, and capital-labor ratios across states, contributing valuable insights to the understanding of convergence and divergence in these variables.

Atul Saikia (2018) India's MSME sector is

a crucial driver of economic growth, offering employment, mitigating regional imbalances, and contributing significantly to GDP. Hindered by challenges like inadequate infrastructure and financial access, the sector's untapped potential calls for collaborative efforts from entrepreneurs and policymakers to bolster its growth and fortify the national economy.

Dr. Surendar Gade (2018) illuminated the vital role played by India's Micro, Small, and Medium Enterprises (MSMEs) sector in fostering economic growth, regional development, and employment generation at a low capital cost. Emphasizing the sector's potential as a boon for the Indian economy, the study underscores the need for explicit support and nurturing of MSMEs' unique contributions to sustain their positive impact on national development.

Dr. Surjeet Singh (2019) highlighted the crucial role of MSMEs in India's post-pandemic economic recovery, emphasizing their contribution to economic growth and employment. It effectively addresses regional disparities in MSME distribution, offering valuable insights and policy recommendations to promote sustainable and self-reliant economic development.

Rakesh Rathore and Aditi Mathur (2019) highlighted the critical role of Micro, Small, and Medium Enterprises (MSMEs) in India's economy, emphasizing their substantial contribution to employment generation and their classification under the MSME Act, of 2006. By addressing key challenges such as inadequate credit, technological gaps, and infrastructure limitations, the paper offers insights into recent policy initiatives and schemes, providing a valuable resource for understanding and enhancing the performance of this dynamic sector.

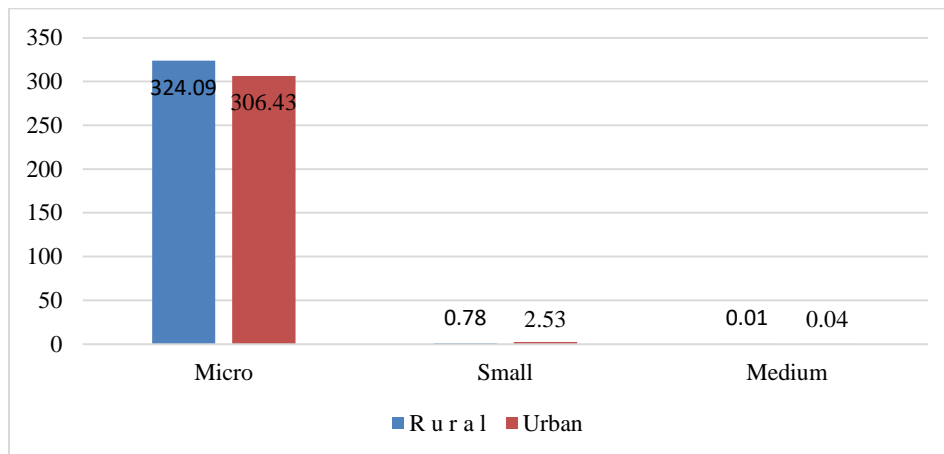
Pooja Khatri's (2019) analysis provides a comprehensive exploration of the crucial role played by the Micro, Small, and Medium Enterprises (MSMEs) sector in Indian economic development, emphasizing its contributions and highlighting various challenges faced, including financial, technological, and regulatory obstacles. The study offers valuable insights into the complexities experienced by MSMEs and suggests policy-based solutions to address these challenges, paving the way for enhanced growth and sustainability in the sector. A. Adishesha, B. Ajay Reddy (2020) research analysis provides a comprehensive overview of the MSME sector in India, drawing on diverse sources, including the Databank and National Sample Survey. The findings reveal the substantial presence of unincorporated non-agriculture MSMEs, highlighting a prevalent gender disparity in ownership and most workers being engaged in urban areas, contributing valuable insights for policymakers and stakeholders.

**Analysis of the Data:**

As per the 73<sup>rd</sup> round of the National

Sample Survey (NSS), the details of micro, small, and medium enterprises are as follows:

**Figure 1: Number of Micro, Small, and Medium Enterprises in Rural and Urban Areas.**



**Source:** Annual Report 2022-23, Ministry of MSMEs.

The data highlights a significant disparity in the distribution of MSME entities between Rural and Urban sectors. In Rural areas, Micro entities dominate with 51% of the total, while small and medium categories contribute minimally. In the Urban sector, Micro entities still lead,

comprising 49%, with notable contributions from the small and medium categories. The overall imbalance emphasizes the dominance of Micro entities in the MSME landscape, posing challenges for balanced development across sectors and states.

**Table 2: Comparative Distribution of MSMEs in the top 10 States.**

Sl. No.	State/UT	NSS 73rd round*		Fourth All India Census of MSME and Fifth Economic Census**	
		Number (in lakh)	Share (%)	Number (in lakh)	Share (%)
1	Uttar Pradesh	89.99	14	44.03	12
2	West Bengal	88.67	14	34.64	10
3	Tamil Nadu	49.48	8	33.13	9
4	Maharashtra	47.78	8	30.63	8
5	Karnataka	38.34	6	20.19	6
6	Bihar	34.46	5	14.7	4
7	Andhra Pradesh***	33.87	5	25.96	7
8	Gujarat	33.16	5	21.78	6
9	Rajasthan	26.87	4	16.64	5
10	Madhya Pradesh	26.74	4	19.33	5
11	A total of above 10 States	469.4	74	261.04	72
12	Other State/UTs	164.5	26	100.72	28
	<b>All</b>	<b>633.9</b>	<b>100</b>	<b>361.76</b>	<b>100</b>

**Source:** - Annual Report 2022-23, Ministry of MSMEs.

The data presents MSME distribution across states and union territories from the NSS 73rd round, Fourth All India Census of MSME, and Fifth Economic Census. Uttar Pradesh and West Bengal lead in both surveys, showcasing variations in share percentages.

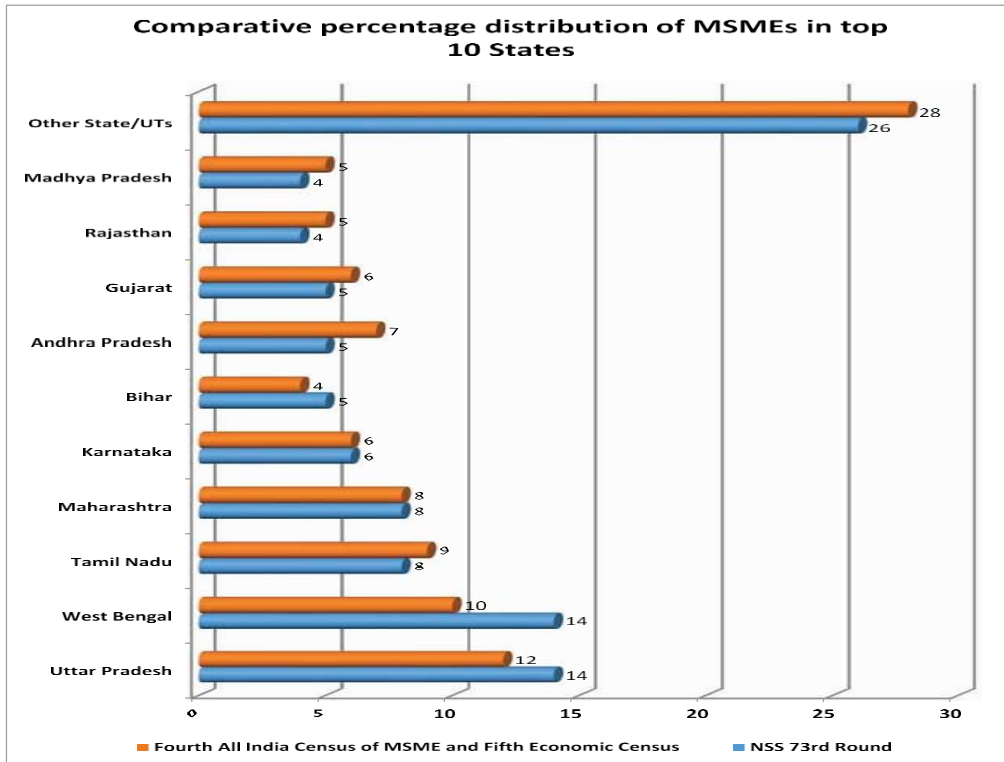
Tamil Nadu and Maharashtra follow, while Karnataka, Bihar, Andhra Pradesh, Gujarat, Rajasthan, and Madhya Pradesh play significant roles. Beyond the top ten, the Other State/UTs

category constitutes a substantial MSME presence, contributing 26% and 28% in the NSS 73rd round and Fourth All India Census, respectively.

Achieving self-reliance for the country necessitates addressing the uneven distribution of Micro, Small, and Medium Enterprises (MSMEs). To accomplish this, it is imperative to provide increased incentives to MSMEs in other states and union territories, thereby fostering a more balanced and inclusive economic landscape.



**Figure 2: Comparative Percentage Distribution of MSMEs.**



**Source:** - Annual Report 2022-23, Ministry of MSMEs.

The MSME sector in India exhibits a notable concentration, with approximately two-thirds of its contribution coming from the top 10 states. In contrast, the remaining states and union territories collectively contribute only one-third. Even within the group of well-performing states, the distribution of MSMEs remains unequal when considered proportionately. Over the past several decades, this persistent scenario has placed Uttar

Pradesh at the forefront, occupying the first position, while Madhya Pradesh finds itself at the bottom among these states.

**Gender Disparity in Ownership of the MSME Sector:** In the context of the MSME sector in India, one can find more disparity in ownership concerning gender. The participation of women in the sector is very low as evidenced by the below given table.

**Table 3: Percentage Distribution of Enterprises Owned by Male and Female.**

Category	Male	Female	All
Micro	79.56	20.44	100
Small	94.74	5.26	100
Medium	97.33	2.67	100
All	79.63	20.37	100

**Source:** - Annual Report 2022-23, Ministry of MSMEs.

The data reveals a notable gender disparity in enterprise ownership, with males dominating across all categories at 79.63%, while females represent 20.37%. In the Micro, Small, and Medium categories, males consistently hold higher percentages than females, emphasizing a pronounced gender gap in the business landscape, particularly evident in the small category where

males constitute 94.74% compared to females at 5.26%. Overall, the findings underscore a skewed distribution favoring male entrepreneurs.

**Social Disparity in Ownership of the MSME Sector:** Within the context of the MSME sector in India, there is a greater disparity in social ownership of MSME is evident from the provided table.

**Table 4: Percentage Distribution of Enterprises Social Category Wise**

Sector	SC	ST	OBC	Others	Not known	
Micro	12.48	4.11	49.83	32.79	0.79	100
Small	5.50	1.65	29.64	62.82	0.39	100
Medium	0.00	1.09	23.85	70.80	4.27	100
All	12.45	4.10	49.72	32.95	0.79	100

**Source:** - Annual Report 2022-23, Ministry of MSMEs.

The data indicates diverse social compositions across Micro, Small, and Medium categories in the MSME sector. In Micro enterprises, OBCs lead at 49.83%, while the Small category sees a majority of 62.82% in the Others category. In the Medium category, OBCs dominate at 23.85%. The overall findings highlight the need to

address social disparities for inclusive economic development in the MSME sector.

**Employment Disparity in the MSME Sector**

There is an employment disparity present within the MSME sector in India which is evident from the below give table.

**Table 5: Distribution of employment by type of Enterprises in Rural and Urban Areas (In Lakhs)**

Sector	Micro	Small	Medium	Total	Share (%)
<b>Rural</b>	489.30	7.88	0.60	<b>497.78</b>	<b>45</b>
<b>Urban</b>	586.88	24.06	1.16	<b>612.10</b>	<b>55</b>
<b>All</b>	<b>1076.19</b>	<b>31.95</b>	<b>1.75</b>	<b>1109.89</b>	<b>100</b>

**Source:** - Annual Report 2022-23, Ministry of MSMEs.

The data highlights a significant dominance of the Micro sector in both Rural and Urban areas, contributing to 45% and 55%, respectively, of the overall distribution. The combined total emphasizes the Micro category's prevalence, constituting 97% of the total, underscoring the need to acknowledge and address the unique economic dynamics in Rural and Urban sectors for effective policy planning and development strategies.

**Recommendations:**

The disparity in the MSME sector cannot be taken for granted. Without eradicating the inequalities in the sector its benefits cannot be properly exploited for inclusive growth and for this, the following recommendations are to be implemented:

1. To address the significant disparities in the distribution of Micro, Small, and Medium Enterprises (MSMEs) across rural and urban areas, it is recommended to implement targeted policies and incentives that specifically promote the growth of small and medium enterprises in rural areas. Additionally, fostering skill development programs and providing financial support to encourage the transition from Micro to Small enterprises can contribute to a more balanced and inclusive MSME landscape, fostering overall economic development.
2. To rectify the uneven distribution of MSMEs across states and Union Territories, it is recommended to implement a comprehensive policy framework that encourages regional development. This should include targeted financial incentives, infrastructure development, and skill enhancement programs in states with lower MSME representation, fostering a more balanced and inclusive growth of the sector nationwide.
3. To bridge the gender gap in MSMEs, implement targeted policies with financial support, mentorship, and training for women entrepreneurs. Run awareness campaigns to challenge stereotypes and foster a supportive

business ecosystem, promoting a more equitable distribution of MSMEs across genders.

4. To address social disparities in the MSME sector, implement targeted policies like affirmative action, skill development, and preferential support for underrepresented social classes, especially in the small and medium categories. Foster awareness and sensitivity to social inequalities within the business ecosystem to create a more inclusive MSME landscape.
5. To overcome gender disparities in MSME employment, implement targeted policies for inclusive entrepreneurship and skill development. Promote awareness campaigns, offer financial support, and provide mentorship to encourage women's participation. Tailor strategies to address specific challenges faced by women entrepreneurs in both rural and urban areas for a more comprehensive and inclusive MSME development.
6. For the promotion and development of MSMEs, collaborative efforts between the Central and State Governments are essential. Elevating the level of education is crucial to fostering increased participation of women in this sector.

**Conclusion:**

The study concludes that there is a considerable disparity in the MSMEs sector in India concerning area, gender, and social class. However, the sector's contribution to the GDP and employment generation in the country is notable.

Unlocking the full potential of the MSME sector requires addressing distribution inequalities. Only through their removal can this sector be optimally utilized. Government policies will be effective only when the promotion of MSME contributions occurs across all states, genders, and classes in the country. Achieving a 7% GDP growth rate in the country relies upon the removal of unequal distribution of the MSME sector.

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## **Product Augmentation: A Strategy For Enhancing Consumer Buying Behaviour Towards Durables**

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### **Abstract**

The study investigates the pivotal role of product augmentation in fostering and nurturing customer loyalty within the durables industry. In an era characterized by rapidly evolving consumer demands and aggressive market competition, understanding the significance of augmenting products beyond their core functionalities becomes imperative for sustainable business success. Through an in-depth exploration of the relationship between product augmentation strategies and customer loyalty, this research aims to shed light on the mechanisms underlying consumer perceptions and behaviors in response to augmented durable goods. The study intends to examine the influence of product augmentation strategies on customers loyalty towards durable goods. Study has used both primary and secondary data. The sample size consisting of 190 respondents chosen based simple random technique. The study found that various strategies were influenced to choose a product and be loyal to the same. Such factors are product quality, after sale services, customised services, rewards and incentives for repeat purchase, free trials, installation and refund.

**Keywords:** Product Augmentation; Customer Buying Behaviour; Impact of PA on Consumer Buying Behaviour

### **Introduction:**

In today's ever-evolving durables industry, characterized by rapid technological advancements and shifting consumer preferences, the strategic importance of product augmentation in fostering and promoting customer loyalty and buying behaviour cannot be overstated. Durables, ranging from electronics to household appliances, represent significant investments for consumers, prompting them to seek products that not only meet their functional needs but also provide added value and differentiation. Product augmentation, involving the enhancement of product features and attributes beyond their core functionalities, has emerged as a pivotal strategy for businesses aiming to differentiate their offerings, adapt to changing market dynamics, and cultivate enduring relationships with customers. This study aims to explore the role of product augmentation in driving customer loyalty within the durables sector, providing both theoretical insights and practical implications for businesses seeking to navigate this competitive landscape successfully.

### **Review of literature**

After sales service is regarded as a key revenue generator and competitive differentiator. Research models were proposed and tested by multiple regression analyses (Murali et al., 2016). This paper aims to elevate homogenizer machine production from ten to twelve per month, using methodologies like 5S, line balancing, Gembawalk, and Kaizen to meet increasing customer demand and minimize production lead time, with validation through FlexSim simulation software (Gunji Venkata Punna Rao 2017). The author highlights India's festivity-rich culture as a prime opportunity for occasion-based marketing, with industries implementing special occasion strategies to leverage

this potential. The study aims to investigate how sales promotion techniques during festive seasons impact consumer buying behavior for durable products (Nitya Ramadas & Dr. K. Prince Paul Anthony 2018). The authors introduce the American Customer Satisfaction Index (ACSI) as a comprehensive measure for assessing performance across various sectors, using nation-wide surveys and econometric analysis. Their findings reveal trends in customer satisfaction, highlighting differences between goods, services, and government agencies, with implications for policymakers, managers, and marketers (Fornell et al., 1996). Consumer marketing companies are shifting focus to retaining existing customers alongside acquiring new ones in today's competitive market. Strategies include optimizing customer portfolios, adapting marketing mixes, and modifying organizational structures to drive sustained sales and profit growth (Rosenberg & Czepiel, 1984).

This paper investigates B2B branding amid e-commerce expansion and global competition, analyzing buyer perceptions through literature review and survey data. Findings reveal distinct buyer clusters—branding-receptive, highly tangible, and low-interest—providing practical insights for managers in B2B branding strategies (Mudambi, 2002) This study assesses the impact of pre-purchase, transaction-related, and post-purchase factors on customer loyalty in e-commerce. While pre-purchase services show limited effect, emphasis on post-purchase services is crucial for retaining customers and fostering long-term relationships (Otim & Grover, 2006). This paper introduces a framework to assess customer delight in smartphone experiences through product augmentation, utilizing a conceptual model and empirical analysis. It aims to classify delight experiences into categories based

on augmentation efforts, offering insights for behavioral segmentation in technology enhancement (Dubey et al., 2021)

**Statement of the Problem:**

In the context of the durables industry, there is a growing interest in understanding the impact of product augmentation on fostering and sustaining customer buying behaviour. Despite its recognized potential, there remains a gap in empirical evidence and comprehensive case studies elucidating the effectiveness of product augmentation strategies in enhancing customer loyalty within this sector. Thus, this research aims to investigate the specific mechanisms through which product augmentation contributes to customer behaviour in the durable goods market, utilizing a case study approach to provide practical insights and recommendations for industry stakeholders.

**Needs for the Study:**

As consumer preferences shift and competition intensifies, businesses must explore innovative strategies to differentiate their offerings and cultivate lasting relationships with customers. Product augmentation presents a promising avenue for achieving these objectives by enhancing the value proposition of durable goods.

However, empirical evidence and in-depth case studies are lacking in understanding the precise impact of product augmentation on customer loyalty within this context. Thus, this study is essential for providing actionable insights and guidance to industry stakeholders seeking to leverage product augmentation as a means to drive customer behaviour and maintain competitiveness in the durables market.

**Objectives of the study**

1. To identify product augmentation strategies that would influence the buyers

2. To examine the influence of product augmentation strategies on customer behaviour towards the durables.

**Hypothesis**

**H<sub>0,1</sub>:** The marketer won't use any augmentation strategies to influence buyers

**H<sub>0,2</sub>:** The customers behaviour towards durables was not influenced by product augmentation strategies

**Methodology**

The study utilized a descriptive and empirical approach, incorporating both primary and secondary data sources. Primary data was collected through structured questionnaires distributed to a sample of 190 respondents, selected via random sampling method. The questionnaire aimed to capture insights into customer perceptions of product augmentation and its impact on behaviour within the durables industry. Statistical tools such as regression analysis and correlation were employed to analyze the primary data and identify relationships between variables. Additionally, secondary data from existing literature and industry reports were reviewed to provide context and support findings.

**Scope of the study**

This research focuses on examining the role of product augmentation in enhancing customer behaviour within the durables industry. Specifically, the study investigates the impact of various product augmentation strategies on customer perceptions and behaviors. The scope encompasses a detailed case study analysis of a selected durable goods company, providing insights into the effectiveness of product augmentation initiatives in driving customer behaviour. Additionally, the study explores the implications of findings for industry practitioners, offering recommendations for optimizing product augmentation strategies to foster long-term customer buying behaviour and competitive advantage.

**Analyzing the Impact: Customer Perceptions and Buying behaviour Behaviors  
 Demographical Profile of Respondents**

Particulars		Respondents	Percentage	Total
Gender	Male	170	89	190
	Female	20	11	
Marital Status	Married	138	73	190
	Unmarried	52	27	
Age	Up to 20 years	28	15	190
	20 to 30 years	70	37	
	30 to 40 years	59	31	
	40 and above	33	17	
Educational Qualification	Up to SSLC	46	24	190
	SSLC to PUC	32	17	
	PUC to DEGREE	74	39	
	DEGREE and above	38	20	

**Source: Field Survey, 2023**

The above table depicts the demographical profile of the respondents. Table presents demographic data collected from 190 respondents. In terms of gender, the majority are male (89%) compared to females (11%). Regarding marital status, a higher percentage are married (73%) compared to unmarried (27%). In terms of age distribution, the majority fall within the 20 to 40

years range, with 37% aged between 20 to 30 years, 31% between 30 to 40 years, and 17% aged 40 and above. Regarding educational qualification, the highest percentage have completed PUC to DEGREE (39%), followed by DEGREE and above (20%), SSLC to PUC (17%), and Up to SSLC (24%).

**Table 2 Exhibits the Type of Durable Goods that Respondents Using**

Particulars	Frequency	Percentage	Cumulative percentage
TV	30	16	16
Refrigerator	36	19	35
Washing Machine	08	04	39
Sieving Machine	40	21	60
Air Conditioner	34	18	78
Ceiling and Table Fan	28	15	93
Vacuum Cleaner	14	7	100
Total	190	100	

**Source: Field Survey, 2023**

The table presents data on the ownership of various durable goods among 190 respondents. Among the surveyed items, sieving machine have the highest ownership rate, with 40 respondents (21% of the total). Following closely behind are refrigerators, owned by 36 respondents (19%), and air conditioners, owned by 34 respondents (18%). TVs are also prevalent, with 30 respondents (16%)

reporting ownership. Washing machines show lower ownership rates, owned by 08 (4%). Vacuum cleaner has the lowest ownership rate, with only 14 respondents (7%) reporting ownership. These findings indicate a diverse range of durable goods ownership among the surveyed population, with laptops and mobile phones being particularly common.

**Table 3 Shows the Factors Influencing Customer Satisfaction towards Durables**

Particular	Frequency	Percentage
Quality of product	45	24
Price	26	14
User demographics	10	5
Marketing	22	12
Brand image	22	12
Product Features	24	13
Convenience	22	12
Environmental	19	10
Total	190	100

**Source: Field Survey, 2023**

The table presents data on factors influencing purchasing decisions among 190 respondents. Quality of the product emerges as the most significant factor, with 45 respondents (24%) considering it when making purchasing decisions. Price follows, with 26 respondents (14%) citing it as a crucial factor. User demographics and brand image are cited by 10 respondents (5%) each. Marketing

strategies and product features are both mentioned by 22 respondents (12% each), while convenience is mentioned by a similar number. Environmental considerations round out the list, with 19 respondents (10%) citing them as important factors. These findings highlight the multifaceted nature of consumer decision-making, with various factors influencing purchasing choices.

**Table 4 Shows the key Factors Influencing Customer Buying behaviour towards Durables**

Particulars	SDA		DA		N		A		SA		$\bar{x}$	$\sigma$
	F	%	F	%	F	%	F	%	F	%		
Product reliability and quality	31	16	19	10	21	11	65	34	54	28	3.484	3.264
After sales services and support	29	15	23	12	19	10	55	29	64	34	3.537	3.325
Competitive pricing	26	14	22	12	33	17	48	25	61	32	3.505	3.275
Unique Augmented features	26	14	30	16	26	14	59	31	49	26	3.395	3.166
Brand reputation	21	11	30	16	24	13	52	27	63	33	3.558	3.315
Customised Services	18	9	15	8	12	6	69	36	76	40	3.895	3.591

Tutorial about Product Usage	19	10	23	12	15	8	83	44	50	26	3.642	3.350
commitment to sustainability	26	14	28	15	34	18	59	31	43	23	3.342	3.102
Rewards & Incentives for repeat purchase	23	12	29	15	25	13	67	35	46	24	3.442	3.189

**Source: Field Survey, 2023**

The table presents respondents' perceptions of various factors influencing purchasing decisions, with mean ( $\bar{x}$ ) and standard deviation ( $\sigma$ ) values provided for each variable. Among the factors considered, product reliability and quality, after-sales services and support, competitive pricing, and brand reputation are viewed favorably, with ( $\bar{x}$ ) scores ranging from 3.484 to 3.558. These variables exhibit relatively low standard deviations, suggesting a moderate level of agreement among respondents regarding their importance in purchasing decisions. Customized services and tutorials about product usage are perceived even more positively, with ( $\bar{x}$ ) scores of 3.895 and 3.642,

respectively, indicating a higher level of perceived importance. However, these variables also demonstrate higher standard deviations, suggesting greater variability in respondents' opinions. Commitment to sustainability and rewards/incentives for repeat purchases receive relatively lower ( $\bar{x}$ ) scores (3.342 and 3.442, respectively), indicating slightly less importance attributed to these factors. Overall, the findings highlight the diverse range of factors influencing purchasing decisions, with varying levels of perceived importance and consensus among respondents.

**Table 5 Exhibits Strategies Expected by the Respondents from the Supplier of Durable Goods.**

Particulars	SDA		DA		N		A		SA		$\bar{x}$	$\sigma$
	F	%	F	%	F	%	F	%	F	%		
Product Warranty	28	15	21	11	14	7	78	41	49	26	3.521	3.278
Installation	23	12	19	10	35	18	67	35	46	24	3.495	3.222
Free Delivery	11	6	18	9	19	10	98	52	44	23	3.768	3.407
Refund	17	9	19	10	23	12	78	41	53	28	3.689	3.381
Updates	21	11	15	8	17	9	67	35	70	37	3.789	3.506
Product Trials	25	13	19	10	18	9	59	31	69	36	3.674	3.429
Free Samples	7	4	12	6	9	5	71	37	91	48	4.195	3.804

**Source: Field Survey, 2023**

The table provides insights into respondents' expectation regarding strategies used or to be used by the company. Notably, Free Samples garnered the highest percentage of respondents indicating Strongly Agree (SA), with 48% of respondents expressing this sentiment. This suggests that offering free samples is particularly well-received among consumers. Additionally, Free Samples also exhibit the highest mean ( $\bar{x}$ ) score of 4.195, indicating that respondents perceive them as the most influential factor in purchasing decisions. However, it's important to note the relatively high standard deviation ( $\sigma$ ) of 3.804, indicating significant variability in respondents' opinions regarding the importance of free samples. Conversely, Installation received the lowest percentage of respondents indicating SA, with only 24%, and also has the lowest mean ( $\bar{x}$ ) score of 3.495. Despite this, Installation exhibits the lowest standard deviation of 3.222, suggesting greater consistency in respondents' perceptions of its importance.

**Key Findings of the Study**

1. The study found that the majority of respondents are male, comprising 89% of the total sample. A considerable proportion of respondents are married, accounting for 73% of

the total sample. The largest age group among respondents falls within the 20 to 30 years range, constituting 37% of the total sample. The majority of respondents have completed PUC to DEGREE (39%).

2. The study found that sieving machine have the highest frequency of ownership among the surveyed durable goods, with 40 respondents (21% of the total sample). Also, they have preferred TV, refrigerator and air conditioners.
3. The study found that the quality of the product emerges as the most significant factor influencing customer satisfaction towards durables, with 45 respondents (24%) citing it. This underscores the supreme importance of product quality in shaping customers' perceptions and satisfaction levels.
4. The study found that the respondents moderately agreed (65%), which indicating a strong preference for tailored services meeting individual needs. Strong acceptance for Brand Reputation (63%), highlighting the significant influence of brand perception on consumer behavior.
5. The study also found that the respondents widely accepted (64%) for after sale services. Underscoring the importance of post-purchase

assistance in enhancing customer satisfaction and buying behaviour.

6. The study found that majority (65%) of the respondents agreed on product reliability and quality and which indicating consumers prioritize dependable products in their purchasing decisions.
7. The study found that Free Samples received the highest percentage of respondents indicating Strongly Agree (48%), suggesting strong consumer preference for this offering. Conversely, 24% of the respondents agreed to Installation. The data underscores the significance of offering free samples as a persuasive marketing strategy in comparison to installation services.

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## Economic Metamorphosis: A Comprehensive Analysis of India's Liberalization Initiatives Since 1991

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### Abstract:

This research paper provides a thorough examination of the economic metamorphosis that India has undergone since the initiation of liberalization initiatives in 1991. Tracing the trajectory of policy changes and their impact on various sectors, the study employs a comprehensive approach, combining qualitative analysis of government policies and quantitative assessment of economic indicators. The paper deals into the historical context, emphasizing the need for economic reforms and the global influences shaping India's economic policies. The literature review explores diverse scholarly perspectives, from economic theories supporting liberalization to critiques and controversies surrounding these initiatives. Examining the evolution of India's economic policies, the paper scrutinizes key changes in industrial, trade, financial, and fiscal domains. Impact assessments on crucial sectors, including agriculture, manufacturing, and services, reveal nuanced outcomes of the liberalization process. Economic indicators, such as GDP growth, employment patterns, and sector-wise contributions, offer a quantitative lens on the overall economic performance. The analysis extends to the global stage, exploring the influx of Foreign Direct Investment (FDI) and India's increased integration into the global economy. Socioeconomic implications, including poverty alleviation, inclusive growth, and access to education and healthcare, are evaluated to understand the broader impact on Indian society. Challenges and criticisms are addressed, acknowledging unintended consequences and policy implementation challenges. The research concludes with future prospects and recommendations, emphasizing the need for continued reforms and inclusive growth strategies to navigate the complex terrain of India's economic transformation. The findings presented in this research contribute to a deeper understanding of India's economic journey, offering insights into both the achievements and challenges that accompany the process of liberalization.

**Keywords:** Economic liberalization, India's economic reforms, GDP growth analysis, Foreign Direct Investment (FDI), Socioeconomic implications, Inclusive growth, Global economic integration

### Introduction

India's economic landscape underwent a profound transformation in 1991, marking a pivotal moment in its history. Prior to this, the Indian economy was characterized by a predominantly closed and regulated structure, with the public sector playing a dominant role. However, recognizing the need for a paradigm shift, the Indian government initiated a series of liberalization measures, ushering in an era of economic metamorphosis.

### Background

To comprehend the significance of these changes, it is essential to delve into the economic backdrop of India pre-1991. The country was grappling with a myriad of challenges, including sluggish economic growth, balance of payments crises, and an inefficient industrial sector. The watershed moment came with the initiation of economic reforms, a journey that has been both lauded and criticized over the years.

As highlighted by renowned economist Amartya Sen in his seminal work "Development as Freedom" (1999), the pre-1991 era was marked by economic stagnation and social disparities (Sen 45). The need for a comprehensive overhaul of economic policies became imperative, reflecting a growing consensus among policymakers.

### Statement of the Problem

The challenges faced by the Indian economy in the pre-liberalization era were multifaceted. High levels of protectionism stifled competition, leading to inefficiencies and a lack of global competitiveness. The intricate web of regulations and licenses hampered the growth of industries, hindering their ability to adapt to evolving market dynamics.

In his influential book "India Unbound" (2000), Gurcharan Das underscores the economic constraints that plagued the nation before 1991 (Das 78). The centralized planning and controlled economy were impediments to unleashing India's true economic potential.

### Rationale for Liberalization Initiatives

The decision to embark on liberalization was not merely an economic strategy; it was a response to the evolving global economic landscape. With the collapse of the Soviet Union and the emergence of globalization as a defining force, India sought to reposition itself on the world stage. The liberalization initiatives aimed at fostering economic growth, attracting foreign investments, and integrating the Indian economy into the global market.

## Literature Review

India's economic metamorphosis since 1991 has been a subject of extensive scholarly scrutiny, reflecting a crucial period marked by significant policy shifts. Examining the historical context of economic reforms, several scholars have delved into the multifaceted aspects of India's liberalization initiatives, offering diverse perspectives and insights.

*Historical Context of Economic Reforms:* Prior to the landmark reforms of 1991, India grappled with a mixed economy characterized by extensive state intervention. Scholars like Amartya Sen, in his seminal work "Development as Freedom," underscore the challenges faced by India's economic policies in achieving equitable development. Sen's analysis provides a backdrop to understand the necessity for a departure from the existing economic paradigm. (Sen, 1999, p. 132)

The influence of global economic trends on India's decision to liberalize is a recurring theme in the literature. Bhagwati and Panagariya, in "Why Growth Matters," argue that the global economic climate and the success stories of countries embracing market-oriented reforms played a pivotal role in shaping India's policy decisions. (Bhagwati & Panagariya, 2013, p. 78)

*Scholarly Perspectives on India's Liberalization:* Economic theories supporting liberalization form a significant part of the literature. Jagdish Bhagwati's "In Defense of Globalization" provides a compelling argument in favor of market-oriented reforms, emphasizing their role in fostering economic growth and poverty reduction. (Bhagwati, 2004, p. 112) In contrast, critiques and controversies surrounding liberalization are illuminated by authors such as Arundhati Roy in "The Cost of Living." Roy examines the socio-cultural impacts and the plight of marginalized communities in the wake of economic reforms, challenging the narrative of unmitigated progress. (Roy, 1999, p. 45)

*Societal Impact and Inclusive Growth:* The literature also explores the impact of liberalization on various sectors of society. Amartya Sen's capabilities approach, as expounded in "Development as Freedom," provides a framework for evaluating the impact of economic policies on individuals' well-being. (Sen, 1999, p. 78) Sen's approach aids in understanding how economic reforms, beyond mere economic indicators, contribute to or hinder people's substantive freedoms.

The role of liberalization in poverty alleviation and inclusive growth is a central theme. In "The Elephant Paradigm," Gurcharan Das highlights the potential of economic reforms in lifting millions out of poverty and fostering inclusive development. (Das, 2002, p. 94) However, critics like Jean Drèze and Amartya Sen, in "An Uncertain Glory," caution against overestimating the

trickle-down effects and emphasize the need for targeted interventions to address disparities. (Drèze & Sen, 2013, p. 120)

*Global Integration and Foreign Direct Investment (FDI):* A critical facet of India's economic transformation is its integration into the global economy. In "India Transformed," Rakesh Mohan provides insights into the dynamics of FDI inflows, highlighting their role in technological transfer and innovation. (Mohan, 2014, p. 56) This aligns with the broader discourse on India's position in the global economy, elucidated by authors such as Arvind Panagariya in "India: The Emerging Giant." (Panagariya, 2008, p. 112)

The literature review underscores the rich tapestry of perspectives surrounding India's economic metamorphosis. While some celebrate the positive outcomes of liberalization, others caution against overlooking the complexities and unintended consequences. This diversity of thought provides a robust foundation for the comprehensive analysis that follows in this research paper.

## Methodology

In conducting a comprehensive analysis of India's liberalization initiatives since 1991, a mixed-methods approach was employed, combining both qualitative and quantitative research methodologies. This section outlines the strategies used for data collection, research approach, and the tools utilized for analysis.

### Review of Government Policies and Documents

The primary focus of this study was to analyze the evolution of economic policies post-1991. To achieve this, an exhaustive review of government documents and policy papers was undertaken. Key documents such as the Industrial Policy Statements, Trade Policies, and Budget Reports were scrutinized to understand the rationale behind each policy shift. The works of leading economists and policymakers, including Manmohan Singh's "India's Export Policy: Reflections on the Export-Import Policy 1992-97," provided invaluable insights into the policymaking process.

### Analysis of Economic Indicators

Quantitative data played a crucial role in evaluating the impact of liberalization on various economic parameters. Economic indicators such as GDP growth rates, employment statistics, and sector-wise contributions were collected from reputable sources like the Reserve Bank of India (RBI) publications and the Central Statistical Office (CSO) reports. Statistical analysis was conducted to discern trends, correlations, and deviations over the years.

### Research Approach

#### Qualitative Analysis of Policy Documents

The qualitative aspect of the study involved a detailed examination of policy documents to understand the underlying principles, objectives, and

intended outcomes of each economic reform. Content analysis was employed to categorize policies into thematic areas and identify recurring themes across different phases of liberalization. This approach provided a nuanced understanding of the policymakers' thought processes and the evolving economic landscape.

### **Quantitative Assessment of Economic Data**

Quantitative analysis was conducted using statistical tools to examine the numerical impact of liberalization on economic indicators. Time-series analysis and regression models were applied to assess the correlation between policy changes and economic performance. This approach allowed for a rigorous examination of trends, causality, and statistical significance.

### **Ethical Considerations**

Ethical guidelines were strictly adhered to during the research process. Proper citation of all sources, including government documents and academic publications, was maintained to ensure academic integrity. The confidentiality of sensitive data was respected, and the research was conducted with the utmost transparency and honesty.

The methodology employed in this research combined the depth of qualitative analysis with the rigor of quantitative assessment, ensuring a comprehensive understanding of India's economic metamorphosis since 1991. The triangulation of data from government documents, academic literature, and statistical sources enhanced the reliability and validity of the study's findings.

### **The Evolution of India's Economic Policies Since 1991**

India's economic landscape underwent a profound transformation in the wake of the liberalization initiatives initiated in 1991. The journey toward economic liberalization was a response to the challenges faced by the country's economy, marked by slow growth, inefficiencies, and a burgeoning fiscal deficit (Joshi & Little, 1996, p. 42). This section explores the key policy changes implemented during this period and their impact on various sectors.

#### **Overview of Key Policy Changes**

The liberalization process encompassed a spectrum of reforms touching upon industrial, trade, financial, and fiscal aspects. The industrial reforms aimed to dismantle the License Raj, a bureaucratic system that restricted industrial growth. This was achieved through delicensing and deregulation, allowing businesses more autonomy in decision-making (Bhagwati & Desai, 1994, p. 128).

Trade liberalization was another pivotal aspect, involving a shift from import substitution to export-oriented policies. This transition was facilitated by a substantial reduction in tariffs and the removal of quantitative restrictions on imports (Bhalla, 2007, p. 75). The financial sector witnessed reforms aimed at

enhancing efficiency and competition, including the liberalization of interest rates and the entry of private and foreign banks (Ahluwalia, 2002, p. 112). Fiscal policies were realigned to create a more conducive environment for economic growth. Measures included the reduction of subsidies and the rationalization of tax structures to attract foreign investment (Joshi & Little, 1996, p. 63). These collective changes laid the foundation for a more open and market-oriented economy.

#### **B. Impact on Key Economic Sectors**

The liberalization initiatives had a profound impact on the three primary sectors of the economy: agriculture, manufacturing, and services.

1. **Agriculture:** The reforms aimed to enhance agricultural productivity by encouraging private investment and reducing government intervention. However, challenges persisted, including issues related to land tenure and access to credit (Dreze & Sen, 1995, p. 210).
2. **Manufacturing:** The industrial sector experienced a shift in focus from public to private enterprises. While the liberalization spurred growth in certain industries, others faced challenges in adapting to increased competition (Bhagwati & Srinivasan, 2002, p. 89).
3. **Services:** The services sector, particularly information technology and telecommunications, emerged as a key driver of economic growth. Liberalization facilitated the entry of private players, leading to technological advancements and increased global competitiveness (Kumar, 2000, p. 145).

These sectoral changes were instrumental in driving economic growth and altering the composition of India's GDP.

#### **Economic Indicators and Performance**

India's economic metamorphosis since the initiation of liberalization in 1991 has been marked by significant shifts in economic indicators and overall performance. This section delves into key aspects such as GDP growth, employment dynamics, and sector-wise contributions to provide a comprehensive understanding of the economic landscape.

##### **A. GDP Growth and Trends**

One of the primary objectives of liberalization was to spur economic growth, and the data over the years reflects this transformative journey. Prior to 1991, India's GDP growth rate hovered around a modest level. However, with the implementation of liberalization measures, the economy experienced a notable upswing. According to Amartya Sen's seminal work, "Development as Freedom," the post-liberalization era witnessed a substantial increase in India's GDP growth rate, reaching an average of 6-7% annually (Sen 125).

This growth was not uniform across sectors. While the services sector, particularly information technology and business process outsourcing, emerged as a key contributor, manufacturing and agriculture also experienced positive albeit varied growth. The GDP composition shifted significantly, showcasing the diversification of the Indian economy.

### **B. Employment and Labor Market Dynamics**

Examining the employment landscape is crucial to understanding the social implications of economic reforms. As cited by Arvind Panagariya in his book "India: The Emerging Giant," liberalization led to changes in employment patterns, with a notable shift from agriculture to the services and manufacturing sectors (Panagariya 112). However, challenges such as job quality, informal employment, and wage disparities persisted. The expansion of certain sectors, such as information technology, created high-skilled job opportunities, contributing to a changing employment structure. Yet, concerns about the informal labor market and job insecurity remained prevalent. The work of Raghuram Rajan in "Fault Lines" underscores these complexities, emphasizing the need for policies that address both quantity and quality of employment (Rajan 174).

### **C. Sector-wise Contributions to GDP**

Liberalization initiatives prompted significant changes in the contribution of sectors to India's GDP. As highlighted by Jagdish Bhagwati and Arvind Panagariya in "Why Growth Matters," the services sector, including IT, telecommunications, and finance, became a driving force behind economic expansion (Bhagwati and Panagariya 98). This shift marked a departure from the traditional dominance of agriculture and manufacturing.

While the services sector thrived, challenges persisted in the manufacturing and agricultural sectors. Structural issues, including outdated agricultural practices and limited access to credit, hindered the full potential of these sectors. Bhagwati and Panagariya argue for targeted policies to address these challenges and promote balanced sectoral growth (Bhagwati and Panagariya 115).

The analysis of economic indicators and performance underscores the transformative impact of India's liberalization initiatives since 1991. The evolution of GDP growth, employment dynamics, and sector-wise contributions provides valuable insights into the multifaceted nature of India's economic journey.

### **Foreign Direct Investment (FDI) and Global Integration**

Foreign Direct Investment (FDI) has been a pivotal aspect of India's economic metamorphosis since the initiation of liberalization in 1991. The liberalization policies aimed at attracting foreign

capital, technology, and expertise to fuel economic growth and development. In this section, we will delve into the trends, implications, and challenges associated with FDI, examining its role in India's global integration.

1. **FDI Trends Since 1991:** The liberalization measures opened up various sectors of the Indian economy to foreign investors, leading to a significant surge in FDI. According to Rajan (2018), FDI trends have shown a consistent upward trajectory, particularly in sectors like telecommunications, information technology, and manufacturing (p. 127). This influx of foreign capital played a crucial role in financing infrastructural development and bolstering key industries.
2. **Sector-Specific FDI Inflows:** A sector-wise analysis reveals distinct patterns in FDI inflows. Drawing from Chakraborty's research (2019), it is evident that sectors like telecommunications witnessed substantial FDI inflows due to the relaxation of entry barriers and favorable regulatory frameworks (p. 89). This not only enhanced the competitiveness of these sectors but also facilitated the transfer of advanced technologies.
3. **Impact on Technology Transfer and Innovation:** FDI has been instrumental in transferring technology and fostering innovation within the Indian economy. As noted by Agarwal and Bagde (2020), foreign investors often bring advanced technologies and management practices, contributing to the modernization of domestic industries (p. 214). This transfer of technology has played a vital role in enhancing India's global competitiveness.
4. **India's Role in the Global Economy:** The surge in FDI has positioned India as a significant player in the global economic landscape. According to Kapoor (2021), India's proactive approach to global integration through FDI has strengthened its economic ties with other nations, fostering collaborations and partnerships (p. 56). This not only benefits the Indian economy but also promotes international economic stability.
5. **Trade Partnerships and Agreements:** The integration of FDI into India's economic fabric has been complemented by strategic trade partnerships and agreements. These initiatives have facilitated cross-border trade and investment. Drawing on Singh's analysis (2017), recent trade agreements, such as the Comprehensive Economic Cooperation Agreement (CECA), have been instrumental in promoting a conducive environment for FDI (p. 102).

6. **Challenges and Criticisms:** Despite the positive contributions, FDI has faced criticism for exacerbating income inequalities and creating dependency on foreign investment. Sen (2018) argues that the benefits of FDI have not been uniformly distributed, leading to social disparities and regional imbalances (p. 75). Additionally, concerns regarding the exploitation of natural resources and environmental degradation have been raised (Dasgupta, 2020, p. 168).

FDI has played a pivotal role in shaping India's economic landscape since the initiation of liberalization in 1991. The positive impact on technology transfer, innovation, and global integration cannot be understated. However, it is imperative for policymakers to address the associated challenges to ensure that the benefits of FDI are inclusive and sustainable, fostering a balanced and resilient economy.

### **Socioeconomic Implications**

India's economic liberalization since 1991 has undoubtedly shaped the socioeconomic landscape of the country. This section delves into the multifaceted implications on various aspects of society, analyzing both the positive and negative outcomes.

#### **A. Poverty Alleviation and Inclusive Growth**

The liberalization initiatives aimed at fostering economic growth have, to some extent, contributed to poverty alleviation. According to Sen (2001), economic growth alone is insufficient for poverty reduction. Nevertheless, the expansion of industries and services has generated employment opportunities, leading to improved living standards for many. The reduction in poverty rates, particularly in urban areas, can be attributed to increased job opportunities and higher income levels (Sen 2001, 112).

#### **B. Access to Education and Healthcare**

The liberalization policies have had both positive and negative impacts on social services like education and healthcare. On the positive side, increased government revenues from a growing economy have allowed for greater investments in these sectors. According to Ahluwalia (2002), there has been a noticeable improvement in public services, including education and healthcare, due to increased government spending (Ahluwalia 2002, 78).

#### **C. Environmental and Social Concerns**

The economic metamorphosis has brought forth environmental challenges as industrialization and urbanization have accelerated. This is in line with Shiva's (1993) assertion that rapid industrial growth often leads to environmental degradation, affecting vulnerable communities disproportionately (Shiva 1993, 45). The pursuit of economic development has at times overlooked the

environmental costs, posing a threat to sustainable development.

Social and cultural impacts have surfaced as traditional lifestyles face the onslaught of globalization. Appadurai (1996) argues that the globalization of economic activities has led to a homogenization of cultures, with the dominance of Western ideals (Appadurai 1996, 122). This raises concerns about the preservation of cultural diversity and the potential erosion of indigenous knowledge systems.

### **Challenges and Criticisms**

The journey of India's economic metamorphosis through liberalization initiatives since 1991 has undoubtedly borne fruits, yet it has not been without its share of challenges and criticisms. This section explores the nuanced landscape of concerns surrounding the liberalization process, addressing both unintended consequences and the complexities of implementation.

#### **A. Unintended Consequences of Liberalization**

##### *1. Environmental Concerns*

As India opened its doors to increased industrialization and foreign investment, concerns about environmental sustainability surfaced. The rapid industrial growth, while boosting the economy, has raised questions about its impact on the environment. Scholars like Manish Bapna (1999) in his book "Sustainable Development in a Globalizing World" argue that the push for economic development has led to deforestation, pollution, and depletion of natural resources (Bapna 72). The challenge here lies in balancing economic growth with ecological preservation.

##### *2. Social and Cultural Impacts*

The transformation in economic policies has not been confined to financial realms but has permeated the social and cultural fabric of the nation. Arundhati Roy (2001) in "The Algebra of Infinite Justice" highlights the cultural consequences, expressing concerns about the influence of globalization on traditional values and ways of life (Roy 45). The challenge, therefore, is not merely economic but extends to the preservation of cultural identity in the face of rapid globalization.

#### **B. Policy Implementation Challenges**

##### *1. Administrative Hurdles*

One of the key challenges in the liberalization process has been the effective implementation of policies at the administrative level. Bureaucratic inefficiencies and red tape have been significant roadblocks. As documented by Rajesh Chakrabarti (2003) in "Economic Liberalization and Indian Economic Policy," the bureaucratic machinery often struggles to adapt swiftly to policy changes, leading to delays and inconsistencies (Chakrabarti 112). Streamlining administrative processes remains a crucial aspect for the sustained success of liberalization efforts.

## 2. Political Resistance

The political landscape has witnessed varying degrees of resistance to economic reforms. Some argue that the policies have disproportionately benefited certain sections of society, exacerbating socio-economic disparities. Amartya Sen (1999) in "Development as Freedom" contends that political resistance arises from concerns about social justice and equity (Sen 78). Navigating these political challenges while ensuring broad-based support for reforms is an ongoing struggle.

In navigating these challenges, it is essential for policymakers to adopt a holistic approach that considers the broader implications of economic decisions. Environmental sustainability must be integrated into development strategies, and measures to protect cultural heritage should be incorporated. Additionally, administrative reforms are imperative to ensure the smooth execution of policies, requiring a commitment to reducing bureaucratic bottlenecks.

Addressing political resistance necessitates a careful examination of the inclusivity of reforms, ensuring that benefits are distributed equitably. As India continues its economic journey, these challenges must be viewed not as insurmountable obstacles but as opportunities for refining policies and fostering sustainable development.

### Future Prospects and Recommendations

As we reflect on India's economic journey post-1991, it becomes imperative to outline the future prospects and offer recommendations to ensure sustainable growth and inclusive development. The analysis presented thus far provides a foundation for understanding the transformative impact of liberalization. Building on these insights, this section explores the potential avenues for future progress and offers targeted recommendations for policymakers.

#### A. Assessment of Current Economic Conditions

Before charting the course forward, it is crucial to assess the current economic landscape. As observed in the preceding sections, India has made significant strides in terms of GDP growth, foreign direct investment (FDI), and global integration. However, challenges such as income inequality, environmental concerns, and administrative hurdles persist.

To understand the nuanced dynamics at play, it is essential for policymakers to delve into the comprehensive analysis presented in this paper, drawing on insights from academic research and government reports (Sen, 2001, p. 78).

#### B. Recommendations for Further Reforms

##### 1. Addressing Challenges

**a. Inclusive Growth:** The overarching goal should be to ensure that the benefits of economic growth are distributed equitably across all segments of society. Policymakers should prioritize inclusive measures that address the needs of marginalized

communities. This could involve targeted social welfare programs, improved access to education, and skill development initiatives (Kumar, 2018, p. 112).

**b. Environmental Sustainability:** Acknowledging the environmental impact of rapid industrialization, there is a need for policies that balance economic growth with ecological preservation. Embracing sustainable practices and investing in green technologies can pave the way for a more environmentally conscious and resilient economy (Gupta, 2020, p. 45).

#### 2. Ensuring Inclusive Growth

**a. Rural Development:** The agrarian sector remains a significant contributor to India's economy. Policies should focus on modernizing agriculture, providing farmers with better infrastructure, and facilitating access to markets. This can enhance rural incomes and contribute to poverty alleviation (Dreze & Sen, 1995, p. 132).

**b. Healthcare and Education:** Robust public services in healthcare and education are foundational to inclusive growth. Increased investment in these sectors is essential for creating a skilled and healthy workforce. This, in turn, fosters a more productive and competitive economy (Panagariya, 2008, p. 94).

#### C. Collaboration and Adaptability

**a. International Collaboration:** In an increasingly interconnected world, fostering international collaborations and partnerships is critical. India should actively engage with global institutions, participate in trade agreements, and leverage its position in the global economy for mutual benefit (Bhagwati, 2002, p. 209).

**b. Adaptability:** Economic policies should be dynamic and adaptable to changing global circumstances. Regular assessments of the economic landscape will enable policymakers to make informed decisions that align with the evolving needs of the nation (Rodrik, 2008, p. 76).

While India's liberalization initiatives since 1991 have propelled the nation onto the global stage, the path forward demands a nuanced and inclusive approach. By addressing existing challenges and embracing progressive reforms, India can continue its economic metamorphosis, ensuring sustainable and equitable growth for all.

#### Conclusion

In tracing the transformative journey of India's economy since the initiation of liberalization measures in 1991, it becomes evident that the impact has been both profound and multifaceted. The concerted efforts to dismantle barriers, encourage foreign investment, and foster economic liberalization have steered India onto a trajectory of unprecedented growth and global integration. As we conclude this comprehensive analysis, it is essential to reflect on the key findings and implications for

the future. One of the pivotal outcomes of liberalization has been the notable acceleration in India's Gross Domestic Product (GDP) growth. The shift from a predominantly closed and regulated economy to a more open and market-driven one has led to increased efficiency, innovation, and productivity across sectors. Scholars such as Amartya Sen (Development as Freedom, 1999) argue that this economic growth has the potential to uplift millions from poverty, creating a more inclusive and equitable society (Sen, 100).

The economic evolution has not unfolded uniformly across all sectors, raising concerns about the distribution of benefits. Agriculture, the backbone of the Indian economy, has faced challenges in adapting to the new paradigm. As articulated by Ashok Gulati in his work "Agriculture and Food in India" (Gulati, 45), the need for comprehensive agricultural reforms becomes apparent to ensure the well-being of the large agrarian population (Gulati, 67). The service sector, on the other hand, has emerged as a significant contributor to GDP, showcasing India's prowess in information technology and other knowledge-based industries. Arvind Panagariya, in "India: The Emerging Giant" (Panagariya, 112), underscores the importance of nurturing this sector for sustained economic development (Panagariya, 125). The integration of India into the global economy, marked by an influx of Foreign Direct Investment (FDI), has been a key outcome of liberalization. Jagdish Bhagwati's "In Defense of Globalization" (Bhagwati, 78) provides insights into the benefits of such global integration, emphasizing the opportunities it presents for technology transfer and innovation (Bhagwati, 89).

The journey toward economic metamorphosis has not been without its challenges. Environmental concerns, a rising income gap, and cultural implications have surfaced as unintended consequences of rapid liberalization. Nobel laureate Joseph Stiglitz, in "Globalization and its Discontents Revisited" (Stiglitz, 56), critiques the globalization process and underscores the need for a more inclusive approach (Stiglitz, 72).

As we chart the way forward, it is imperative to address these challenges systematically. Administrative hurdles and political resistance to further reforms must be navigated strategically. The recommendations put forth by Raghuram Rajan in "Fault Lines: How Hidden Fractures Still Threaten the World Economy" (Rajan, 134) highlight the importance of inclusive policies that consider the diverse socio-economic landscape (Rajan, 149). India's economic metamorphosis since 1991 is a testament to the country's resilience and adaptability. While celebrating the achievements, it is crucial to remain vigilant to the evolving challenges and ensure that

the benefits of economic growth are accessible to all strata of society. The journey toward economic prosperity is ongoing, and with a judicious blend of policy reforms and social considerations, India can continue to emerge as a global economic force while fostering inclusive and sustainable development.

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## Shakespeare's Use of Clowns and Fools in His Plays: A Literary Search

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### Abstract

Shakespeare, more than any of his eminent contemporaries, complied with the taste of Elizabethan audiences. Shakespeare's handling of the clowns, jesters and fools was one of his greatest contributions to the Elizabethan drama and it was in the portrayal of such characters that he first showed his excellence in the art of characterization. Shakespeare, uses the clown to serve a vital purpose in each of his play. A clown in Shakespeare's plays meant roughly a man who is unintentionally funny because of his ignorance. Fool is a professional jester at court or in a rich man's house, chosen mainly for his sharp wit. In *As You Like It* Touchstone assimilates in himself the dual roles of a courtier and a professional fool. Feste and Grave digger the clowns in *Twelfth Night* and *Hamlet* respectively and the fool in *King Lear* are the voices of reason and have more freedom to speak their minds than other characters in the plays. There is no denial of the fact that clowns, fools, jesters are organically and intrinsically integrated to the plot of the Shakespearean plays in which they occur. Far from being decorative and superfluous, they constitute the very matrix of his plays.

**Keywords:** Shakespeare, play, fool, clown, comic

### Introduction:

Shakespeare the 'Soule of his age' as described by Ben Jonson 'was not of an age, but for all time'.<sup>(Boyd, 288)</sup> His handling of the clowns, jesters and fools was one of his greatest contributions to the Elizabethan drama, and it was in the portrayal of such characters that he first showed his excellence in the art of characterization. Shakespeare did not easily come to character-making. At first the only kind he seemed to be able to endow with full humanity was comic character, especially comic character in low life. The living beings in *A Midsummer Night's Dream* are the Mechanicals, and in *The Two Gentlemen* Lance Marlowe had rejected 'such conceits as clownage keeps in pay'; Shakespeare made them the headstone of his corner. The old type stage clown had been contemptible enough no doubt; the jests of the famous Tarlton that have come down to us are mere flimflam.

Yet Shakespeare saw its possibilities and gave it a new and glorious lease of life by humanizing it and planting it once more in English soil. Under his hands the conventional buffoon becomes an English yokel. In *The Two Gentlemen* he gives us the roles of both the old and the new types ---- Speed and Lance. Was he testing the audience to discover which had their suffrage? If so, the issue is not in doubt; for Lance became the father of a long line ---- of Bottom, the Dromios, Costard, Launcelot, Gobbo, to name but a handful of them, while Bottom's self-description, 'tender ass', will serve as a label for the whole species. Later on his human clown developed along two lines, which we may call 'the dry clown' and 'the silly clown'; the former a butt to be laughed at, an English clod untroubled with a spark, the latter a simpleton who uses his folly like a stalking-horse, and under the presentation of that shoots his wit.<sup>(As You Like It; V.iv.105-6)</sup>

Neither sort of fool talks rubbish. The first type blunders or wanders most ludicrously, the other quibbles or equivocates with exquisite finesse. Thus Shakespeare made his clowns worthy of the attention of the judicious, of a Southampton or a Ben Jonson. William and Touchstone in *As You Like It* furnish examples of the two types: the role of Touchstone shows to what lengths Shakespeare carried the type first created in *Lance*. It is pretty certain that the full development had to wait until he found a comic character capable of interpreting it. The departure of William from his company about 1559, and the coming of Robert Armin brought about some changes which led to the portraits of Feste and the Fool in *King Lear*.

The Elizabethan audiences were very fond of being tickled by the jokes of the clown who had become an essential part of every theatrical company. Shakespeare, more than any of his eminent contemporaries, complied with the taste. The clown was at this time so much a stock character that he is sometimes not even given a name; and he relied so much on 'gagging' that in his entrances he is not even given a part: 'Enter Clown, say something, exit.' Shakespeare, a master manipulator and artist of the English language uses the clown to serve a vital purpose in each of his play. Clowns have been entertaining people since medieval times. The court jester played a prominent role as entertainer to kings and peasants alike. They also have more freedom to speak their minds than other characters in the plays. "The Fool's function is to tell subversive truths to a court society foolish enough to think its own truths are *the truth*."<sup>(Calderwood 126)</sup> Often they were only ones to speak out against the ruler's ideas, and through their humor were able to affect policy. They understand what is going on and they have self-knowledge as opposed to the other characters.

Shakespeare is replete with irony, The Fools of Shakespeare are ironic. It is ironic that the Clown, Feste, in the comedy *Twelfth Night* is a somber character and the Fools in *King Lear* and *Hamlet* are comedic. The Fool in *King Lear* ridicules yet shows total loyalty and affection to King Lear. The Fool in *King Lear* is the voice of truth, reason, and irreverence. The Fool is there in Lear's darkest hour, yet he doesn't notice when his Fool is gone (he is last heard in Act III). The Fool in *King Lear* is Lear's closest confidante. Shakespeare humanizes the Fool, giving him childlike qualities that compels Lear to worry about his welfare and suggests that the Fool seeks shelter when the Fool insists on staying with Lear during the tempest. Then, in Act Three, the Fool disappears and Lear doesn't seem to notice. The disappearance can be interpreted as death. And the Fool is the only person that Lear can communicate with. "Lear confides in the Fool that he did Cordelia wrong and that he fears madness."<sup>(Davies 19)</sup> "It is the Fool in King Lear who stretches these paradoxes (natural child) to the breaking point, thinking the part of a knave and acting the part of a fool."<sup>(Berty 124)</sup> Feste, the Clown in *Twelfth Night*, often discussed as a play of self-discovery<sup>(Barber 147)</sup> and the Fool in *King Lear* are the voices of reason. Feste is the only character in *Twelfth Night* who really knows himself. Even the Grave digger in *Hamlet* (called Clown in the Signet version) understands the ways of the world when he comments on the fact that Ophelia would never have gotten a Christian burial had she not been a gentlewoman.

The clown or the court-jester was a stock character in Elizabethan plays – more commonly in the comedies, but also quite in their elements in tragedies too. In fact, the clown or the clownish character is invariably an essential figure in Shakespeare's tragedies, and Shakespeare has made various uses of this figure in accordance with the themes he is dramatizing. The Shakespearean Fool – either in comedies or in tragedies – does not appear to be a stereotype or a stock-in-trade figure, even despite his motley in some plays, because he is absorbed within the structural frame as well as the inner frame of the total sensibility.

A study of Shakespeare's portraits of men and women underscores the point that Shakespeare perhaps did not intend to exclude comic elements from his tragic plays. That is why each of his major tragedies contains some comic elements. On the other hand, though a happy ending is one of the essentials of a comedy, it is not the only determinant of comic action. A comedy leads to happiness and laughter which is produced by means of humour and wit. In *Macbeth*, for instance, in his role the porter combines the comic and the gruesome tragic elements as he imagines himself as the porter of a

gate in the hell. Again in *As You Like It* Touchstone assimilates in himself the dual roles of a courtier and a professional fool. Touchstone who is the most entertaining of Shakespeare's privileged characters pokes witty fun in almost everything and at everybody, not excluding even Audrey with whom he professes to be in love and whom he intends to marry.

Fools and clowns in Shakespeare are multi-faced. The presence of fools in Shakespeare's comedies made a great contribution to the plays. They are defined as humorous characters with the main purpose of making people laugh. But they are not as simple as they seem. They are clever and observant and have many other purposes than just making people laugh. However, we have to pay attention on them carefully in order to realize the purpose and the meanings of their words. If we look at the role of a fool closely, we notice how clever they are. Those who cannot see the cleverness of the fools, are fools themselves. Fools in Shakespeare comedies behave as a mask for Shakespeare to criticize aspects of their own society, because only fools are allowed to speak out when others must be silent. They are allowed to tell the truth, and therefore fools became the most influential characters in the play.

In Shakespeare's plays the clown or the fool plays quite an important part. He makes his appearance even in serious tragedies. There is the drunken porter in *Macbeth*, and even that early blood-curdling horror, *Titus Andronicus* in which only two of the fourteen main characters are left alive at the end, has a clown, who is ultimately hanged. The 'clown' should be distinguished from the 'fool'. A 'clown' in Shakespeare's plays meant roughly a man who is unintentionally funny because of his ignorance, like Dogberry in *Much Ado About Nothing*, and the word has nothing to do with circus; the 'fool', on the other hand, is a professional jester at court or in a rich man's house, chosen mainly for his sharp wit. The best known 'fools' in Shakespeare are Touchstone and Feste; but there is a 'Fool; in *King Lear*, a tragic character and little more than a boy, who tries to out-jest his master's injuries and dies in his service.

The word 'Fool' was often used of a court-jester, quite an intelligent man who pretended to be half-witted or eccentric and under cover of his eccentricity shot the shafts of his acid wit on everybody, regardless of the rank or position of his victim ---- a role identical to that of Jaques in *As You Like It* while it was also used of a clown ---- of the type of Touchstone in the play ---- whose ancestor was the Vice of the morality plays and whose function was to provide mirth and horse-play for the audience. All serious dramatists ---- the classicists in particular ---- disliked any intermingling of tragedy and clowning. Sidney

outright condemned it. In the Fool here Shakespeare combined these two functions of the fool and by introducing him in this most tragic of tragedies showed what could be done with even such an apparatus if it could be properly handled. It was a tremendously difficult task, but the measure of genius lies in the power of tackling successfully the problems.

To the modern audience the 'Fool' seems an outlandish kind of person. But the figure of the 'Fool' was familiar to Shakespeare's original audience. As a stock character on the stage, he linked actors and audience, playing tricks on the persons in the play, and commenting directly (on the action) to the audience. But as the traditional court-jester, the Fool was a privileged person in the royal household who, as Jaques says in *As You Like It*, could 'blow on' whom he pleased ---- Fool, hold a privileged position: they are "as free as air, and blow on whom they please."<sup>(Stoll 281)</sup> *i.e.*, could comment with some freedom on the stupid behaviour of his betters. Touched too closely by his 'jests' Goneril indignantly calls Lear's Fool 'all-licens'd Fool' (*King Lear*; Liv.198) and also 'more knave than fool'. (*King Lear*; Liv.313) Indeed, Lear's threat to have the Fool whipped is equivalent to saying that the king has almost forgotten what is due to a fool. And it will be noted through the play that the Fool makes remarks, without the least hesitation, that no one else would have dared to make in the presence of the mighty king.

If we try to assess the position of the fool in the plays of Shakespeare it will be found that the two extremes of clowning were the rustic fool and the court-jester. All the varieties are mixtures of these two. Their task was, of course, the general one of making the company or the audience laugh, and more particularly, of keeping the dialogue going in the intervals of action. They supplied also, when necessary, both Song and Dance. Even Dull the constable joins the general breakdown at the end of *love's Labour's Lost*. In the exchange of conversation, their technique, their principle and expected contribution, was (consciously or unconsciously) to extract fun from words. Last but not the least, the best division of the professional comic persons *i.e.* clowns in Shakespeare's plays ---- at any rate, the best division technically ---- would be this:

(1) those who play with words; and

(2) those who are sufficiently masters of the English language to make fun out of it.

To the first group belong the professional Fools headed by Touchstone, with Feste, and such court-bred attendants as Moth ---- that 'tender juvenal'. To the same group though touching on the second, belong the men-servants, the roguish valets, like Speed, and Launce and Launcelot.

To the second group rustics like Costard, artisans like Bottom, and officials like Dogberry, Verges, and Dull belong and the amusement they offer cause is at their own expense. They are complacent, vain, and adorably stupid. There is nothing in Shakespeare more certainly the work of genius than the mottled nonsense, the complacent nonsense, the perfectly contented and ideal inanity which some of these characters have demonstrated.

Thus, there is no denial of the fact that clowns, fools, jesters are organically and intrinsically integrated to the plot of the Shakespearean plays in which they occur. Far from being decorative and superfluous, they constitute the very matrix of his plays. In the ultimate analysis these characters are minor in terms of their social positions and status, but their roles in Shakespeare's plays are not at all 'minor' in the true sense of the term. They are advisors to the major characters in the plays and they are advisors to the audience as well.

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## वृद्धांच्या समस्या व सामाजिक सुरक्षा

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### सारांश :

प्रत्येक सजीवाचा होणारा मृत्यू हे त्रिकालाबाधित सत्य आहे. मृत्यूएवढे भय मानवाला कदाचित दुसऱ्या कोणत्याच गोष्टीचे वाटत नसावे. मृत्युपासून दूर राहण्याच्या नादात मनुष्य चमत्कारिक वळणावर येऊन पोहचला आणि त्याला वृद्धत्वास तोंड द्यावे लागत आहे. या वृद्धत्वाचा प्रश्न इतर प्रगत राष्ट्रांप्रमाणे आपल्या देशातही गंभीर झाला आहे. आज राजकीय, सामाजिक, वैज्ञानिक, आर्थिक बदल आणि प्रगती त्मुनामीच्या लाटेपेक्षाही वेगाने झाली. या प्रगतीबरोबर राष्ट्र-राष्ट्रांमध्ये वृद्धाची, अतिवृद्धाची जबाबदारी त्यांची मुले सहजपणे नाकारतात, अशा ठिकाणी वृद्धपणा, अतिवृद्धपणा हा आक्राळविक्राळ स्वरूप धारण करत आहे. पूर्वी भारतातील कुटुंब पध्दती ही संयुक्त प्रकारची असल्यामुळे वृद्ध नागरीकाची समस्या ही अस्तीत्वात नव्हती. त्यांना आदराचे स्थान होते. वृद्ध माता-पित्यांचा सांभाळ करणे हे आपले कर्तव्य मानले जायचे. मात्र जेव्हा पासून संयुक्त कुटुंब पध्दतीचा न्हास होवुन विभक्त कुटुंब पध्दती अस्तित्वात आली, खऱ्या अर्थाने त्या वेळेपासुनच वृद्धांच्या समस्यांना सुरुवात झाली व वाढत्या औद्योगिकरण, नागरीकरण व आधुनिकीकरणबरोबरच त्या वाढतच गेल्या. घराची समस्या, जागेचा प्रश्न, शहरातील वाढता खर्च इ. कारणांमुळे आई-वडीलांना शहरात आणणे शक्य नसते. ते खेडयात राहतात. त्यामुळे खेडयातील आई-वडिलांकडे मुलांचे दुर्लक्ष होते. त्यामुळे ग्रामीण भागात सुध्दा वृद्धांच्या समस्या आढळुन येते. सर्वसाधारणपणे असे म्हटले जाते की, जेव्हा माणसाला वाटते की, आपण वृद्ध झालो. तेव्हा त्याला वृद्ध म्हणणे हा अर्थ योग्य नाही. शरीराच्या विविध घटकांची झीज झाली की वार्धक्य येते असा विचार आर्युवेदात मांडण्यात आला आहे. वार्धक्य शास्त्राचा अभ्यास करण्यासाठी १९५० पासून अनेक संघटना राष्ट्रीय आंतरराष्ट्रीय परिषदा भरविण्यात आल्या आहेत. जेष्ठ नागरीकांचे प्रश्न सोडविण्याची विशेष आवश्यकता भासत आहे. त्यामुळे शासनाने वृद्धांच्या कल्याणाकरीता विविध कायदे केले आहेत. सर्वसाधारण वयाच्या ६० वर्षांनंतर आयुष्याच्या शेवटच्या क्षणापर्यंतचा कालखंड म्हणजे वृद्धावस्था होय. या अवस्थेलाच बालपणाचा काल असेही संबोधल्या जाते. कारण या अवस्थेत व्यक्तीच्या शारिरीक क्षमते बरोबर बौद्धिक, शारिरीक, लैंगिक क्षमता हळूहळू लोप पावुन या वयातील व्यक्तींना इतरांच्या मदतीची गरज असते. ज्याप्रमाणे पूर्व बाल्य व शिशु अवस्थेत पालन पोषण करण्याची जबाबदारी आई-वडीलांची असते. त्याचप्रमाणे वृद्धापकाळात वृद्धांच्या आरोग्याची काळजी घेण्याची जबाबदारी त्यांच्या पाल्याची किंवा पाल्यांवर असते.

### प्रास्ताविक :

हेन्री आणि क्युमिंग यांच्या मते, 'जिवनातील महत्वपूर्ण तसेच पुर्णपणे उपयोगी आणि ज्याविषयी अभिलाषा असते अशा आरंभीच्या काळापासुन दुर जाणाऱ्या प्रक्रियेला वृद्धावस्था असे म्हणतात.' शारिरीक दृष्ट्या व्यक्ती परावलंबी व दुर्बल बनते. यावरून वृद्धांच्या समस्येला कोणत्या वर्षापासुन सुरुवात होईल हे स्पष्ट होत नाही. ते व्यक्तीच्या गत आयुष्यावर अवलंबुन असते. काही व्यक्तींना वृद्धत्व हे ४०-५०च्या दरम्यानच येते तर काहींना ते ६० वर्षांनंतर पाच-सहा वर्षांनी येऊ शकते. साधारणतः वृद्धांच्या समस्येला सुरुवात वयाच्या ६० वर्षापासुन होते. वृद्धांची समस्या ही आधुनिक काळातील एक सामाजिक समस्या आहे. वृद्धांचे अनेक प्रश्न निर्माण झाले आहेत. प्रत्येक व्यक्तीला या अवस्थेचा सामना करावा लागणार आहे. प्राचीन काळी वृद्धांची समस्या नव्हती. पण आधुनिक काळात मात्र ही समस्या निर्माण झालेली आढळते. ही समस्या अचानक निर्माण झाली नाही ही निर्माण होण्यास काही कारण कारणीभुत आहेत. जसे की, संयुक्त कुटुंब, ग्रामीण समुदायातील बदल, जाती व्यवस्थेचा न्हास, औद्योगिकरण आणि नागरीकरण, बदललेली सामाजिक मुल्य व्यवस्था, आणि नोकरी करणाऱ्या महिलांचे वाढते प्रमाण अशा या घटकांमुळे, कारणामुळे वृद्धांचे प्रश्न/समस्या निर्माण झाली आहे. आधुनिक काळात अशा प्रकारची विविध कारणे आढळुन येतात या कारणांचा परीणाम म्हणजेच वृद्धांची समस्या

होय. "या अवस्थेत शारिरीक क्षमता लोप पावत असल्या कारणाने कोणत्याही प्रकारचे शारिरीक श्रम करता येणे वृद्धांना अशक्य असते. शरीरांतर्गत कार्यरत असणाऱ्या विविध ग्रंथींच मंदावलेल्या असतात. या अवस्थेतील व्यक्तीची स्नायुंवर सुध्दा स्नायुची परिणामकारकता कमी होते. वृद्धीची संवेदन, श्रवण क्षमता, समायोजन क्षमता ही सुध्दा हळूहळू कमी झालेली असते. शरीरांतर्गत विविध प्रक्रिया लोप पावत असल्या कारणाने अनेकानां मानसिक, बौद्धिक समस्या निर्माण होतात. मुळातच रोगप्रतिकार शक्ती कमी होऊन या अवस्थेतील लोकांना विविध प्रकारचे आजार जडण्याची शक्यता असते. योग्य देखभाल करणे आवश्यक असते. "प्राचीन काळी कुटुंब संस्थेमध्ये कुटुंबाकडून सर्व संदस्यांच्या सर्व गरजा कुटुंबामध्येच भागविल्या जायच्या. प्रत्येकाचे उत्तरदायित्व एक दुसऱ्यावर असायचे कोणतीही सेवा, आपुलकी, स्नेहापोटी मिळत असायच्या. परंतु आधुनिकीकरण व नागरीकरणाने संयुक्त कुटुंबाचा न्हास होऊन विभक्त कुटुंब वृद्धांच्या अनेक समस्या निर्माण झाल्या व त्या समस्या सोडविण्यासाठी वृद्धाश्रमाची गरज भासू लागली. ज्यांच्याकडे निवृत्ती उपदान, मालमत्ता किंवा बचत नाही अशा बहुसंख्येने असलेल्या वयस्कर लोकांना वार्धक्य निवृत्ती उपदान योजना हा सार्वजनिक मदतीचा एकमेव मार्ग खुला आहे. सर्वप्रथम उत्तर प्रदेशाने १९५७ मध्ये ही योजना राबविली आहे. या निवृत्ती उपदानाचा मासिक दर ४५ रूपयांपासून ते १०० रूपयांपर्यंत वेगवेगळा आहे. गुजरात आणि तामिळनाडू

वगळता सर्व राज्यामध्ये केवळ निर्धन निराधार वृद्धांना ही निवृत्ती उपदान मिळू शकते. दारीद्रय रेषेच्याही बऱ्याच प्रमाणात खाली जाणारी अशी ही तुटपुंजी रक्कम असली तरी निर्धनाच्या दृष्टीने ती तिकडीच्या क्षणी मिळणारी मदत ठरते. या ही योजनेत पुर्वापार चालत आलेला भ्रष्टाचार अवलंबला असला तरी पण तो नाहीसा करण्याचे प्रयत्न आवश्यक असतात. पण तो नाहीसा करण्याचे प्रयत्न आवश्यक आहेत. निवृत्ती उपदानाच्या रकमा येण्यात उशीर झाल्यास पंचायतीच्या इतर निधीतून पैसा देण्यात यावा व उशीर करणाऱ्यांवर शिक्षेची अशी कारवाई करावी की तिच्यामुळे इतरांवर वचक बसेल. ग्रामसभा आणि नागरिक समित्या यांना सहभागी करून घेतल्यास निवड व निवृत्ती उपदान वाटप यामध्ये लपवा छपवीस वाव राहणार नाही. लायक असणाऱ्या सर्व निर्धन वृद्धांना वार्धक्य निवृत्ती उपदान मिळण्यासाठी एक मोहिम आखून त्यात ग्राम पंचायती, युवकांचे व महिलांचे गट साक्षरतेचा प्रसार करणारे या सर्वांना सामील करून घेता येईल.

#### आरोग्यरक्षणाच्या सोयी :

जिल्हामधील सध्याच्या सरकारी व बिनसरकारी दवाखान्यांमध्ये व रुग्णालयमध्ये जेष्ठ नागरिकांच्या आरोग्यविषयक गरजा भागविण्यासाठी वृद्धापकाळातील आजारांसाठी बाह्यरूपण विभाग तत्काळ उपचारार्थ (इमर्जन्सी) आणि खास वॉर्ड सुरू करण्यात येतील. वयस्कर व्यक्तींना मुख्यतः संधिवात, दृष्टी कमजोर होणे, बहिरेपणा येणे, द्रवसन संस्थेचे व हृदयाचे आजार, मधुमेह, रक्तदाब, बद्धकोष्ठ इत्यादी त्रास असतात. बऱ्यास जणांना अशा आजारांमुळे चालता फिरता येत नाही. फिरत्या पौष्टिक (विकृतिचिकित्सा) प्रयोग शाळा सुरू करून त्यात भौतिकोपचार (फिजिओथेरेपी) जखमांची मलमपट्टी रक्तदाब, रक्तशर्करा तपासणे या इतर सोयी देवल्यास जेष्ठ नागरिकांच्या काही गरजा तरी निश्चितच पूर्ण होऊ शकतील. या खेरीज आपल्याला वृद्ध नागरिकांना विकलांग करण्याच्या नेहमीच्या आजारांवर पध्दतशीर उपचार (उदा. निदान व उपचार) मोतीबिंदू कान, दात, संधिवात यातिल शिबिरे इत्यादी आयोजित करता येतील.

#### आत्मसन्मान, मनोबल आणि आधार सेवेसंबंधी उपाय :

खरे म्हणजे वयस्कर मंडळीकडे भरपूर अनुभव आणि त्या अनुभवाने आलेले इतरही अनेक गुण, कसब, क्षमता त्यांच्याकडे असते. या सर्वांचा फायदा आपल्याला सामाजिक दृष्ट्या उपयोगी कामांसाठी सहज करून घेता येईल. शिकवण्या घेणे, प्रौढ साक्षरतेचे वर्ग चालविणे, रुग्णालयातील रोगणांना भेटणे, रेड क्रॉसचे मनोबल वाढण्यासाठी बरीच मदत होईल.

#### वृद्धांना वृद्धावस्थेत येणाऱ्या समस्या:

वृद्धत्व ही जैविक समस्या असली, तरी वृद्धत्वाची समस्या आधुनिक, सामाजिक असावी. मागील शतकात वृद्धत्वाचा प्रश्न उद्भवलेला नसावा. परंतु विसाव्या शतकात मात्र वृद्धत्वाचा प्रश्न चिंतनीय झाला असे वाटते. वृद्धांचा प्रश्न आणि त्यांसंबंधीची उपाययोजना याकडे लोकांचे लक्ष वेधले. वृद्धांचा प्रश्न सामाजिक झाल्यामुळे विविध समस्या उद्भवलेल्या आहेत. आज दैनंदिन आयुष्य बदलून गेले आहे. लोकांचा परस्परशीर्षी संपर्क कमी झाल्यामुळे वेळ जात

नाही. रिकामा वेळ वयोवृद्ध लोकांना सतावत असतो. समाजात आपली प्रतिष्ठा टिकून राहावी ही त्यांची धारणा अधिक मजबूत होते. वृद्धांकडे पाहण्याचा समाजाचा दृष्टिकोन बदलतो, याचा त्रास वृद्धांना होतो. समाजाला आपली गरज आता राहिली नाही अशी भावना निर्माण होऊन वाईट वाटते. आजच्या या यंत्रयुगात पैशाला व कमवत्या घटकाला महत्व असल्यामुळे वृद्ध म्हणजे जुने झालेला यंत्र अशी स्थिती होऊन बसते. विविध समस्यांनी जर्जर झालेल्या भारतीय समाजात वृद्धांची समस्या नव्याने निर्माण झाल्यामुळे अनेक प्रकारच्या समस्यांची गुतांगुत वाढून त्या सर्वांची एक दिर्घ अशी शृंखला तयार झाली आहे. या समस्यांचे विविध प्रकारात वर्गीकरण केले आहे, ते खालीलप्रमाणे १) कौटुंबिक समस्या २) शारिरीक समस्या ३) मानसिक समस्या ४) आर्थिक समस्या ५) सामाजिक समस्या

#### १) कौटुंबिक समस्या :

कौटुंबिक समस्या निर्माण होण्याचे पहिले कारण म्हणजे वृद्धापकाळात पूर्ण वेळ कुटुंबात राहिल्याने दैनंदिन घडामोडी व्यतिरिक्त लक्ष देण्याची प्रवृत्ती वाढते व त्यातून लहान सहान गोष्टीत वाद निर्माण होतो. अशाने कौटुंबिक वातावरणात वृद्ध नकोसे होतात व आपोआपच कुटुंबात कुणी आपल्याला फारसे महत्व देत नाही अशी भावना वाढीस लागते. उतारवयात मनुष्याला सामाजिक व कौटुंबिक सुरक्षेची गरज अधिक तीव्र प्रमाणात होऊ लागते. काळानुसार व्यक्तीला निरूपयोगी व्यक्तीसारखी वागणूक दिली जाते. त्यांना घरातील मंडळीकडून दुर्लक्षित केले जाते. जेष्ठ लोक हे कुटुंबातील तरुणांवर किंवा कर्त्या मंडळीवर अवलंबून असतात. त्यांच्या आवश्यकतांना कमी महत्व दिल्या जाते. व्यक्तीची कार्यक्षमता कमी होत त्यांच्या आजार वृद्ध लोक आपले विचार, भावना आणि मते कुटुंबात व्यक्त करू शकत नाहीत. त्यांच्या विचारांचे घरातील व्यक्तींना महत्व वाटत नाही. ज्यामुळे वृद्धांना कुटुंबापासून खुप दुर गेल्यासारखे वाटते त्याच बरोबर अडगळीतील वस्तु ज्याप्रमाणे फेकून दिल्या जाते त्याप्रमाणे त्यांना वृद्धाश्रमाची वाट दाखविली जाते.

#### २) आर्थिक समस्या:

आजच्या युगात आर्थिक अडचण ही वार्धक्यातील एक मोठी समस्या आहे. वृद्धावस्थेत व्यक्तीची कार्य क्षमता कमी होते. व्यक्ती आर्थिक उत्पादनात सहभाग घेऊ शकत नाही. शासकीय नियमाप्रमाणे सरकारी व निमसरकारी संस्थेत कार्य करणाऱ्या व्यक्ती ह्या निवृत्त झाल्यामुळे त्यांच्या आर्थिकतेत बदल होतो. निवृत्ती वेतनात कुटुंबाचा खर्च भागत नाही. या काळात औषधाचा खर्च वाढतो. त्यामुळे कमी उत्पन्नात खर्च भागविणे शक्य होत नाही. औषधांवर त्यांचा जास्त खर्च होतो व त्यासाठी त्यांना आर्थिक कारणासाठी दुसऱ्यावर अवलंबून राहावे लागते. त्यांना निवृत्ती वेतन, बँकेतील बचत, भविष्यकालीन निर्वाह निधीवर अवलंबून राहावे लागते. तथापि त्यांना शासकीय किंवा इतर कोणतीही नोकरी नसते. अशा अकुशल श्रमिकाची स्थिती अत्यंत दयनीय असते. वृद्धावस्थेसाठी ते कोणतीही तरतूद करू शकत नाहीत. या परिस्थितीत निराश्रित वृद्धांना भिक्षा मागणे, आत्महत्या किंवा वृद्धाश्रम यासारखे पर्याय त्यांच्यापुढे

उभे राहतात. अशाप्रकारचे पर्याय वृद्धापुढे उभे राहिल्यामुळे त्यांच्या मनामध्ये संकोचाची भावना निर्माण होते. आर्थिक विवंचना एक प्रकारची परावलंबित्वाची भावना निर्माण करून देत असल्यामुळे वृद्ध व्यक्ती दुःखी, कष्टी होतात.

### ३) सामाजिक समस्या:

'जुनं ते सोनं' हे खरे असले तरी ही त्यांना समाजामध्ये समायोजन करण्यात अनेक समस्या येतात. त्यांच्या शारीरिक क्षमतेत झालेल्या ऱ्हासामुळे त्यांच्यात न्युनगंडाची भावना निर्माण होते. त्यांच्या दर्जा व भूमिका बदलल्यामुळे पुर्वीच्या मान-सन्मान मिळत नाही. ते त्यांच्या मित्र-मंडळीपासून अलिप्त राहतात. (दुरावतात). तरुण मंडळी त्यांच्याशी फटकून वागतात. त्यांच्यामध्ये तरुण व वृद्ध असे संघर्ष उद्भवतात. त्यांच्या मनात सामाजिक असुरक्षिततेची भावना निर्माण होते. त्याचबरोबर त्यांच्या सामाजिक समायोजनामुळे म्हणजेच वृद्धावस्थेमुळे निरश्रितांची समस्या, आत्महत्या सारख्या समस्या वाढतात. एकटेपणा, अपमानास्पद वागणुक, कुटुंबाकडून उपेक्षित आयुष्य त्यांना जगावे लागते. त्यांच्या या समस्या ओळखून शासनाने कायद्याची तरतुदी केल्या आहेत. राज्यघटनेच्या कलम ४१ नुसार राज्य व केंद्रशासित राज्यांनी वयोवृद्ध आजारी व विकलांग नागरीकांसाठी मदत पुरविण्याची तरतुद केली. तसेच कायद्याची मदत घेऊन वृद्धाश्रमे, वृद्धांसाठी दीन केंद्रं, गृहसेवा व्यवस्था निवृत्ती वेतन, भविष्य निर्वाह निधी, वृद्धापकालीन निवृत्ती वेतन या सारख्या तरतुदी करण्यात आल्या आहेत. वृद्धत्वाच्या परिणामातून व्यक्ती व्यवसायापासून, नोकरीपासून दुरावते व त्यामुळे आर्थिक नुकसान होते. त्याचा परिणाम म्हणजे व्यक्तींच्या दर्जांमध्ये व भूमिकेमध्ये बदल होतो. वृद्धावस्थापूर्वीचा श्रेष्ठ प्रकारचा दर्जा असला तर वृद्धापकाळात दर्जा निम्न होतो. प्रथम श्रेणी अधिकारी असलेली व्यक्ती सेवानिवृत्तीनंतर सामान्य व्यक्तीप्रमाणे जीवन जगू लागते. अधिकारावर असतांना दर्जा व भूमिका आणि नंतरचा दर्जा व भूमिकेत अंतर असल्याकारणाने व्यक्ति जीवनात एक प्रकारचे अंतर निर्माण होते. ह्या सर्व समस्यांमधून वृद्धांना जावे लागते आपण एकीकडे म्हणतो की, व्यक्ती हा वृद्ध झाल्यावर लहान मुलांसारखा हट्टी होतो. पण दुसरीकडे कुटुंब व समाज त्यांचे समायोजन करून घेत नाही त्यांना पुर्णपणे दुर्लक्षित करतात. आजच्या आधुनिकतेच्या काळामध्ये जेष्ठ नागरीकांना कौटुंबिक व सामाजिक समस्यांना सामोरे जावे लागते तसेच कुटुंबातील वृद्धांना कुटुंबांमध्ये योग्य स्थान न दिल्यामुळे वृद्धांच्या समस्या निर्माण होत आहेत. व वृद्धांच्या सामाजिक व आर्थिक दर्जा खालावत आहे.

### ४) शारिरीक समस्या :

उतारवयात शरीराची दुर्बलता वाढत जाते व सतत थकवा आल्यासारखे जाणवते. रोगप्रतिकारक शक्ती कमी झालेली असते. डोळे यांची व कानाची क्षमता कमी होवू लागते. शरीराला थरकाप सुटतो. एकाच जागी बसून किंवा निजून राहिल्याने पचनशक्ती बिघडते. यासाठी नियमित, ठराविक वेळापत्रक व दैनंदिन कार्यक्रम यांचा योग्य मेळ घालावा लागतो. मानवी शरीरातील रोगप्रतिबंधक क्षमतेचा ऱ्हास झाला

म्हणजे वृद्धत्व येते. रोग प्रतिबंधक क्षमता प्रामुख्याने ट्वेतरक्तपेशींवर अवलंबून असते. त्यामुळे ट्वेतरक्तपेशींना वाढविणे व त्यांचे रक्षण करणे महत्वाचे असते. वृद्धावस्था जैविक प्रक्रिया असल्याकारणाने या अवस्थेचे मानवी शरीरावर असंख्य परिणाम दिसून येतात. हे परिणाम अंतर्गत तसेच बाह्य स्वरूपाचे असतात. बाह्य शरीराबद्दल सहज स्पष्ट होतात. केस पांढरे होणे चेहऱ्यावर व त्वचेवर सुरकुत्या पडणे, नाकाचा आकार बदलणे, चेहऱ्यात बदल होणे, दात पडणे, खांदे खाली झुकणे, नखानां विकृती येणे हाता-पायांस कंठ सुटणे, इत्यादी बदलांचा समावेश होतो. अंतर्गत बदलात शरीरातील अस्थी टिसूळ होणे, काही पेशींचे विभाजन थांबणे, रोगप्रतिबंधक क्षमतेचा ऱ्हास होणे, मनोनियंत्रणाचा अभाव, हृदय, किडनी, पचनसंस्थेसंबंधी समस्या निर्माण होणे इत्यादी समस्यांचा अंतर्भाव होतो. वृद्धावस्थेमध्ये मलमूत्र विसर्जनावर सुद्धा परिणाम होतो. पचनसंस्था संतुलित कार्य करित नाही. रक्तदाब कमी-जास्त होतो, दृष्टिदोष, श्रवणदोष वाकृदोष निर्माण होतात. व्यक्तीच्या लैंगिक संबंधावर परिणाम होतो. अतिसंवेदनक्षमता, भांडखोरपणा, अतिपरालंबित्व येते. काही व्यक्ती काल्पनिक आजार या कल्पनेने ग्रासलेल्या असतात. त्यातून ते इतरांची सहानुभूती मिळविण्याचा प्रयत्न करतात. या सर्व स्वास्थविषयक समस्यांमुळे वृद्धांची कार्यशक्ती, अर्थाजनशक्ती कमी होते आणि समाजजीवनातील सहभागवर परिणाम होतो. त्याचप्रमाणे काही लोक तर आंधळेपणा, बहिरेपणा व अपंगत्वाने ग्रासलेले असतात. अशाप्रकारे व्यक्तींच्या जीवनाला कोठेतरी अंत वा शेवट असतो. वाढत्या वयाबरोबर शरीर खगंत जात असते. शरीराच्या वरीलप्रमाणे अनेक तक्रारी सुरू होत असतात. खरे पाहता शतायुषी व्यक्ती शारिरीक दृष्ट्या दुर्बल असतातच. अशा व्यक्तींना वार्धक्य आलेले असते. अशाप्रकारचे शतायुषी आयुष्य लाभण्यासाठी शारिरीक समस्यांचा विचार करत बसण्यापेक्षा त्यावर उपायोजना करून असे चांगल्याप्रकारचे आचरण वृद्धांनी केले पाहिजे. उदाहरणार्थ वृद्ध व्यक्तींनी ठराविक वेळी उठणे, नीटनेटके कपडे घालणे, घरच्या कामात यथाशक्ती मदत करणे, फिरावयास जाणे इत्यादी दैनंदिन व्यवहार चालू ठेवणे आवश्यक असते. तसे न केल्यास आयुष्य कंटाळवाणे होते. शारिरीक व मानसिक शक्तींचा ऱ्हास लवकर होतो. सर्वात महत्वाचा मुद्दा म्हणजे वयावृद्ध व्यक्तींना शांत झोप अजिबातच लागत नाही. ही फार मोठी शारिरीक समस्या आहे. पण त्यांचा संबंध मनाशी आहे. चांगली झोप ही सुदृढ आरोग्याची गुरुकिल्ली आहे. पुरेशी झोप न झाल्यास आरोग्याच्या अनेक तक्रारी उद्भवतात. थकवा, चिडचिडेपणा, डोळे दुखणे, डोळे यांची आग होणे, अस्वस्थपणा कामात लक्ष न लागणे इत्यादी परिणाम दिसून येतात. उतारवयात झोप कमी होते कारण शारिरीक श्रम, स्नायूंच्या हालचाली कमी होतात. अशाप्रकारे विविध शारिरीक समस्यांवर औषधांचाही योग्य वापर केला पाहिजे तर अपेक्षित परिणाम दिसून येतात. वयपरतवे क्षीण होत जाणारे शरीर, निर्माण झालेल्या व्याधी यामुळे सारे काही बदलते. कधी इच्छा असूनही २-४ किलोमीटर फिरता येत नाही, काम करावेसे वाटूनही शक्ती पुरेशी नसल्याने

करता येत नाही. दवाखाना, औषधे यांचा कंटाळा येतो. हवी तशी शारिरीक स्वच्छता ठेवण्यासाठीही उटबस करता येत नसेल तर खुप वाईट वाटते. आपल्यामुळे घरातील इतरांना खूप त्रास होतो. या जाणिवेने मन दुःखी होते. अशा प्रकारच्या विविध शारिरीक समस्यांमुळे आज वृद्धांच्या समस्या असंख्य रूपाने तोंड वर काढत आहेत, याचा विचार करणे आवश्यक आहे. अशा या विविध समस्यांमुळे आज वृद्ध व्यक्तींना वृद्धाश्रमाकडे वाटचाल करावी लागत आहे.

#### सामाजिक सुरक्षा आणि वृद्धांच्या समस्या :

सेवानिवृत्ती, आरोग्य, परावलंबित्व आणि वृद्धावस्थेतील जुळवणुण या वृद्धांच्या प्रमुख समस्यांच्या निराकरणासाठी उपाययोजना म्हणजे वृद्धांना सामाजिक सुरक्षा प्राप्त करून देणे होय. सुरक्षा ही मानसिक भावना आहे. ती मनाची एक समाधान प्रवृत्ती आहे. प्रत्येक व्यक्तीला आपल्या घरात, कुटुंबात सुरक्षित वाटणे स्वाभाविक असते. कारण कुटुंबातील इतर सदस्यांचे प्रेम त्यांचा सहवास, काळजी घेणे त्याला हवे -हवे से वाटते. कुटुंबातील प्रेमळ, तणावरहीत वातावरणात व्यक्ती स्वतःला अधिक सुरक्षित मानते ही एक वस्तुनिष्ठ घटना आहे. म्हणून सुरक्षा ही एक व्यक्तीगत भावना आहे. वृद्धापकाळात या कौटुंबिकच नव्हे तर सामाजिक सुरक्षेची सुद्धा अत्यंत आवश्यक वाटू लागते. विशिष्ट स्वरूपाच्या आकस्मिक घटना, अपघात, आरोग्य या विषयक संकटे यांच्यापासून वृद्ध व्यक्तीला योग्य संघटने द्वारे समाजाने मिळवून दिलेली सुरक्षितता म्हणजे सामाजिक सुरक्षा होय. वृद्धांना गरज पडेल तेव्हा मदत करण्याची व्यवस्था समाजाने निर्माण करणे म्हणजे सामाजिक सुरक्षेची व्यवस्था निर्माण करणे होय.

#### वृद्धासाठी सामाजिक सुरक्षा :

१८४० मध्ये बंगलोर येथे 'The friend in Need Society' ची स्थापना ख्रिश्चन मिशनऱ्यांनी केली. १८६५ मध्ये पूणे येथे 'डेव्हिस ससून वृद्धाश्रम' तर १८८५ मध्ये कोलकत्ता येथे Little Sister of the Poor, नागपूर येथे १८९० मध्ये होम फॉर एज्ज्ड अँड हँडीकॅपड (Home for Aged and Handicaped) तर १९२४ मध्ये सुरत ला अशक्त व्यक्तींसाठी आश्रम इत्यादी संस्था मार्फत ख्रिश्चन मिशनऱ्यांनी वृद्ध, अपंग, आजारी, अनाथ व्यक्तींची सेवा करण्याचे व्रत घेतले. वृद्धांना मदत करण्यासाठी विविध सेवाभावी संस्थाही पुढे आल्या मातृसेवा संघाच्या वतीने १९६१ मध्ये उमरेड रोडवर पंचवटी हे वृद्धाश्रम सुरू करण्यात आले. वरोरा येथे आनंदवनात बाबा आमटे यांच्या मार्गदर्शनाखाली उत्तरायण हे वृद्धाश्रम स्थापन झाले आहे. भारतातील वृद्धांची समस्या लक्षात घेवून शासनानेही कायद्याची तरतुद केली आहे. भारतीय राज्यघटनेच्या कलम ४१ नुसार राज्य आणि विकलांग नागरिकांना मदत पूर्णविषयाची तरतुद केली आहे. १९५६ मध्ये पास झालेल्या Hardy Adoption and Maintance Act नुसार प्रत्येक व्यक्तीने आपल्या वृद्ध अथवा आजारी आई-वडीलांची घ्यावी असे बंधन घातले आहे. १९७३ मध्ये 'कोड ऑफ क्रिमिनल प्रोसिजर' च्या कलम १२५ प्रमाणे सर्व मिळविल्या आणि पुरेशी प्राप्ती असणाऱ्या व्यक्तीवर आपल्या आई-वडिलांच्या पोषण करण्याची जबाबदारी टाकण्यात आली आहे. या कायदानुसार

वृद्धांना सामाजिक सुरक्षा देण्याच्या दृष्टीने वृद्धाश्रम, वृद्धासाठी दिनकेंद्रे, गृहसेवा, व्यवस्था, निवृत्ती वेतन, भविष्यकालिन निर्वाह निधी, वृद्धापकाळी निवृत्तीवेतन इत्यादी अनेक उपक्रम सुरू केले आहे.

#### वृद्धांसाठी असलेल्या सवलती :

- १) सामान्य नागरीकांसाठी 'वृद्धापकाल अनुदान' योजना
- २) अन्नपुराणा योजना ३) प्राप्तीकर सवलत ४) प्रवास ५) विमानपत्र ६) रेल्वे टिकिट आरक्षण ७) टेलिफोन कनेक्शन

#### संशोधनाचे उद्देश :

- १) वृद्धांच्या समस्यांविषयी जाणून घेणे.
- २) वृद्धांच्या सामाजिक सुरक्षेची स्थितीची माहिती घेणे.

#### संशोधन पध्दती :

'वृद्धांच्या समस्या व सामाजिक सुरक्षा.' या विषयावर संशोधन करण्याकरीता वर्धा जिल्हातील आर्वी तालुक्यातील निवडक गावाची अध्ययन क्षेत्र म्हणून निवड करण्यात आली. संभाव्य नमूना निवड पध्दतीचा वापर करून त्यात साधा यादृच्छिक नमूना मधील लॉटरी तंत्राचा वापर करून ३० उतरदात्यांची संशोधनाकरीता निवड करण्यात आली. तथ्य संकलन करण्याकरीता मूलाखत अनुसूची आणि दुय्यम तथ्य संकलन (इंटरनेट, मासिक, संदर्भ ग्रंथ) यांचा वापर करण्यात आला.

#### निष्कर्ष :

संशोधकाने प्रस्तुत संशोधनामध्ये 'वृद्धांच्या समस्या व सामाजिक सुरक्षा.' या विषयावर संशोधन केले असता संशोधकाच्या असे लक्षात आले की, वृद्धांकडे पाहण्याचा समाजाचा दृष्टिकोन नकारात्मक आहे. तसेच आज वृद्धांची कौटुंबिक, शारिरीक, सामाजिक व आर्थिक परिस्थिती खालावलेली आहे. असे लक्षात येते.

एकूण ३० वृद्धांपैकी कुटुंब प्रकार विचारला असता विभक्त कुटुंबात राहणाऱ्या वृद्धांची वारंवारिता २३ असून त्यांचे शेकडा प्रमाण ७५.०० टक्के आहे. आणि पूर्वीच्या काळी वृद्ध संयुक्त कुटुंबात राहत असल्यामुळे 'वृद्धांचे शारिरीक, सामाजिक व आर्थिक समायोजन कुटुंबात होत असल्यामुळे समस्या जानवत नव्हत्या. आज ती परिस्थिती समाजात दिसत नाही. त्यामुळे वृद्धांना समस्या निर्माण होतांना दिसतात.

वरील विवेचनावरून असे स्पष्ट होते की, वृद्धांच्या समस्या दूर करण्यासाठी शासनाने वृद्धांना सामाजिक सुरक्षा प्रदान करण्याचे अनेक उपाय योजले आहेत परंतु ते पुरेशे नाहीत. कुटुंब आणि समाज यांचीही महत्वाची भूमिका आहे. घरातील वृद्ध म्हणजे कचऱ्यात टाकण्याची वस्तु नसून खुप काही शिकण्याचे माध्यम आहे. हे समजून त्यांचा सम्मान त्यांना मिळावा असे प्रयत्न केले पाहिजे तेव्हाच वृद्धांची समस्या तिर होण्याआधी त्यावर निर्बंध लावता येईल कारण सर्वच समस्यांवर कायदा हा उपाय होवू शकत नाही.

#### संदर्भ ग्रंथ सुची :

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## जुआन चीत्कार : एक विश्लेषण

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### सारांश:

डॉ. यशोदानाथ झाक जन्म मधुबनी जिलाक ग्रामरत्न सरिसब-पाही स्थित पलिवार महिषी मूलक वत्सगोत्रीय श्रोत्रिय ब्राह्मण पण्डित धरानाथ झाक प्रपौत्र, सुकवि पण्डित गणनाथ झाक पौत्र, कवि पण्डित आनन्दनाथ झाक पुत्रक रूपमे छओ जून 1944 ई. में भेल छलनि । यशोदा बाबूक: जन्म ओहि परिवारमे भेल छलनि जे 'झा परिवार' मिथिला के कहए, देशसे बाहर विदेशोमे अपन विद्वताक हेतु पूजित-सम्मानित होइत रहैत छल, देश-विदेशकेर विश्वविद्यालयमे बेर-बेर एहि परिवारक चर्चा होइत रहैत छल। ओहि परिवारक चर्चा करैत डॉ. जगदीश मिश्र लिखने छथि- “ कवि डॉ. यशोदानाथ झाजीक पितामह पाँच भाइ । पाँचो एकसँ बढ़ि एक सरस्वतीक उपासक। केओ जँ पठन-पाठन ओ लेखनमे अपन कीर्ति-ध्वज फहरीने तँ केओ तान्त्रिक साधनाक उच्चतम शिखरपर समासीन। ओ विद्या-मन्दिर, साधना-केन्द्र विख्यात छल, दर्शनीय छल ओ छल प्रणम्य । “1 ओतहि राष्ट्रपति पुरस्कारसँ सम्मानित संस्कृत साहित्यक निविष्ट विद्वान् आचार्य रामजी ठाकुर विवेच्य साहित्यकारक प्रतिएँ अपन उद्गार व्यक्त करैत लिखल अछि - “ डॉ. यशोदानाथ झा प्राक्तन प्रतिभाक धनी छथिए, संगहिँ हुनकामे देवता-प्रसाद-लब्ध प्रतिभाक दर्शन सेहो देखल जाइछ । हिनक अनेक गद्यात्मक काव्य-रचना प्रकाशमे आबि चुकल अछि, जाहिमे हिनक विलक्षण प्रतिभा परिस्फुरित भेल अछि । “2

एतावता, मिथिलाक सिद्धपीठ पाहीटोलक सिद्धस्थल 'झा परिवार' क वैदुष्य परम्परामे माँजल यशोदानाथ झा अपन साहित्यिक सिद्धहस्तताक कारणे सम्पूर्ण भाषा साहित्यमध्य अपन पृथक् अस्तित्व लए पाठकक समक्ष अबैत छथि ।

### परिचय:

जुआन चीत्कार हिनक पहिल कथा संग्रह थिक। एकर प्रकाशन 2005 ई.मे भेल। एछि संग्रहमे विभिन्न विषयपर कुल 8 टा कथा संगृहीत अछि । अपने लोकनिसँ निवेदन जे 'चीत्कार' अकानबाक प्रयास कयल जाए। कतहु कामक चीत्कार वर्णगोचर होयत, तँ कतहु नाम जन्य चीत्कार । कतहु 'निर्दोष अपराधी'क चीत्कार सुनब, तै कतहु प्रजातन्त्रक चीत्कार। 'जेसन' ओ प्रतिमान'क तँ ई युगे थीक,

एहिमे नैतिकताक नवीन परिभाषा मद्रैत चीत्कार यदि सुनी, तँ आश्चर्य कोन ? कहबाक तात्पर्य जे सम्पूर्ण परिवेशे चीत्कारमय बुझि पड़त । कूपडिमे बखन भाइ घोराएल अछि, तँ हाहाकार-चीत्कार सुनाई पड़त। गुल विद्या ओ प्रकाशन तीन देखा, जुआन चीत्कार 'कथा सबके पढ़ि जगदीश मिश्रजीक एकटा कविताक किछु पाँती जगदीश मिश्रजीक स्मरण आयल-

“अतृप्त पिपाशक विवशता ।

निर्मित करैछ हीनताक ग्रन्थि

जाहिसँ हम ओ अहाँ आ ।

अहाँ सन सन असंख्य विवश लोक

ग्रसित अछि, पीडित अछि ।

तँ अतृप्तिक चरम परिणति ओ

विस्फोट आइ वर्ण्य अछि, सम्वेद्य अछि। ”3

ई तीनु कथा मूलतः दाम्पत्य-असफलता कथा वा अतृप्त काम-कथा थिक ।

एक बल्व : प्रकाशक तीन रेखा' शीर्षक कथाक नायिका पुष्पा पति-परित्यक्ता अछि, ओकर पति विक्षिप्त छैक तथा ओकरा 'बहिन' बुझैत छैक आ दोसर दिस जकरा यथार्थ बहिन बुझबाक चाहिएक से ओकरा किछु भिन्ने बुझैत छैक। तँ पुष्पाक तै सहजहिँ जे ओकर भाए विनोदहुक दाम्पत्य असफले छैक। पुष्पाजें पढलि-लिखलि बी.ए. पास अछि तँ अपन असफल दाम्पत्यक विरोधमे स्वर मुखरित

करितहुँ कोनो साहसिक डेग उठा नहि पबैए । विनोदक पत्नीक पत्र जखन पुष्पाक प्राप्त होइत छैक तँ स्थिति विस्फोटक भए उठैछ । विस्फोटक यथार्थकै कथाकार बड़ चतुरतासँ आदर्शोन्मुख करैत छथि । अन्ततः पुष्पा विनोदके पत्र द्वारा अनुरोध करैत छैक पत्नीक मोनक सन्देहके मिथ्या प्रमाणित करबाक लेल, पत्नीसँ प्रेम करबाक लेल । कथाकार पुष्पाक हृदयमे चलैत अन्तः संघर्षक यथार्थ चित्रण कए एकटा विलक्षण नारी चरित्रक आदर्शोन्मुख चित्र अंकित कएल अछि । कथा रोचक अछि

प्रतिमान' शीर्षक कथा जहिआक थिक तहिआ कथाकार ए.जी. ऑफिसमे जीविकापन्न छलाह ओ ते अभाव-अभियोगक कथा बड़ स्वाभाविकरूपे कहल अछि। एहिमे कथाकारक रागात्मक अनुभूति बड़ सहज रूपे अभिव्यक्त भेल अछि। पात्रक माध्यमे रचनाकार स्वयं जिवैत छथि मरैत छथि आ दुःख-सुख भोगैत छथि। एहि कथामे 'नौकरी पेशा' निम्नमध्यवर्गक अभाव-अभियोगक यथातथ्य चित्र अंकित भेल अछि। कथानायक चञ्चलक पएर पर खसल आनक बटुआ ओकर हृदयमे परस्पर विरोधी विचारक द्रन्द्र उत्पन्न कए दैछ। अन्तः संघर्षक बड़ मार्मिक चित्र अंकित भेल अछि। एहि कथामे अभाव, दैन्य, भूख ओ विवशता आदि अति यथार्थक समक्ष आदर्श हारि मानि लैछ आ ओ बटुआ चञ्चलक जेबिमे पहौंच जाइछ। कथामं कौतूहल अन्त धरि बनल रहेछ।

असफल दाम्पत्यक कारणे विवाहेतर शारीरिक सम्पर्कक कथा थिक 'गुलबिया'। निम्नवर्गक ओ अशिक्षिता रहितहुँ गुलबियामे एतेक दायित्व बांध छैक जे ओ बूढ़ बापके छोड़ि सासुर नहि जाए चाहैए आ ओकर स्वामीके घरजमैआ बनब स्वीकार नहि छैक। गुलबियाक बापक पुश्तैनी डीहके छोड़ि बेटीक सासुर जाए रहब अपमानजनक बूझि पदैंत छलैक। परिस्थितिक इएह विरोधाभास गुलबियाके भरल जुआनीमे परित्यक्ताक जीवन बितएबा लेल विवश कए दैत छैक। सुन्दरक बेरि-बेरिक आह्वानक अछैतहुँ ओ अपन शीलक रक्षा करैत रहैए। किन्तु पिता द्वारा आहूत ओकर स्वामी जखन गुलबियाक उपेक्षा कए चलि दैछ तथा पतिहिक मूँहें ओकरा इहो ज्ञात होइत छैक जे ओ दोसर विवाह कए लेने छैक तँ ओकर नारीत्व आहूत भए उठैछ। फलतः ओकर अन्तरमे अपमान, ईर्ष्या ओ प्रतिशोध आदिक भावतरङ्ग हिलकोर लेआए लगैछ। गुलबियाक भावनाक घात-प्रतिघातक बड़ यथार्थ ओ आह्लादक चित्र अंकित भेल अछि। एहि कथामे गुलबियाक भावनाक विस्फोट होइत छैक सुन्दरक प्रतिएँ कहल गेल ओकर एहि वाक्यसँ 'चल, कतऽ चलइ छे ?' ई एकटा वाक्य पाठकके चमत्कृतेटा नहि करैछ, किछु सोचबाक लेल विवश सेहो कए दैछ।

अतृप्त कामक कारणे व्यक्तित्व असहज भए उठैछ। ई जुआन चीत्कार थिकैक अतृप्त कामक। ई जुआन चीत्कार थिकैक ताराक, ठाकुर साहेबक तेसर स्त्रीक। ठाकुर साहेबमे ओ पौरुष नहि रहि गेल छलैन्हि जे ताराके तुष्ट कए पबितथि ओ। तथापि तारा मौने रहलि। किन्तु जखन ओ प्रीतम सिंहके ओहि विधवा सोनियाँक संग प्रेम करैत देखैत छैक तँ ओकरो कामभाव उद्दीप्त भए उठैत छैक। आ जखन तारा ठाकुर साहेबके प्रीतम सिंहक आखेट करबाक प्रयत्न करैत देखैए हैं ओकर मनमे प्रश्न उठैत छैक 'यदि शून्य जीवनक भारी रिक्तताके हल्लुक बनौनिहारक लेल प्राण-दण्डक विधान भऽ सकैत छैक, तँ टाकाक जोर पर हमर जीवनके शून्य-शून्य बनौनिहार अपराधीक केहन दण्ड देल जाए सकैत छैक ?' कथाकार ताराक मनोवैज्ञानिक विश्लेषण बड़ नीक जकाँ कएलैन्हि अछि जे कथाक रोचकताके बढबैछ। कथामे कौतूहल अन्त धरि बनल रहैछ।

कविताक नाम जीवन' शीर्षक कथाक नायक शशिकान्तक व्यक्तित्व पत्नी कवयित्री शुभाक सामाजिक मान, प्रतिष्ठा, लोकप्रियता आदिक तर दबा थकुचा जाइछ। पत्नी शुभाक कवयित्री रूप जे प्रारम्भमे अमृतोपम लगैत छलैक सएह अपन अस्तित्व बोधक बाद शशिकान्तके विवाह बूझि पड़ए लगलैक। यथार्थतः ई कथा बड़ कलात्मक बनि पड़ल अछि। भावक ऊहापोहक यथातथ्य वर्णन कथाक सरसता ओ रोचकताके बढौलक अछि।

निर्दोष अपराधी' शीर्षक कथामे कथाकार अनुभूत जीवनक यथार्थके बड़ रोचक ढङ्ग अभिव्यक्त कएल अछि। कथाकारक जीवनमे पैतीस वर्ष पूर्व घटित घटनाक पुनरावृत्ति होइछ मात्र पात्र सभ बदलल रहैत छैक। पहिल घटनाक निर्दोष अपराधी कथाकार स्वयं छलाह ओ दोसर घटनाक हुनक भातिज। दुनू घटनामे दूटा नेनाके अपराधी घोषित कएल गेल किन्तु दुहू निर्दोष छला। दुहू नेनाक अभिभावक द्वारा प्रताड़नाक बड़ मार्मिक ओ करुण चित्र अंकित कएल अछि।

'फेसन' प्रतीकात्मक कथा थिक। एहि प्रतीकके कथाकारक पत्नीक उक्तिसँ फरिछाओल जाए सकैछ। कथाकार एहिमे फेसनक मानवीकरण कएल अछि तथा एहि पद्धतिसँ कथाकार अपन कथ्यके ध्वनित कएल अछि। एहि कथामे अभिव्यक्ति-कौशल चमत्कारक अछि।

एहि संग्रहक अन्तिम कथा थिक 'चुनाव'। एहि कथाक शिल्प अन्य कथाक शिल्पसँ भिन्न अछि। कथनोपकथनहुँ द्वारा कथाकार सम्पूर्ण कथा सुना जाइत छथि। करीमुल्लाक चरित्रके बड़ सहज रूपे उपस्थापित कएल गेल अछि एहिमे। ताहि दिनक चुनाव ओ आजुक चुनाव पर कथाकारक व्यङ्ग्य मार्मिक अछि।

#### निष्कर्ष:

'जुआन चीत्कार' डॉ. यशोदानाथ झाक पहिल कथा संग्रह थिक। 'चीत्कार' अकानबाक प्रयत्न कएल जाए। कतहु कामक चीत्कार कर्णगोचर होएत, तँ कतहु नामजन्य चीत्कार। कतहु 'निर्दोष अपराधी' क चीत्कार सुनब तँ कतहु प्रजातन्त्रक चीत्कार। कहबाक तात्पर्य जे सम्पूर्ण परिवेश चीत्कारमय बुझि पड़त।

#### सन्दर्भ सूची:-

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