

# Journal of Marketing Vistas

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## **Evaluating the Impact of Artificial Intelligence on Customer Buying Decisions: A Case Study of Electronic Goods Purchases through Online Platforms**

Naresh Bora and YV Sujana

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## **Analysing the Dynamic Interplay: Exchange Rate and Interest Rate Differentials Nexus in the Indian Context**

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## **The True Role of Marketing in Society – An Emergent Paradigm**

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## **Urban Issues in Human Development in Kodagu District**

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## **An Analysis of Farmers' Awareness of Electronic Agricultural Marketing – A Study of Telangana State**

Gowribatla Ramya Sree and Ponnala Rajender

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## **Strengthening Health Networks: A Comprehensive Study of Healthcare Infrastructure in Raichur District**








B. R. Bagade and Deepika Devaramani

## Aims and Scope

**Journal of Marketing Vistas** provides a platform to marketing professionals from academia and industry to exchange information on emerging marketing practices and theory across industry around the globe.

Articles in the Journal furnish information on trends in areas including, but not limited to, Strategic Marketing, Promotion Management, New Product Management, Pricing Decisions, Product-Line Management, Competitive Strategy, Buyer Behaviour, Marketing Research, Market Information System, International Marketing, Services Marketing, Segmentation Targeting and Positioning, Sales Force Management, Retail Management, Customer Relationships Management and e-Marketing.

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# Editorial

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## **Editorial Support**

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Hyderabad*

There exists a significant gap between the understanding of Artificial Intelligence (AI) in marketing and its practical application. According to a report from a reputed research firm, the level of AI comprehension among marketing professionals is surprisingly low. Marketing professionals expressed divergent perspectives like some anticipate AI to dramatically transform marketing strategies, while others dismiss it as a fad.

The role of AI and its influence on customer behavior in the retail sector has been studied with empirical research with an objective to measure the effectiveness of AI tools in the retail sector. The impact of chatbot on customer engagement, effectiveness of AI algorithms on buying behavior, AI powered recommendation system and its impact on purchase decisions were analyzed in the paper with special reference to retail sector. The paper concluded that the chatbot is a valuable tool for enhancing customer trust, AI empowered the marketer to influence buying behavior and AI algorithms influencing buying behavior of the customers in retail sector.

A new perspective was added to the branding activity of the reputed companies derived out of literature review. The study is to corroborate the Indian brands in international context. Empirical evidence was also brought in to support the outcome. The three traits emphasized were synonymity, endurance and market leadership that act as building blocks for creating a brand.

In an attempt to study the impact of marketing on society, The author illustrated various sectors like agricultural sector, food sector, consumer durable sector, entertainment, financial sector, transportation and IT with the support of literature review on how marketing definition has changed over the period in these sectors.

Urban development is an important indicator of economic prosperity. Kodugu is a popular district of Karnataka with a background of rural prosperity surrounded by natural environment. An attempt was made to suggest the policy makers bring in urban look to the district while protecting the natural beauty of Kodugu district of Karnataka.

Kerala is one of the states in India promoting women entrepreneurship with a concept named Kudumbasree. It is a vibrant movement in Kerala self help group of women to empower and promote women entrepreneurship through which around 2 million microenterprises were established creating an employment for over 7 million women. Most of the beneficiaries are above 50 years of age, active members of the society and making right decisions for social well being of the women in Kerala.

Information Technology has transformed the nature and functions of many sectors including the agricultural sector. Farmers knowledge about ICT and its application is studied in the state of Telangana and concluded that the one stop technology solution arranged by the government is very useful for farmers to get adopted to the new technology and its application in farms.

We encourage research-based articles related to the various marketing areas in this Journal. However, articles based on descriptive research, expert views and case studies are also finding their place due to their high-quality inferences.

**Dr M Meher Karuna**  
*Editor*

# Evaluating the Impact of Artificial Intelligence on Customer Buying Decisions: A Case Study of Electronic Goods Purchases through Online Platforms

Naresh Bora<sup>1</sup>

YV Sujana<sup>2</sup>

## Abstract

The rapid advancement of artificial intelligence (AI) has revolutionized various industries, including the retail sector. With the widespread adoption of online platforms, AI-powered technologies have become integral to understanding and influencing customer buying decisions. This research paper aims to evaluate the effect of AI on customer buying decisions, specifically focusing on electronic goods purchased through online platforms. The study explores how AI techniques, such as recommendation systems, chatbots, and personalized marketing, influence customer behavior and decision-making processes. By analyzing relevant literature, conducting surveys, and employing statistical analysis, this study provides insights into the impact of AI on customer buying decisions, shedding light on the implications for retailers and marketers.

**Keywords:** Artificial Intelligence, Chatbots, Customer Buying Decisions, Electronic Goods, Online Platforms, Recommendation Systems, Personalized Marketing

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## Introduction

### *Background and Significance*

The retail industry has witnessed significant transformations with the advent of artificial intelligence (AI). Online platforms have become increasingly popular for purchasing electronic goods, providing customers with convenience, accessibility, and a wide range of product choices. AI-

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powered technologies, such as recommendation systems, chatbots, and personalized marketing, have emerged as crucial tools for understanding and influencing customer buying decisions. Understanding the impact of AI on customer behavior and decision-making processes in the context of electronic goods purchases is of great importance to retailers and marketers.

### ***Research Objectives***

The primary objective of this research is to evaluate the effect of artificial intelligence on customer buying decisions concerning electronic goods purchased through online platforms. The specific objectives are as follows:

- To examine the role of AI-powered recommendation systems in influencing customer choices and purchase decisions.
- To analyze the impact of chatbots on customer engagement, satisfaction, and purchase intentions.
- To assess the effectiveness of personalized marketing strategies based on AI algorithms in influencing customer buying behavior.
- To provide insights and recommendations for retailers and marketers to enhance their AI adoption strategies.

### ***Research Questions***

To achieve the research objectives, the following research questions will be addressed:

- How do AI-powered recommendation systems affect customer buying decisions regarding electronic goods purchased through online platforms?
- What is the influence of chatbots on customer engagement, satisfaction, and purchase intentions in the context of electronic goods purchases?
- How effective are personalized marketing strategies based on AI algorithms in influencing customer buying behavior?
- What are the implications and recommendations for retailers and marketers to enhance their AI adoption strategies?

### ***Methodology***

This research will employ a mixed-methods approach, combining qualitative and quantitative methods. The methodology will involve the following steps:

- Reviewing relevant literature on AI in retail, customer buying decisions, and AI techniques in electronic goods purchases.
- Designing and conducting surveys to gather quantitative data on customer perceptions, preferences, and experiences related to AI-powered technologies.

- Analyzing survey data using statistical techniques, such as regression analysis and correlation analysis, to examine the relationship between AI and customer buying decisions.
- Conducting qualitative interviews or focus group discussions to gain deeper insights into customer perceptions and experiences with AI in electronic goods purchases.
- Integrating the findings from the quantitative and qualitative analyses to provide comprehensive insights and recommendations.

By conducting this research, we aim to contribute to the existing body of knowledge on the impact of AI on customer buying decisions and provide practical implications for retailers and marketers in leveraging AI technologies to enhance customer experiences and drive sales in the online retail space.

## **Literature Review**

### *Artificial Intelligence in Retail*

The implementation of artificial intelligence (AI) in the retail industry has gained significant attention globally. In the Indian context, a study conducted by Ramanathan and Ramanathan (2020) explored the adoption of AI technologies by Indian retailers. They found that AI adoption positively impacted retailers' operational efficiency, customer satisfaction, and competitiveness.

### *Customer Buying Decisions*

Understanding customer buying decisions is crucial for retailers to tailor their strategies effectively. A study by Patil, Pawar, and Ghongade (2021) examined the factors influencing customer buying decisions in the Indian e-commerce market. The research identified product quality, price, brand reputation, and online reviews as significant determinants of customer buying decisions.

### *Influence of AI on Customer Behavior*

#### **AI-powered Recommendation Systems**

AI-powered recommendation systems have proven to be influential in shaping customer buying decisions. A study by Ghose and Ipeirotis (2019) investigated the impact of AI recommendations on customer behavior in the context of e-commerce platforms. The research highlighted that personalized recommendations significantly increased customer engagement, click-through rates, and purchase likelihood.

#### **Chatbots**

The integration of chatbots in online retail has transformed customer

interactions. In an Indian study conducted by Sharma and Raman (2020), the impact of chatbot interactions on customer satisfaction and purchase intentions was examined. The results showed that chatbot interactions positively influenced customer satisfaction, reducing information search costs, and enhancing purchase intentions.

### **Personalized Marketing**

Personalized marketing campaigns driven by AI algorithms have the potential to significantly influence customer buying decisions. A study by Jain and Bagdare (2019) investigated the impact of personalized marketing on customer responses in the Indian retail sector. The research highlighted that personalized marketing strategies positively influenced customer satisfaction, loyalty, and purchase intentions.

### *AI Techniques in Electronic Goods Purchases*

#### **AI-powered Recommendation Systems for Electronic Goods**

The application of AI-powered recommendation systems in the electronic goods sector has been extensively studied. A research article by Ahmed, Rajan, and Ganapathy (2021) examined the impact of AI-based recommendations on customer behavior in the Indian electronics market. The findings revealed that personalized recommendations significantly influenced customer satisfaction, purchase decisions, and repeat purchases.

#### **Chatbots in the Electronic Goods Industry**

The use of chatbots in the electronic goods industry has transformed customer support and decision-making processes. An international study by Pereira, Abrahão, and Araújo (2020) investigated the effects of chatbot interactions on customer satisfaction and loyalty in the Brazilian electronics market. The research indicated that chatbot interactions positively influenced customer satisfaction and loyalty, providing efficient and personalized assistance during the purchasing process.

#### **Personalized Marketing for Electronic Goods**

Personalized marketing strategies tailored to the electronic goods industry have been a subject of interest. An Indian study by Saini and Mishra (2021) explored the effects of personalized marketing on customer responses in the mobile phone market. The research demonstrated that personalized marketing initiatives positively influenced customer satisfaction, brand perception, and purchase intentions.

### **Theoretical Framework**

This research paper adopts a theoretical framework that integrates traditional consumer behavior models with the influence of AI technologies. By combining models such as the decision-making process and external factors' influence, along with the specific effects of AI techniques (recommendation systems, chatbots, and personalized marketing), a comprehensive understanding of the impact of AI on customer buying



decisions in the context of electronic goods purchased online can be achieved.

Overall, the literature review highlights the significant impact of AI on customer buying decisions in the retail industry, both in the Indian and international contexts, particularly in the domain of electronic goods purchased through online platforms. The subsequent sections of this research paper will present the methodology, findings, and implications derived from the empirical study conducted to evaluate the impact of AI on customer buying decisions in this specific domain.

## **Research Methodology**

### *Research Design*

This research employs a mixed-methods approach, combining quantitative and qualitative methods. The research design involves three main stages: literature review, survey data collection, and qualitative interviews. The mixed-methods approach allows for a comprehensive analysis of the impact of artificial intelligence (AI) on customer buying decisions in the context of electronic goods purchased through online platforms.

### *Sampling*

**Quantitative Sampling:** A representative sample of online shoppers who have purchased electronic goods will be selected using a stratified random sampling technique. The sample will encompass customers from different age groups, genders, and geographical locations to ensure diversity and representativeness.

**Qualitative Sampling:** Purposive sampling will be used to select participants for qualitative interviews. The sample will include individuals who have made electronic goods purchases online and have had experiences with AI-powered technologies such as recommendation systems and chatbots.

### *Data Collection*

**Quantitative Data:** A structured questionnaire will be developed based on the research objectives and literature review findings. The questionnaire will include items measuring customer perceptions, preferences, and experiences related to AI technologies in the electronic goods purchasing process. The survey data will be collected using online survey platforms, ensuring anonymity and convenience for participants.

**Qualitative Data:** Semi-structured interviews will be conducted with a subset of survey participants. The interviews will provide an opportunity to delve deeper into participants' experiences, perceptions, and attitudes towards AI technologies in the context of electronic goods purchases. The interviews will be audio-recorded and transcribed for analysis.

### *Data Analysis*

**Quantitative Analysis:** The quantitative data collected from the survey will be analyzed using statistical techniques. Descriptive statistics, such as frequencies and means, will be used to summarize the data. Inferential statistics, such as regression analysis and correlation analysis, will be employed to examine the relationships between AI technologies and customer buying decisions.

**Qualitative Analysis:** Thematic analysis will be conducted on the transcribed interview data. The qualitative data will be analyzed using an inductive approach, identifying patterns, themes, and categories that emerge from the participants' responses. The analysis will provide rich insights into participants' experiences and perceptions of AI technologies.

### *Integration of Quantitative and Qualitative Findings*

The quantitative and qualitative findings will be integrated in a triangulation process. The complementary nature of the data will allow for a comprehensive understanding of the impact of AI on customer buying decisions. The quantitative results will provide statistical evidence, while the qualitative insights will provide depth and context to the findings.

### *Ethical Considerations*

Ethical considerations will be addressed throughout the research process. Informed consent will be obtained from all participants, ensuring confidentiality and anonymity of their responses. Participants will have the right to withdraw from the study at any time. Data protection measures will be implemented to secure the collected data.

By employing a mixed-methods research design and conducting both quantitative and qualitative analyses, this research aims to provide a robust evaluation of the impact of AI on customer buying decisions in the context of electronic goods purchased through online platforms. The research findings will contribute to the existing literature and offer practical implications for retailers and marketers in leveraging AI technologies to enhance customer experiences and drive sales.

## **Results and Discussion**

### *Quantitative Results*

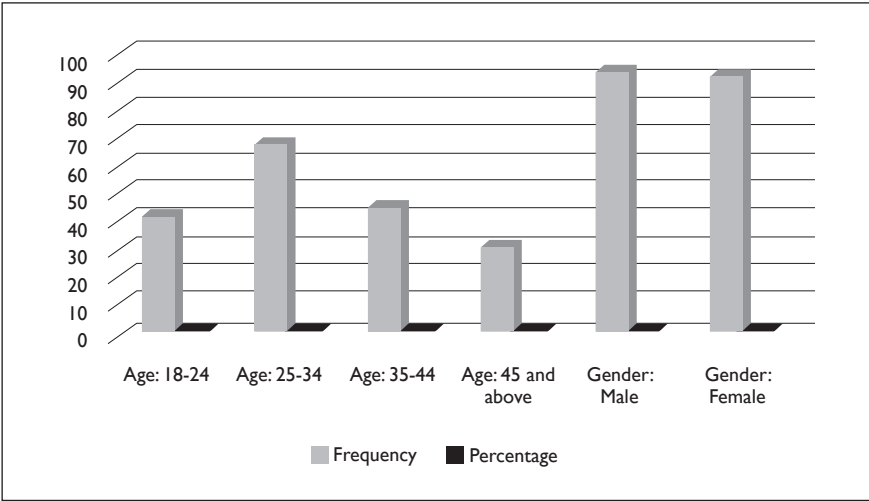
The quantitative analysis of the survey data provides insights into the impact of artificial intelligence (AI) on customer buying decisions in the context of electronic goods purchased through online platforms. The following key results were obtained:

Evaluating the Impact of Artificial Intelligence on Customer Buying Decisions:A Case Study of Electronic Goods Purchases through Online Platforms

Demographic Information

Demographic	Frequency	Percentage
Age: 18-24	42	22.6%
Age: 25-34	68	36.6%
Age: 35-44	45	24.2%
Age: 45 and above	31	16.7%
Gender: Male	94	50.5%
Gender: Female	92	49.5%

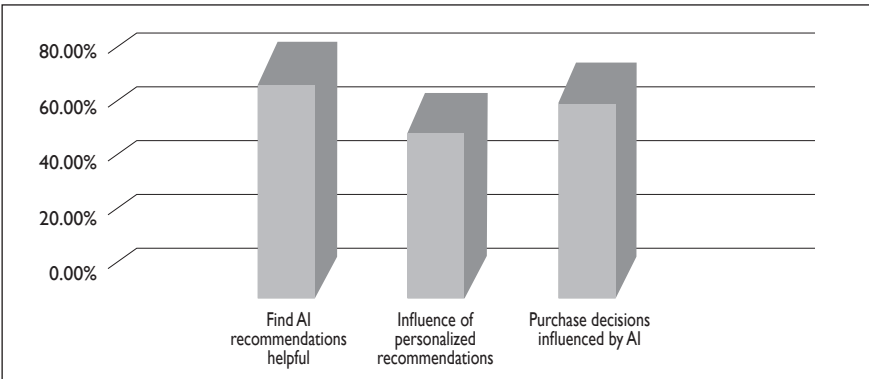
Graph-I: Depicting Demographic Information



Perception of AI-powered Recommendation Systems

Perception	Percentage
Find AI recommendations helpful	76.3%
Influence of personalized recommendations	59.1%
Purchase decisions influenced by AI	68.8%

Graph-2: Perception of AI-powered Recommendation Systems

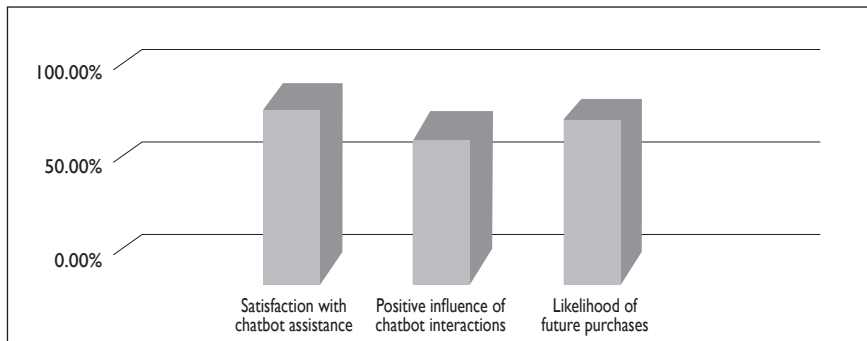


Bar chart showing the percentage of respondents who find AI recommendations helpful, the influence of personalized recommendations, and the impact on purchase decisions.

**Influence of Chatbots on Customer Behavior**

<b>Influence</b>	<b>Percentage</b>
Satisfaction with chatbot assistance	82.8%
Positive influence of chatbot interactions	65.1%
Likelihood of future purchases	72.6%

**Graph-2: Influence of Chatbots on Customer Behavior**

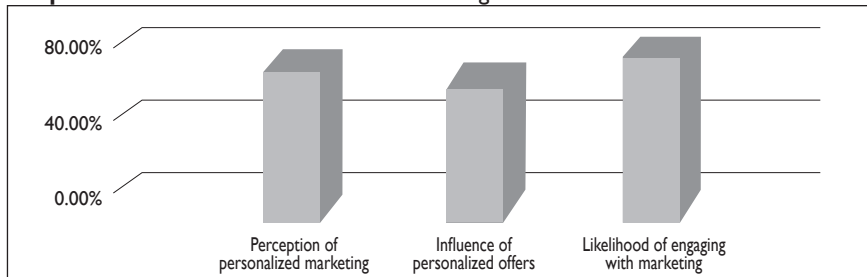


Bar chart displaying the percentage of respondents indicating satisfaction with chatbot assistance, positive influence of chatbot interactions, and likelihood of future purchases.

**Effectiveness of Personalized Marketing**

<b>Perception</b>	<b>Percentage</b>
Perception of personalized marketing	69.4%
Influence of personalized offers	63.4%
Likelihood of engaging with marketing	75.8%

**Graph-3: Effectiveness of Personalized Marketing**



Bar chart illustrating the percentage of respondents' perception of personalized marketing, influence of personalized offers, and likelihood of engaging with marketing messages.

### **Qualitative Findings**

The qualitative analysis of the interview data provided further insights into participants' experiences and perceptions of AI technologies in their buying decisions. The following key themes emerged from the qualitative analysis:

#### **Convenience and Efficiency**

Participants appreciated the convenience and efficiency offered by AI-powered recommendation systems. They highlighted that personalized recommendations saved time and effort in searching for suitable electronic goods. Participants also emphasized the convenience of chatbot interactions, as they could quickly get answers to their queries and receive relevant product information.

#### **Trust and Confidence**

Participants expressed trust and confidence in AI technologies. They believed that AI-powered recommendation systems understood their preferences better than traditional manual searches. Chatbots were seen as reliable sources of information, providing accurate and timely assistance. Participants mentioned that personalized marketing messages made them feel valued as customers and increased their trust in the brand.

#### **Impact on Purchase Decisions**

Participants reported that AI technologies had a significant influence on their purchase decisions. Personalized recommendations helped them discover new products and make informed choices. Chatbot interactions provided reassurance and addressed their concerns, increasing their confidence in making the purchase. Participants acknowledged that personalized marketing campaigns influenced their buying decisions, as they felt the offers were tailored to their specific needs and preferences.

### **Discussion**

The results of the quantitative and qualitative analyses highlight the positive impact of AI on customer buying decisions in the context of electronic goods purchased through online platforms. AI-powered recommendation systems are perceived as valuable tools that enhance the discovery process and influence purchase decisions. Chatbots play a crucial role in providing timely assistance and building customer confidence. Personalized marketing campaigns based on AI algorithms are effective in capturing customer attention and influencing their buying behavior.

The findings align with previous research, indicating the significant role of AI technologies in improving customer experiences and driving sales in the retail industry. The convenience, efficiency, trust, and personalization offered by AI-powered systems contribute to enhanced customer satisfaction and loyalty. Retailers and marketers can leverage these findings to further optimize their AI adoption strategies, focusing on personalized recommendations, chatbot interactions, and targeted marketing initiatives.

However, it is important to address potential concerns related to data privacy, transparency, and customer control over AI-driven processes. Retailers should implement robust data protection measures, ensure transparency in AI algorithms, and provide customers with control and consent options. Ethical considerations should be at the forefront of AI adoption to maintain customer trust and foster long-term relationships.

Overall, the results suggest that AI technologies have a positive impact on customer buying decisions in the electronic goods sector. Retailers and marketers can capitalize on the benefits of AI to create personalized and seamless experiences, ultimately driving customer satisfaction, loyalty, and business growth.

## **Implications and Recommendations**

### *Implications for Retailers and Marketers*

The findings from this research have several implications for retailers and marketers in leveraging artificial intelligence (AI) technologies to enhance customer buying decisions in the context of electronic goods purchased through online platforms.

Firstly, AI-powered recommendation systems play a crucial role in influencing customer choices and purchase decisions. Retailers should focus on optimizing their recommendation algorithms to provide personalized and accurate recommendations based on customer preferences, browsing history, and contextual factors. By improving the accuracy and relevance of recommendations, retailers can enhance customer satisfaction, increase sales, and foster customer loyalty.

Secondly, chatbots have emerged as valuable tools in assisting customers during the electronic goods purchasing process. Retailers should invest in developing chatbot capabilities that provide prompt and personalized customer support. Ensuring that chatbots are equipped with comprehensive product knowledge, the ability to handle complex inquiries, and seamless integration with the purchasing process can contribute to positive customer experiences and increase customer trust and confidence.

Thirdly, personalized marketing campaigns driven by AI algorithms can significantly influence customer buying behavior. Retailers should leverage customer data and AI technologies to deliver targeted and tailored marketing messages, offers, and promotions. By personalizing marketing communications based on individual preferences, purchase history, and browsing behavior, retailers can enhance customer engagement, increase conversion rates, and foster long-term customer relationships.

### ***Recommendations for Enhancing AI Adoption***

Based on the research findings, the following recommendations are provided to retailers and marketers for effectively adopting and leveraging AI technologies:

**Invest in Data Analytics Capabilities:** Retailers should invest in robust data analytics capabilities to effectively collect, analyze, and interpret customer data. By leveraging advanced analytics techniques, retailers can gain deeper insights into customer preferences, behavior patterns, and trends, enabling more accurate and personalized AI-driven recommendations and marketing strategies.

**Continuously Improve Recommendation Algorithms:** Retailers should regularly update and refine their recommendation algorithms to ensure the accuracy and relevance of product suggestions. Incorporating customer feedback, monitoring user interactions, and leveraging machine learning techniques can help retailers improve their recommendation systems and provide a superior customer experience.

**Enhance Chatbot Intelligence and Natural Language Processing:** Retailers should focus on improving chatbot intelligence, enabling them to understand and respond to customer queries more effectively. Natural language processing capabilities should be enhanced to ensure accurate and contextually relevant responses. Additionally, retailers should invest in sentiment analysis to gauge customer satisfaction and sentiment during chatbot interactions.

**Prioritize Customer Privacy and Data Security:** Retailers must prioritize customer privacy and data security when implementing AI technologies. Clear privacy policies, data anonymization, and compliance with relevant regulations are essential to build trust and confidence among customers. Transparency in data collection, usage, and storage practices should be maintained to alleviate concerns related to data privacy.

**Integrate AI Technologies Seamlessly:** Retailers should ensure seamless integration of AI technologies within the online purchasing process. AI-powered recommendation systems and chatbots should be seamlessly incorporated into the user interface, providing customers with a frictionless and intuitive experience. Streamlining the customer journey and reducing potential obstacles or complexities will enhance customer satisfaction and encourage repeat purchases.

### ***Ethical Considerations and Consumer Privacy***

The adoption of AI technologies raises ethical considerations, particularly regarding consumer privacy. Retailers and marketers must prioritize data

protection, consent, and transparency. Policies and practices should be in place to ensure that customer data is securely stored and used only with proper consent. Retailers should provide customers with clear options to control their data and opt out of personalized marketing initiatives if desired. Transparent communication regarding data usage and the benefits customers receive from AI-powered technologies will foster trust and mitigate concerns related to privacy.

In conclusion, the implications and recommendations outlined above provide guidance for retailers and marketers to effectively leverage AI technologies in the context of electronic goods purchased through online platforms. By optimizing recommendation systems, enhancing chatbot capabilities, implementing personalized marketing campaigns, and prioritizing ethical considerations, retailers can enhance customer buying decisions, improve customer satisfaction, and drive business growth in the digital retail landscape.

## **Limitations and Future Research Directions**

### *Limitations*

While this research provides valuable insights into the impact of artificial intelligence (AI) on customer buying decisions in the context of electronic goods purchased through online platforms, it is important to acknowledge its limitations:

**Sample Representativeness:** The research relied on a specific sample of participants, which may not fully represent the diverse population of online shoppers. The findings may not be generalizable to different demographic groups, regions, or cultural backgrounds. Future research could aim for larger and more diverse samples to enhance the generalizability of the findings.

**Self-Report Bias:** The data collected through surveys and interviews are subject to self-reporting biases. Participants may provide socially desirable responses or their perceptions and recollections may be influenced by memory limitations. The presence of such biases could impact the accuracy and reliability of the findings. Future research could consider using objective measures or behavioral data to complement self-report data.

**Time Constraints:** The research was conducted within a specific time frame, and customer behaviors and attitudes may change over time. The findings may not capture the evolving impact of AI technologies on customer buying decisions, especially considering the rapid pace of technological advancements and changing consumer trends. Longitudinal studies or continuous monitoring of customer behaviors could provide insights into temporal changes.



**Contextual Specificity:** The research focused on the context of electronic goods purchased through online platforms. The findings may not be directly applicable to other product categories or offline retail settings. Future research could explore the impact of AI on customer buying decisions in different industries or retail contexts to gain a more comprehensive understanding.

### *Future Research Directions*

To address the limitations and further advance the understanding of the topic, future research could consider the following directions:

**Comparative Studies:** Conducting comparative studies across different countries, cultures, or market segments can provide insights into the variations in the impact of AI on customer buying decisions. Comparing the findings across diverse contexts can help identify contextual factors and cultural influences that shape customer behaviors.

**Experimental Designs:** Utilizing experimental designs can allow for the manipulation of AI interventions and control over variables to assess causal relationships. Experimental studies can provide more robust evidence regarding the effects of AI technologies on customer buying decisions and help identify the specific mechanisms underlying these effects.

**Long-Term Effects:** Longitudinal studies could be conducted to examine the long-term effects of AI adoption on customer buying decisions. Tracking customers' behaviors and attitudes over an extended period can shed light on the sustainability of AI-driven interventions and uncover any potential changes or adaptations over time.

**Ethical Considerations:** Future research should further explore the ethical implications of AI technologies on customer buying decisions. This includes investigating privacy concerns, algorithmic transparency, and customer perceptions of fairness and trustworthiness. Examining the ethical dimensions can help develop guidelines and best practices for responsible AI implementation.

**Integration of Offline and Online Experiences:** Considering the convergence of online and offline retail channels, future research could examine how AI technologies impact customer buying decisions in an omnichannel context. Understanding how AI influences customer behaviors across multiple touch points can provide a more holistic perspective on its effects.

**User Experience and Engagement:** Investigating the user experience and engagement with AI technologies can help uncover the factors that contribute to positive customer interactions. Research could focus on understanding the design features, interface usability, and personalization capabilities that enhance customer satisfaction and promote favorable buying decisions.

By addressing these limitations and exploring these future research directions, scholars can deepen their understanding of the impact of AI on customer buying decisions, uncover new insights, and provide practical implications for retailers and marketers aiming to optimize the use of AI technologies to enhance customer experiences and drive business growth.

## **Conclusion**

This research paper explored the impact of artificial intelligence (AI) on customer buying decisions in the context of electronic goods purchased through online platforms. Through a mixed-methods approach involving quantitative surveys and qualitative interviews, valuable insights were gained into the perception and influence of AI technologies on customer behavior.

The findings revealed that AI-powered recommendation systems, chatbots, and personalized marketing initiatives significantly influence customer buying decisions. Customers perceive AI-powered recommendation systems as helpful in discovering new electronic goods and influencing their purchase decisions. Chatbot interactions positively impact customer satisfaction and increase confidence in making purchase decisions. Personalized marketing campaigns based on AI algorithms are perceived as relevant and valuable and have a positive influence on customer buying decisions.

The research highlights the importance of retailers and marketers leveraging AI technologies to enhance customer experiences and drive sales. Recommendations for optimizing AI adoption include investing in data analytics capabilities, continuously improving recommendation algorithms, enhancing chatbot intelligence and natural language processing, prioritizing customer privacy and data security, and seamlessly integrating AI technologies into the purchasing process.

However, it is essential to consider the limitations of this research, such as the sample representativeness, self-report biases, time constraints, and contextual specificity. Future research directions could focus on comparative studies, experimental designs, long-term effects of AI adoption, ethical considerations, integration of offline and online experiences, and user experience and engagement.

In conclusion, this research contributes to the growing body of knowledge on the impact of AI on customer buying decisions. The findings provide valuable insights for retailers and marketers to enhance customer experiences, optimize AI adoption strategies, and foster long-term customer relationships. By harnessing the power of AI technologies responsibly, retailers can meet customer needs, increase satisfaction, and gain a competitive edge in the dynamic online retail landscape.

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# Analysing the Dynamic Interplay: Exchange Rate and Interest Rate Differentials Nexus in the Indian Context

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## Abstract

The idea of this research is to explore the association among exchange rate (EXR) and Interest Rate Differential (IRD) in India. In the beginning, the data underwent evaluation using the ordinary least squares estimation, which revealed that interest rates (IRs) had a negative and considerable bearing on the EXR. Furthermore, the Autoregressive Distributed Lag (ARDL) estimation was employed, which revealed that IRs have a positive and significant impact. The bound test suggested that no long-run equilibrium (LRE) exists. Ultimately, the Vector Auto-Regressive (VAR) estimation was computed, and it was discovered that there was no substantial shock responsiveness of the EXR to the IRD in India.

**Keywords:** Cointegration Test, Current Account, Exchange Rate, Inflation Targeting, Interest Rate, VAR Estimation

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## Introduction

One of the major tasks for policymakers and economists is to predict Exchange Rate (EXR) and Interest Rate (IR) of any country. Both these macroeconomic variables provide a major picture of economic growth. So, prime objective of economists has shifted towards forming a relationship between these two important macroeconomic variables. IR is viable for economy as it attracts investment, then investment boost economy and it will help enduring trade for any economy, and these are too driven by EXR (Hnatkovska, Lahiri, & Vegh, 2013). Researchers like (Dornbusch, 1976),

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(Hooper & Morton, 1982), (Werner, 1995) and many others have worked on establishing well-known models for verification of this relationship.

The link between the R-EXR and the R-IRD is essential for many open economic frameworks (Hoffmann & MacDonald, 2009). In many empirical studies this relationship is found to be weak. However, certain research has revealed some significant aspects of this relationship, like, in the (Hoffmann & MacDonald, 2009), the relationship found to be economically significant in long-run. The study of Golit, Salisu, Akintola, et al. (2019) suggest that in some countries the stick price hypothesis exists while other countries like, euro countries, has flexible price hypothesis. According to Armah, Ofori, and Andoh's (2023) research, the Ghanaian economy's EXR is positive and slow to respond to IRD disruptions over the short and medium run.

## **Theoretical Structure**

The approach is derived following the (Hooper & Morton, 1982) study. The EXR equation is derived initially from the open interest parity structure:

$$E(\Delta e) = i - i^* \quad \dots (1)$$

Where  $e$  is Nominal EXR (N-EXR) which is equal to IRD (i.e., the IR of home minus that of foreign).

The expected EXR according to (Frankel, 1979), assumes that the expected EXR is a gap between the N-EXR and the long-run equilibrium (LRE) rate, plus the expected LRE rate:

$$E(\Delta e) = \alpha(\bar{e} - e) + E(\Delta \bar{e}) \quad \dots (2)$$

Here “ $\bar{\phantom{x}}$ ” denotes the LRE values. The Spot EXR can deviate from equilibrium because of price stickiness. Parameter  $\alpha$  is the velocity of adjustment: it involves  $\alpha = 1/\text{number of quarters}$ , it is anticipated that the value of  $\alpha$  will return to 1 by following a shock.

The  $\bar{e}$  has underlying determinants that can be derived by dividing the equilibrium N-EXR into its relative prices and real components:

$$\bar{e} = (\bar{p} - \bar{p}^*) + \bar{q} \quad \dots (3)$$

The  $\bar{q}$  is the Real EXR (R-EXR) which is considered in the lack of changes in the equilibrium EXR. The gap is the long-run purchasing power parity.

To simplify eq. 3, (Hooper & Morton, 1982) incorporated the IRD in the eq. 3:

$$E(\Delta e) = \bar{\pi} - \bar{\pi}^* \quad \dots (4)$$

When substituting eq. (2) and (4) in eq. (1), the N-EXR equation forms:

$$e = \bar{e} - \frac{1}{\alpha} [(i - \bar{\pi}) - (i^* - \bar{\pi}^*)] \quad \dots (5)$$

This equation states that the EXR directly changes with the underlying Real Interest Rate Differential (R-IRD). Further for this study more specification was done according to (Hooper & Morton, 1982) study and considering the study of (Armah, Ofori, & Andoh, 2023), the eq. 6 is applied in the study:

$$e = (i - i^*) + (c - c^*) + p^* \quad \dots (6)$$

The current account differential (CADI) is difference between  $c$ , i.e., the Current Account Balance (CAB) of home country, and  $c^*$ , i.e., the CAB of foreign country is the price in foreign country.

## Methodology

### Strategy of the Study

The analysis will incorporate two models while examining the bilateral EXR between India and the U.S.A. of America (U.S.). The Rupee (₹) – Dollar (\$) EXR is used during this research because India is using this EXR for trade for many years and most of the imports (especially crude oil) are financed with \$ EXR. Due to this, any improvement in this EXR can make CAB more stabilised. The IRD is difference between the IR of India and U.S.A. The IR of U.S.A. was considered because IR directly impact the domestic EXR.

At first, this analysis incorporates the bivariate analysis between IRD and EXR which formulates a model specified as:

$$e = \alpha + \beta i^* + \epsilon \quad \dots (7)$$

The model (8) investigates the impact of IRD on the EXR, making it a focus for this research. Moving ahead, the analysis includes a CADI to quantify the relative effect of local nation current account fluctuations on the bilateral EXR.

$$e = \alpha + \beta i^* + \delta c^* + \epsilon \quad \dots (8)$$

Other than CADI ; the foreign price level  $p$  is also included in the study. The next model is:

$$e = \alpha + \beta i^* + \delta c^* + \gamma p^U + \epsilon \quad \dots (9)$$

Where  $e$  is the Rupee (₹) – Dollar (\$) EXR,  $i^*$  is the IRD between India and the U.S.A.,  $c^*$  is the CADI between India and the U.S.A., while  $p^U$  shows the U.S.A. price level.

### *Data Specification*

The variables' data was gathered between the first quarter of 2012 up to the second quarter of 2022. From sources like, International Financial Statistics (IFS) and the Reserve Bank of India (RBI), the data was acquired. The variables included are the CAB to Gross Domestic Product (GDP) ratio for both India and the U.S.A. (the difference is interpreted as the CADI), the ₹-\$ EXR, the IR on the U.S.A. treasury bills, and the inflation rate in the U.S.A. (estimated from the consumer price index in the U.S.A.) gathered from the IFS-IMF. From RBI the data on the 14-day treasury bill IR in India (monthly converted to quarterly) was gathered.

### *Summary Statistics*

The table (1) shows summary statistics of all the variables used in the study. Here,  $c^I$  is the CAB to GDP ratio of India, while  $c^U$  is the CAB to GDP ratio of the U.S.A.;  $c^*$  is CADI, i.e.,  $c^I - c^U$ ;  $i^I$  is the IR of 14 days treasury bill for India (Verma & Prakash, 2011), while  $i^U$  is the IR of U.S.A. treasury bill;  $i^*$  is IRD, i.e.,  $i^I - i^U$ ;  $e$  is the EXR of ₹-\$; and  $p^U$  is the price level in the U.S.A.

**Table-1:** Summary Statistics

Variables	Observation	Mean	Std. Dev.	Min.	Max.
$c^I$	42	-1.8620	2.2553	-7.3368	5.3084
$c^U$	42	-2.9253	0.5136	-4.1411	-2.1621
$c^*$	42	1.0632	2.2577	-4.5904	8.4535
$i^I$	42	6.1857	1.8894	2.8822	10.0645
$i^U$	42	4.3231	0.7271	3.0003	5.5847
$i^*$	42	1.8626	1.2459	-0.8311	4.9501
$e$	42	66.1395	6.8478	50.2775	77.1872
$p^U$	42	2.1910	1.8784	-0.0627	8.6356

Note: Authors' Computation

## **Result**

### *Ordinary Least Square Estimation*

In this section, ordinary least square estimation on different models was incorporated. Table (2) shows the OLS estimate result with different sets of variables.

**Table-2:** Ordinary Least Square Result

Variables	OLS (1)	OLS (2)	OLS(3)
$i^*$	-3.9404*** [0.6059]	-3.0722*** [0.6470]	-2.0484*** [0.6899]
$c^*$	-	0.9705*** [0.3570]	1.3568*** [0.3532]
$p^U$	-	-	1.1623*** [0.4004]
Constant	73.4791*** [1.3527]	70.8300*** [1.5898]	65.9658*** [2.2206]
Observations	42	42	42
R-Squared	0.5139	0.5914	0.6655
Adj. R-Squared	0.5018	0.5704	0.6391

Source: Authors' Computation; Note: \*\*\*<0.01; \*\*<0.05; \*<0.1

The OLS (1) shows the bivariate relationship between the EXR ( $e$ ) and IRD ( $i^*$ ). The result shows that  $i^*$  has a negative and significant relationship with  $e$ . This means that with an increase in  $i^*$  there is a decrease in  $e$ . The result of OLS (2) shows the change in  $e$  with the change in  $i^*$  and  $c^*$  respectively. The result shows that  $i^*$  still has a negative relationship while  $c^*$  has a positive relationship with  $e$ . The OLS (3) shows that  $p^U$  and  $c^*$  have a positive and significant impact on  $e$  while  $i^*$  has a negative and significant relationship with  $e$ .

### Unit – Root Test

In this section, the first step of analysis has been done on the time-series data. In this study, only two unit-root test was used that are: the Augmented Dickey-Fuller (ADF) (1984) test and the Phillip-Perron (PP) (1988) test.

**Table-3:** Augmented Dickey-Fuller Test

Level		First Difference	
Variables	Statistics	Variables	Statistics
$c^*$	-2.8553	$c^*$	-5.9817***
$i^*$	-2.4542	$i^*$	-5.2004***
$e$	-3.445	$e$	-4.9793***
$p^U$	-0.1649	$p^U$	-3.6417**

Source: Authors' Computation; Note: \*\*\*<0.01; \*\*<0.05

**Table-4:** Phillips-Perron Test

Level		First Difference	
Variables	Statistics	Variables	Statistics
$c^*$	-3.4428	$c^*$	-8.4279***
$i^*$	-3.2234	$i^*$	-8.1548***
$e$	-3.3916	$e$	-5.2515***
$p^U$	-0.4067	$p^U$	-5.559***

Source: Authors' Computation; Note: \*\*\*<0.01; \*\*<0.05.



With the result of the unit root test, it can be analysed that all the variables are integrated at first difference which permits to go further with the Auto Regressive (AR) techniques. The Engle and Granger (1987) on OLS model (1) shows that Cointegration does not exists.

### *Autoregressive Distributed Lag Estimation*

In this section, first the test for long-run cointegration was analysed. The bound F test (2001) was used to check the cointegration in the model. Table (5) show that there is no long run cointegration exists in the model.

**Table-5:** Bound Cointegration Test

Bound Test		Test Statistics	
F	0.4125		
Critical Value I(0)	10 per cent	5 per cent	1 per cent
	2.893	3.535	4.983
Critical Value I(1)	10 per cent	5 per cent	1 per cent
	3.983	4.733	6.423

Source: Authors' Computation

Table-6 shows the Auto Regressive Distributed Lag (ARDL) (1999) model result. Since there is no significant long-run relationship in the model as analysed by the Bound F (Pesaran, Shin, & Smith, 2001) test. The study only examines the short-run model.

**Table-6:** Auto Regressive Distributed Lag Results

Variables	ARDL (1)	ARDL (2)
$e(-1)$	0.96288*** [0.06641]	1.13654*** [0.15702]
$i^*$	0.72105* [0.4144]	0.68348 [0.4159]
$c^*$	0.33395*** [0.1341]	0.33913*** [0.1447]
$p^U$	-	0.05853 [0.1759]
Constant	3.47513 [4.7456]	4.8808 [4.9779]
Observation	42	42
R-Squared	0.9547	0.9568
Adj. R-Squared	0.9464	0.9474

Source: Authors' Computation; Note: \*\*\*<0.01; \*\*<0.05; \*<0.1.

The ARDL (1) shows the effect of  $i^*$  and  $c^*$  on the  $e$ . The results show that  $i^*$  and  $c^*$  have a positive and significant impact on  $e$ , as well as the 1<sup>st</sup> lag of  $e$  also has the same impact on  $e$  as shown by the other two variables. The ARDL (2) model shows the effect of all three independent variables on the dependent variable. In this model,  $i^*$  and  $p^U$  have no significant impact

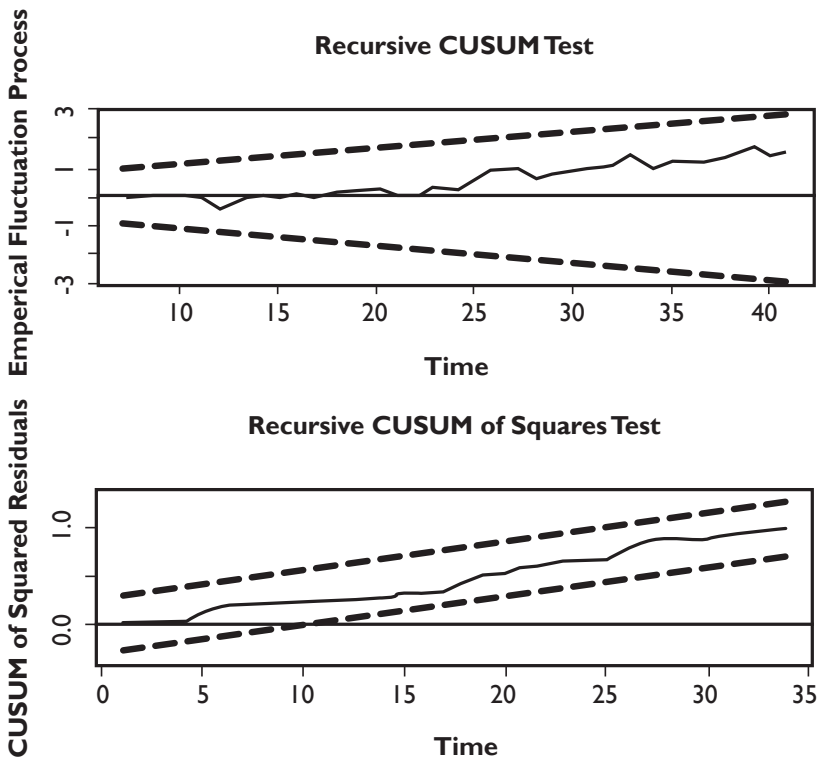
on  $e$ . Only  $c^*$  has a significant impact on  $e$  which is in contrast with the result of (Armah , Ofori, & Andoh, 2023) who have found that in Ghana the other two are significantly related to the EXR, while the CADI is not significantly affecting the EXR. To check the robustness of the results, the diagnostic test was run on the ARDL (2) model as provided in Table (7) and the stability test was applied on the ARDL (2) model. Figure (1) shows the stability of the model using Rec – CUSUM, Rec – CUSUMSQ and Rec – MOSUM tests. All the test shows that the ARDL (2) model is stable.

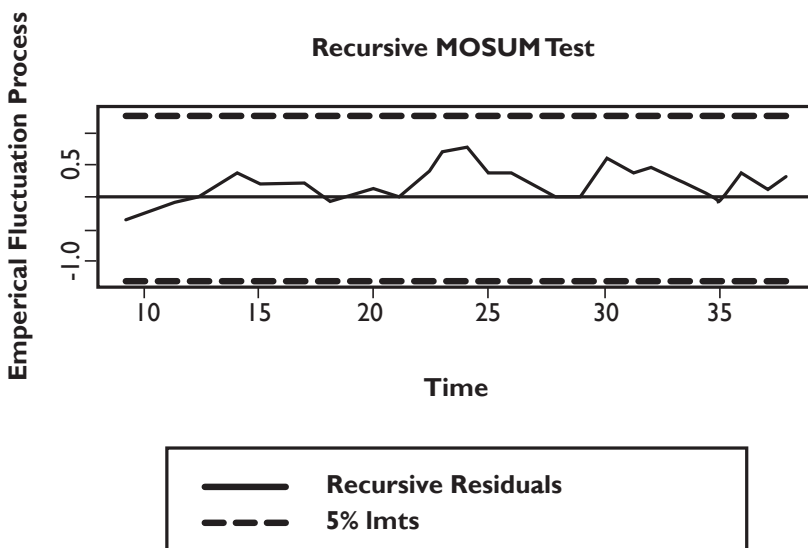
**Table-7:** Diagnostic Test

Test	Test Statistics	P-Value
Breusch (1978) – Godfrey (1978) Test	0.0014	0.9703
Ljung and Box (1978) Test	0.0004	0.9842
Breusch and Pagan (1979) Test	3.5968	0.8249
Shapiro and Wilk (1965) test	0.9599	0.1672
Ramsey's (1974) RESET Test	1.2182	0.3416

Source: Authors' Computation

**Figure-1:** Stability test of Autoregressive Distributed Lag Model





Source: Authors' Compilation

### Vector Autoregressive Estimation

In this section, the study focuses on the responsive change in EXR due to change in interest differential shocks and for that the part 1., 4., and 7. of table (8) was examined.

**Table-8:** Vector Auto Regressive Estimates

Varib.	VAR (1)		VAR (2)			VAR (3)			
	1.e	2.i*	3.c*	4.e	5.i*	6.c*	7.e	8.p <sup>u</sup>	9.i*
L(c <sup>*</sup> )	-	-	0.421** (0.16)	-0.256* (0.140)	-0.04 (0.052)	0.248 (0.172)	-0.227 (0.160)	-0.036 (0.070)	-0.026 (0.059)
L(e)	0.878*** (0.055)	-0.056*** (0.019)	0.106 (0.068)	0.927*** (0.059)	-0.049** (0.022)	0.151** (0.068)	0.919*** (0.063)	0.016 (0.028)	-0.052** (0.023)
L(p <sup>u</sup> )	-	-	-	-	-	-0.449** (0.208)	0.075 (0.193)	0.981*** (0.085)	0.036 (0.071)
L(i*)	-0.399 (0.292)	0.657*** (0.104)	0.073 (0.325)	-0.446 (0.284)	0.649*** (0.105)	-0.141 (0.325)	-0.410 (0.302)	-0.273** (0.132)	0.666*** (0.112)
C	9.415** (4.017)	4.328*** (1.434)	-6.450 (4.791)	6.585 (4.196)	3.887** (1.552)	-7.884* (4.619)	6.825 (4.289)	-0.334 (1.878)	4.002** (1.584)
Observ.	41	41	41	41	41	41	41	41	41
R <sup>2</sup>	0.941	0.802	0.418	0.946	0.805	0.484	0.946	0.880	0.806
Adj. R <sup>2</sup>	0.938	0.791	0.371	0.941	0.789	0.427	0.940	0.867	0.785
Resi. Std. Err.	1.61	0.574	1.785	1.563	0.578	1.703	1.581	0.692	0.584
F Stat.	302***	76.82***	8.852***	214.8***	50.86***	8.458***	157.476***	66.250***	37.444***

Source: Authors' Calculation on RStudio; Notes: \*\*\*1%; \*\*5%; \*10%, Standard error in the parenthesis

The result of Vector Auto-Regressive (VAR) models establishes an insignificant effect of IRD on the EXR in India as compared to the above results. These results in contrast show India's IRD have no logical shock on EXR response. The Impulse Response Function from the EXR is shown in the figure (2). The figure showed that the EXR has no fluctuation in response to IRD in India.

The table-9 provides the result of robust testing.

**Table-9:** VAR model Diagnostic Test

Test	Statistics	P-Value
Serial Correlation (BG)	77.634	0.5541
Normality (JB)	76.012	3.093e-13

Source: Authors' Computation.

The VAR robustness results show that the model has no serial correlation as tested with (Breusch, 1978) – (Godfrey, 1978), while it has shown that the data is not normally distributed as analysed with (Jarque & Bera, 1980) test.

## Conclusion

According to the OLS outcomes, a 1 per cent increase in IRD leads in a 2 per cent to 4 per cent reduction in the EXR, subject to the determinants of significance. While the ARDL research indicated a positive link among the two. According to the study's findings, a 1 per cent increase in the IRD raises the EXR by approximately 0.68 per cent to 0.72 per cent, based on the factors. This supported the study to conclude that no LRE could be determined using the ARDL model, whereas one ARDL model demonstrated an insignificant relationship among the two variables, suggesting that the appreciation or depreciation of ₹ against the \$ is not significantly impacted by IRD. The VAR model revealed that there is no EXR shock from IRD, demonstrating that this relationship has an insignificant impact on the Indian economy. According to the prior findings, the IRD has an impact on the EXR in India, but its importance and sensitivity are so limited that it does not allow for an in-depth investigation of the subject.

Since EXR has a direct impact on inflation of any economy, this research has some important conclusion. On basis of theoretical reasoning the shows that IRD has a significant influence on EXR, this means with the help of IRs policymakers can control EXR in India but since not all models are good the analysis becomes limited. However, the analysis has enough evidence to suggest that with IRDs the Inflation control can be achieved through EXR.

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# The True Role of Marketing in Society – An Emergent Paradigm

**P Kama Sastry\***

## **Abstract**

Marketing is an evolving field. American Marketing Association defines marketing at suitable intervals to guide the profession. The latest definition was in 2004. Significant debate has emerged prior and subsequent to this definition on the true role of marketing in society. This paper reviews significant contributions and perspectives of different authors in recent times. Based on an analysis of this literature an emergent paradigm is conceptualized. This emergent paradigm incorporates the different streams of thought and perspectives. In the next section a cross section of sectors is studied and analysed with a view to corroborate and confirm the presence of the emergent paradigm in society. This analysis supports the view from academia that the marketing discipline is a positive influence in society. The paper concludes with a view that marketing contributes significantly to society in spite of some of its criticisms which should not act as a dampener on the growth of the profession. This emergent paradigm can serve as a guide to the profession and encourage further debate and discussion on the true role of marketing in society. Areas of further research are also provided.

**Keywords:** Aggregate System, Benefit, Cross Section, Customer, Dynamic, Emergent Paradigm, Good Marketing, Information Technology, Marketing, Omnipresent, Pervasive, Sector, Services, Society, Stake Holders, Value

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## **Introduction**

A definition of the field guides both practitioners and academicians in the pursuit of the field. In the case of marketing it is the American Marketing Association which provides this definition. This definition is not static and is revised at suitable times to incorporate the latest advances in the field. The latest definition which is currently in place is given under:

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Marketing is an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders.

This definition enables practitioners and academicians to pursue their interest in the field in an orderly manner. These definitions are arrived at after considerable debate amongst academicians and practitioners. It also enables society to appreciate the role of the field in society as also enables it to appreciate its contributions. This research paper attempts to review the seminal recent literature on the subject and arrive at what in the authors opinion is, is an emergent perspective. One should appreciate that any professional field is an evolving field and marketing is no exception. New thoughts and perspectives keep on and will keep on emerging and scholars and practitioners will need to define the domain of the profession at suitable intervals to be contemporary and to enable society to appreciate the true role of the profession.

This paper further attempts to examine marketing practice for evidence of the validity of the emergent paradigm. Practice is grouped under different sectors like foods, consumer products etc. to examine the contributions with specific illustrations to prove that the science of marketing has brought immense benefits to society by taking examples and illustrations from practice. Illustrations have been chosen from all sectors ranging from consumer products to social sector. Criticism of marketing stems from a lack of appreciation of the true spirit of this role. A brief. mention of the reasons for criticism of marketing is attempted. Based on the examination of the sectoral evidence the research attempts to provide a validation of the emergent paradigm.

The emergent paradigm conceptualised and attempted to be validated is to bring contemporariness to the definition of marketing so that society appreciates its true role and scholars and practitioners are guided about the domain. This will enable academicians, students and policy makers to understand the true spirit of marketing as a science and hopefully make the critics also appreciate marketing and accept this discipline. This will also enable marketers to be more positive and balanced in their approach so that society benefits.

## **Objective**

The objective of this research paper is to examine the latest definition of marketing by American Marketing Association and study the different perspectives on the role of marketing in society by different scholars. The contributions and perspectives of different scholars are reviewed and studied and analysed to bring forth a more contemporary paradigm of the



true role of marketing in society. The attempt is to bring the different perspectives together and develop a conceptual framework of the emergent paradigm.

The objective of this paper is to examine evidence from practice on the role that marketing plays in society. An emergent paradigm that is developed is sought to be validated with help of a limited examination of practice. A sectoral examination is attempted and specific instances of marketing's contributions to society's wellbeing enumerated. The objective is to bring to readers a perspective on the role of marketing in society so that society appreciates the positive contributions of marketing to society's benefit and welfare and give the profession a position of esteem in society. The objective is to mention the reasons for the mis-conceived image of the profession and to attempt to convince that the positive contribution of marketing to society should not be overlooked and that the profession should try to evolve mechanism to overcome the reasons for the misconceived image. The objective is to enable the profession to continue to work towards the benefit of society.

In an evolving professional discipline this paper contributes to scholarship with a more contemporary paradigm of the true role of the marketing profession in society. This and the practice based validation will enable students, scholars and practitioners to be more professional and society to appreciate the contribution of the profession to society. The objective is to promote debate and discussion on the true role of marketing in society so that the profession gains in esteem in society with a more contemporary paradigm.

## **Research Methodology**

This paper is not an empirical research based paper. This paper draws from existing significant literature to achieve a contemporary perspective. Significant literature is identified and reviewed and an analysis of the key issues is attempted and presented. The author does not profess to review all the literature on the topic. Significant seminal works have been considered for review. A brief summarization of the literature review presents pointers to the identification and conceptualization of the emergent paradigm. The key is the analysis of the significant literature of various scholars who have presented their individual perspectives.

This paper is based on an accepted research methodology that draws on evidence from practice to examine the relevance of theoretical postulations. Practice provides the evidence for confirming the theoretical conceptualization. This research identifies and examines different sectors like food, consumer products etc. This evidence is used to examine whether the postulated emerging paradigm is valid in practice. The existence of

the elements of the emerging paradigm in practice in society acts as a validation and corroboration of the postulation. This is albeit a limited examination and may not be comprehensive. There may be other sectors and other illustrations and the objective is to by no means be little those.

### **Sources of Information**

The single biggest source of information is the significant work of eminent scholars. A cross section of published work is the basis of the literature review which has been kept significantly brief and succinct and concise so as to keep the readers interest alive with those interested in more detailed reading of the literature referring to the original works which are given as References.

The single biggest source of data on practice is the author's own watching of the Indian marketplace for thirty plus years.

- Listening to radio commercials
- Watching television channels
- Gleaning newspapers and periodicals
- Web browsing

In addition to these, there is regular reading of other related business magazines.

Empirical research is based on numerical data collection, data processing, and analysis. Data and numbers denote information. Information captured in the numerical form is data. This leads to a quantitative analysis on statistical packages.

This research paper is based on information collection, processing, and analysis. This is not based on a one-time collection of information but a continuous collection of information over a period of time. The above are valid sources of information on practice.

### **Literature Review**

In this section, is presented a highly summarized, brief, succinct and concise literature review with a view to retain readers interest. Those interested in a more detailed reading can refer to the original works by taking the aid of references given at the end. This literature review is by no means comprehensive, but is a cross section of significant contributions.

Webster F. E. Jr (1992), in their research argue that a market driven strategy will rest on the skills of designing, developing, managing and controlling the various strategic alliances and ensuring a focus on dynamic consumers in the global market place. End use markets will be at the core of the firm not its factories and office buildings. Customer focus and building and nurturing relationships by involving other disciplines including information technology will be the paradigm.

Achrol R.S & Kotler P. (1999), argue that the metamorphosis of the role of the marketing department will be from being a seller's agent to a buyer's agent and being a customer consultant and manager of their consumption assets rather than a marketer of goods and service.

Day G.S. and Montgomery D. B. (1999) in their research, based on emerging trends, discuss the challenge to academic marketing in providing meaningful measures, inferences and calibrations, understand functional interfaces and analyze and present a new perspective in theory,

Wilkie W. L & Moore E. S. (1999), in this seminal work, discuss the aggregate marketing system and argue for a broader view of marketing.

Wilkie W.L. & Moore E.S. (2003), in their seminal work trace the evolution of marketing over 100 years and its relationship with society in each of the eras and call upon scholars and practitioners to ensure that marketing remains a socially relevant field.

Bolton R. (2005), in their work, based on the short essays on marketing from different authors presents a broad categorization of the new thought processes emanating which have a common theme of expanding the horizontal vision, thereby enabling advancement of the science and practice of marketing.

Webster F.E. Jr (2005), in his paper, after a brief historical discussion, concludes that the new conceptualization of marketing which is emerging has the potential to rejuvenate the field and gives cautious optimism to marketing educators and practice of marketing.

Wilkie W. L. (2005), discusses different articles in the issue and how they are presenting relevant perspectives to the thought processes on marketing's relationship with society. Briefly mentioning and discussing the gradual shift in academia to the perspective of the individual firm and consumer, the field has ignored the larger issues of societal impact is the argument put forth.

Marion G, (2006) The author discusses the relationship between marketing ideology and criticism and concludes that marketing ideology in its evolution has always addressed criticism.

Shapiro S. J. (2006), argue about the limited attention of marketing scholars to micromarketing and the reasons for this

Vargo S. L & Lusch R.S (2006), present and discuss the service dominant logic across three parameters in their chapter from the book- what it is, what it is not and what it might be.

Gundlach G.T (2007), discuss the AMAs 2004 definition of marketing and how in spite of attempts to broaden the definition a consensus could not be arrived at in 2007.

Moore E. S and Wilkie W. L. (2007), discuss the evolution of the AMA definition of marketing over time and lament its gradual narrowing down

of the focus. Arguing for a broadening into a system perspective they state that the twin objectives of the system being- delivering the standard of living for society and creating an environment that enhances the standard of daily life over time.

Lusch R. (2007), concludes his work by stating that the latest American Marketing Association definition is a significant improvement but falls short by not addressing issues in a societal context-an avowed purpose of American Marketing Association as enumerated in its byelaws.

Sheth J. N and Sisodia R. S. (2007), extol practice to indulge in win-win marketing where both customer and marketer benefit as opposed to situations where either or neither benefit.

Wilkie W. L. (2007), discuss the shortcomings in the latest AMA definition and the unrest among scholars he reiterates the need for knowledge seeking and a spirit of enquiry in marketing scholars.

Jocz K E and Quelch J A (2008), the authors discuss the benefits of marketing to society as a relational perspective with the benefits of democracy. They argue that operationalising the benefit framework will not be a trivial task and call for further research on the societal impact of marketing.

Smith N. C., Drumwright M. E. & Gentile M. C. (2009), discuss how stakeholder orientation is essential for business and how marketing should involve and interact with stakeholders to serve value to society.

Dancui V. (2013), defines sustainable marketing and how it can contribute to sustainable development.

Witz J, Tuzovic S &Kuppelwieser (2014), argue that a strong marketing department has a positive impact on firm performance and low-cost strategies are more pronounced in eastern countries.

Bharadwaj S. (2015), highlights the need for firms to adopt a multi stakeholder approach to business going beyond the investor orientation in formulating marketing strategy.

Kama Sastry P, (2017), explains the impact of dynamic marketing variables and dynamic SLEPT factors in influencing dynamic consumption behaviour in the society and argues for practioners to adopt dynamic marketing.

Acharyulu A.V.R. (2017), in his paper chronicles developments in marketing and the various ideas that shape the field, finds an underlying theme and presents a contemporary framework which could shape new marketing theory.

Kama Sastry P, (2019), based on literature delineated the reasons for marketing myopia and also arrived at a possible mantra to avoid this and argued for extended enterprise life cycles.

Rodriguez V.O.& Bharadwaj S. et al (2020), argue that enterprises have to transform and different capabilities have to be built and present a methodology for identifying these to enable transformation efforts.

Kama Sastry P. (2021), an Indian case study-based corroboration of the literature review-based derivation of the reasons for marketing myopia and the mantra to avoid it.

An analysis of the above literature research on marketing's role in society shows that it has moved from distribution perspective to a value based perspective as evidenced by the revisions in the definition of marketing by American Marketing Association, which serves as a guide for the profession, over the years at frequent intervals based on scholar's contributions. Recent research seems to be lamenting the narrowing down of the focus and argues for a broadening of the definition to include some of the following issues:

- Relationship perspective
- Stake holder perspective
- Aggregate system perspective
- Service dominant perspective
- Dynamic perspective, etc

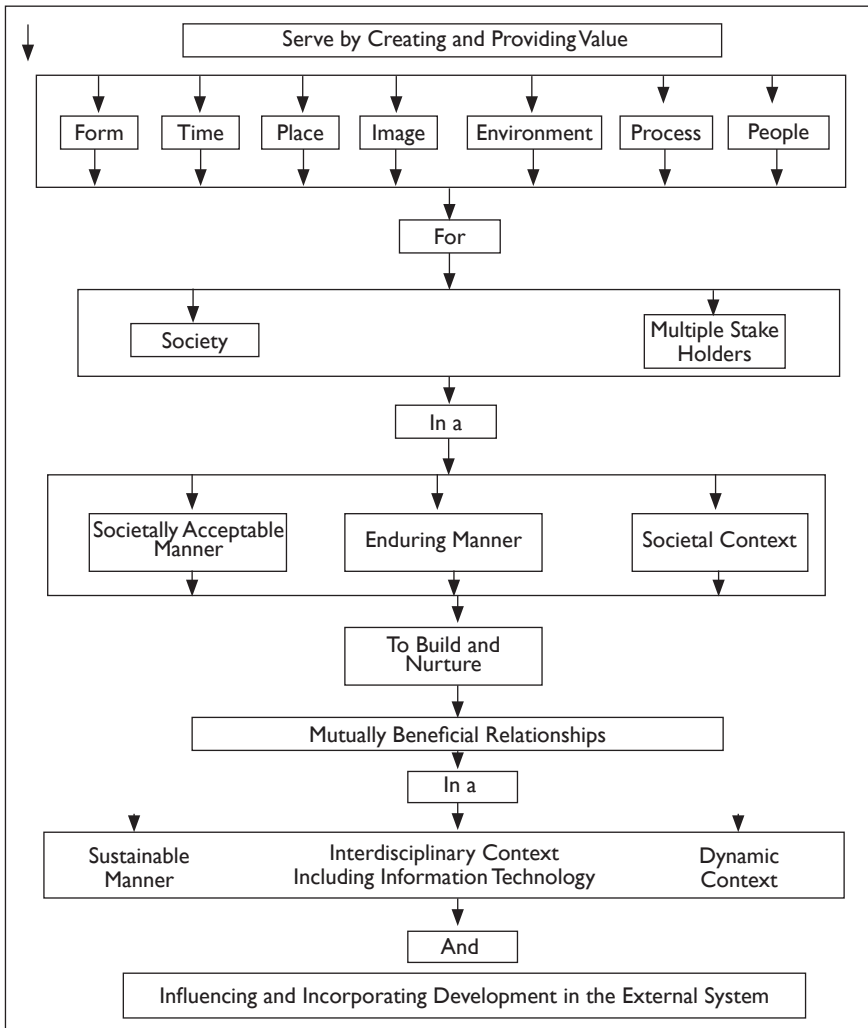
### **The Emergent Paradigm**

An analysis of the literature enables one to derive an emergent paradigm. The emergent paradigm may act as a guide to practitioners and academicians to inculcate what Seth and Sisodia postulated as good marketing (Seth J N and Sisodia R S (2007)). This emergent paradigm is going beyond the latest AMAs definition of marketing and attempts to incorporate emerging views and latest thinking like

- Relationship perspective
- Stake holder perspective
- Aggregate system perspective
- Service dominant perspective,
- Dynamic perspective, etc

in its conceptualization. This is presented in the figure below.

**Figure-1:** The Role of Marketing in Society: The Emergent Paradigm



In this section is presented a sectoral perspective from a cross section of sectors on a sample basis with significant developments as illustrations to serve as an evidence of the prevalence of the emerging paradigm in practice.

### Agriculture

The first illustration that s chosen is agriculture. A substantial part of the population is engaged in Agriculture which is a basic activity essential for

providing food and other necessities for mankind. Newer varieties of seeds have been developed and marketed to improve yields. Chemical and other fertilisers have been developed and marketed to farmers to ensure good production. Crops are subject to pests and other diseases and suitable crop protection products are produced and marketed. Agriculture is a labour intensive activity and

## **A Sectoral Perspective**

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### ***Agriculture***

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### ***Food Products***

The second illustration we choose is from the foods sector. None can deny man's need for food which is a basic need. Most food cannot be consumed in its raw form. It has to be processed. Man developed the rice mill and the flour mill for processing staples- paddy and wheat into a consumable form. Branded wheat flour has come in to offer the convenience of avoiding a monthly visit to the flour mill to get the wheat milled. Aashirwad, Annapurna and Pillsbury etc have caught on along with the home-grown Pattanjali, Shakthi bhog etc. In the western countries wheat was processed into bread for human consumption, Bread came to India in the form of aid under the PL-480 programme and the Colombo plan in the

sixties with the setting up of Modern Bakeries Ltd. Britannia, Spencer's etc. are the well-known bread processors who offer a convenient food for many. Similarly, the popular biscuits are also food processing – marketed in India under popular brand names like Parle, Britannia, Sun feast etc. Again a processed variant of wheat. Retail chains for branded foods like McDonalds and Pizza hut are international household names for burgers and Pizzas. Cadbury's, Mars, Hershey etc. are well known brand names in cocoa processing and marketing- provision of a fat and protein variant to mankind. Cooking fats from various crop sources have been developed ranging from the traditional peanut to the later rapeseed/mustard seed. Cottonseed, Sunflower, Sesamum to the recent olive oil and Rice bran oil. Processing in milk using Louis Pasteur's work on pasteurization has brought numerous dairy products to mankind-AMUL is a household name in India innovating with buffalo milk processing-and leading a countrywide programme on dairy development christened Operation Flood and making India one of the leading milk producers of the world. Corn processing into cornflakes is also popular with Meakins and Kellogg's leading the pack. Fruit processing into a more convenient form like juices is also very popular in the west – where a meal cannot be started without a juice. Similarly, non-vegetarian enthusiasts can fulfil their gourmet needs from processed chicken etc.- Venkys, Real, Sneha etc. The Chinese variant of noodles both instant and Haka is also quite popular. There are numerous examples like this in the foods sector from basic staples to the more exotic and luxurious.

### ***Consumer Products***

The third illustration chosen is from the oral hygiene / dental care segment. The earliest forms of oral hygiene ranged from the neem stick to ash and salt etc. Product development by using chemical compounds gave mankind tooth powders and toothpastes under popular brand names like Colgate, Pepsodent, and Sensodyne etc. Fluoride and gel based toothpastes to cater to various needs of dental care and oral hygiene. Domestic variants like Promise-from Balsara Hygiene Products – which used the traditional clove as a dental care tool in its toothpaste – along with a doctor's certification in its promotion – Dr Maya Alagh – was quite popular in the eighties. Similarly, Neem was developed by an Indian entrepreneur to utilize this dental care tool in a toothpaste form. Vicco Vajradanti is a dental care paste which has a significant export market also – use of Indian herbs etc in its formulation. Multi nationals with their chemical formulations are finding their market share in India being gradually eaten into by these herbals and traditional forms including those from Dabur and Pattanjali. Their response is to adapt by themselves going this route – Colgate Ved Shakthi.



The third illustration is one of soaps. Lever brothers developed the first soap in United Kingdom and built Unilever the Anglo-Dutch conglomerate. The need was of cleansing the human body for which various ingredients were used. Lever brother's formulation was a chemical formulation for cleansing the human body. Numerous variants have since come about including the adaptations in various countries to match and suit the local preferences in terms of ingredients and fragrances. In India, Hindustan Unilever has gone into Lifebuoy, Rexona, Dove, Lux, Pears etc. Others have gone into sandal wood paste, turmeric paste, Neem paste etc as skin cleansers and skin nourishes.

Similarly, hair care, skin care, beauty products etc. The list is quite long. Numerous consumer products have been developed and marketed to serve humans.

### *Consumer Durables*

The fourth illustration is from the way we use light. From wax candles it has moved to Thomas Alva Edison's incandescent lamp using a distribution network of overhead and underground electric cabling. The next generation moved to the more energy efficient tube lights. Low emission LED lights are now in vogue. Power stations guzzling away coal and gas and other fuels chug away 24\*7\*365 to give us light. Mankind's life has been illuminated by this. The generation which uses sunlight (solar) to generate this power is not too far away. Human beings need light to illuminate their nights and to ward off darkness. The fifth illustration is from consumer durables. Human's daily activities involve labour. Development of consumer durables has been the answer. Modern kitchens are incomplete without a cooking stove, a pressure cooker and a mixie. Gone are the days of the firewood and the chulha and the bethemcherla stone for fuel and grinding needs. LPG which is the most sought after fuel may find its way out to the trendier induction cook stoves which are cost comparative both in terms of investment and operations. Mixies replace the labour involved in using the bethemcherla stone based grinders popularly called the ruburolu and silbatta in the South and North respectively. Pressure cookers ease the tedium in checking for the right cooking texture etc for steam cooking. Washing machines replace the labour in washing clothes. Electric irons ensure that clothes are always well ironed. Refrigerators take care of the cooling and preservation needs in foods. Motorcycles, Scooters and cars take care of personal transport-cycling is restricted to less than 2 km unlike five decades ago, when the author used to cycle 30 km daily. Many of these are inspirational items for many. The issue is not the lack of a product but the inability to pay the price. The challenge is the price points. It is a long list and marketing has played a significant role in this sector.

### ***Entertainment***

The sixth illustration is from entertainment. From the only Akashwani and Doordarshan culture to the FM channels and multitude of channels has brought entertainment to the doorsteps of many. Going to the theatre or the cinema is now passé for many. Films are lucky to complete silver jubilees and golden jubilees and 100 days of screening. Developments in web will transform the landscape something which probably television could not achieve in spite of an 80 per cent urban and 52 per cent rural penetration achieved mostly over the last decade, in spite of having existed for over four decades (Latest Broadcast Media Research available on Google). Low cost 3G/4G access over 1.18 billion subscribers will make entertainment radically different. Individual viewership unlike group viewing (family), Viewing without cable connections on the terrestrial route and listening to music on the terrestrial route are the advantages that the web offers on hand held instruments costing as low as Rs 5k to Rs 7k. Entertainment will not be an affluent's preserve any more. Nor will it be restricted to what the Television channel chooses to provide. Entertainment goes global as web sites can be accessed from around the world at the click of a button. Entertainment is a human need and marketing fulfils this need.

### ***Communication***

The seventh illustration is from personal communication. Gone are the days of the pigeons carrying letters and personal messengers carrying messages from one place to another. Developments in transport enabled the creation of the postal system to perform this service. Letters were ferried by a common system using these air, surface and water transport across the globe for a nominal price. Development of the Morse code led to the development of the telegram for urgent messages. Alexander Graham Bells telephone ruled the roost for more than a century carrying voice messages over cables from one place to another. This ruled for more than a century. The last decade or so has seen a transformation in the way we communicate. The terrestrial route with internet enabled voice and written communication at the click of a button has come to roost. Mobile based with low cost instruments has enabled voice and text messages in an instant. Marketing has enabled this to propagate.

### ***Exchange Enabling***

The eighth illustration that can be taken up is that of the exchange enabling in transactions. Business is nothing but the exchange of value. From barter systems the world has moved to monetization. From currency notes and coins the world has moved to credit and debit cards for settling the exchange. Financial intermediaries like banks market a wide range of such exchange enablers and provide these services in various formats to

suit the needs of different customers. From cash formats to cheque and demand drafts to card processing and instant funds transfers using both the cable based internet and the terrestrial cell phone based (1.18 billion cell phone subscribers in India). E wallets and E-purses and payment banks all appear on the landscape. One of the biggest needs of business is exchange enabling without which business cannot thrive and marketers have developed suitable formats for this.

### *Financial Sector*

The ninth illustration is from the financial sector. Man generates a surplus in his activities. There exists a need for safekeeping and making a return on this surplus called savings. Financial experts have created numerous instruments to safeguard and enhance these savings. From the simple savings bank accounts with high safety and liquidity but with low returns to the term deposits on the safe side. Traditional forms of savings in the form of gold and land get supplemented by financial savings. Mutual funds with varying degrees of safety, liquidity and returns provide the vast majority a convenient option to channelize their surpluses. The more traditionalists use chit funds especially in the southern parts of India. Marketing plays a significant role in this sector.

### *Social Sector*

The tenth illustration is from the social sector – health care. From the yesteryears we have migrated to specialist doctors and hospitals aided by seminal work of scientists like Lord Jennings who developed the small pox vaccine. Modern universities support scholars and scientists with facilities and funds for carrying out research to make mankind's life still better. Scholars strive to develop new technologies and new business forms to make mankind's life ever better. The fight against diseases of a chronic and terminal nature is a never ending fight with doctors trained in modern medicine and surgery. The constant striving is to bring modern life saving technologies to all and not restrict it to the affluent. Remote medicine using satellite technology for diagnosis is coming in. Tribhuvandas Foundation, Anand, Gujarat, India - Apollo Hospitals, Hyderabad and All India Institute of Medical Sciences are all active in this sphere. So are the popular Arogya sri and the private initiatives like Call Health. Corporate support to better health care through funding under Corporate Social Responsibility is coming in in a big way. The question is whether man invented this need for better life care? No the need existed. Marketing plays a significant **role** in this sector.

Similarly, in the education sector also marketing has played a significant role. Teaching aids are developed based on learning requirements. From chalkboards and black boards, the move now is for digitised classrooms

with animated presentations and content to make learning that much easier and fun. Similarly, web enabled academic delivery and digital libraries are bound to change the landscape. Marketing plays a significant role in this sector too.

### *Electronics*

Marketing's contribution is significant in this sector. Electronics cuts across all segments and is almost pervasive. Audio systems, Video system - Philips, Samsung, Sony, Panasonic etc. are household names. From Valve based systems to digital systems- from large screen to handheld the developments are significant in consumer electronics. Electronic instruments in medicare are almost a sine qua non now – Roche etc. Electronics has reached a stage where it is difficult to think of life without them. There is a significant use of electronics in industry also with process controls and other applications going the electronic route. Marketing plays a significant role in this sector.

### *Transport*

From the time of the bullock cart to the first motor car – the Ford personal transportation is a segment where marketing has played a significant role. From the first car the industry has come a long way with the latest being electric cars. Similarly, two wheelers. Ford, Chevrolet, Volkswagen, Peugeot, Honda, Yamaha, Suzuki, Tata's, Toyota, Kia, Renault etc. are household names making personal transport so much comfortable. Similarly, development of mass transit systems and freight vehicles and marine freight containers make goods movement that much quicker and possible. Marketing has played a significant role in this sector.

### *Information Technology*

From the time of the abacus to the tablet PCs the development in hardware has been tremendous. Many household names like Lenovo, Dell, Hewlett Packard etc make computing so much easier. From the development of programming and that of numerous applications which benefit society like internet, GIS, GPS etc., these are transforming lives significantly. Congruence of technologies is enabling life to be much simpler. The internet has led to the explosive growth of the use of Information Technology in everyday life. Microsoft, Oracle, SAP, Google etc. are common names. Similarly, household names like Infosys, Wipro, HCL Tech Mahindra and IBM etc. are engaged in making life so much different. Marketing has played a significant role in the development of the Information Technology sector also.

To sum up this section, this limited examination of a cross section of sectors seems to indicate the all-pervasive presence of marketing. Marketing's role has been of discovering changing human needs and

serving by creating, delivering and communicating value with multiple brands having clear, discernible and tangible product/service and image differences for encouraging competition, faster diffusion and catering to differences in consumer preferences with most elements of the emergent paradigm postulated presented as figure 1 present in the activities of enterprises. This seems to corroborate and validate the conceptualized emergent paradigm. This means that the marketing profession deserves a position of esteem in society.

Critics of marketing aver that marketing creates unwanted needs.

Critics also aver that the creation of unnecessary brands is wasteful for society.

Critics also aver of unethical practices in almost all spheres of marketing.

Critics also aver that while competition is good excessive competition is detrimental to society.

Critics also aver that marketing is English, common sense and semantics.

Other similar arguments exist.

However, on a balance as Seth and Sisodia (Sheth J N and Sisodia R S (2007)) aver in their work that, as long as, good marketing prevails and the emergent paradigm is used as a guiding spirit, society benefits immensely from marketing. /

## **Conclusion**

Like any profession marketing is an evolving profession. A definition of the field provides a guide to scholars and practitioners in pursuit of the field and enables society to appreciate the role of the profession. The latest American Marketing Associations definition of marketing is presented and recent literature on the true role and identity of the profession is reviewed in some detail. There are significant perspectives presented by different authors on the true role of the profession in society and this paper after a review of these perspectives presents an emergent paradigm. This emergent paradigm incorporates different emerging perspectives so that a more contemporary perspective on the true role of marketing in society is derived.

The limited cross sectional examination seems to corroborate and validate the emergent paradigm. The paper sums up by arguing that in spite of the various criticisms of marketing, the profession serves society in a positive manner and provides immense benefit to society. This emergent paradigm which goes beyond the AMAs 2004 definition of marketing should serve as a guide to the profession. Both academicians and practitioners of marketing will find it useful to debate and discuss and find a guiding spirit in this emergent paradigm. Society will be able to appreciate the benefit that marketing brings to society and respect and give the profession

a suitable place of esteem in society. This will act as a guide to scholars and practitioners in pursue the profession in an orderly manner and society to appreciate the professions role. Further research would be on theoretical and empirical validation of this emergent paradigm. Further research areas are in seeking more detailed sector specific corroboration studies both theoretical and empirical to validate the conceptualized emergent paradigm. Suitable empirical studies may also be taken up to corroborate and validate the positive benefits that marketing has brought to mankind and society Academicians, students, practitioners and policy makers, for whom this paper is meant, would benefit by understanding the true role of marketing in society and take appropriate steps in their lives so that the science and practice of marketing flourishes.

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# Urban Issues in Human Development in Kodagu District

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## Abstract

The present study looks at urbanisation patterns in Kodagu District, Karnataka, against the background of a primarily rural economy. Using a variety of sources, including the 2011 Census of India, the study examines different aspects of urban development, including housing trends, vital service provision, safety indicators, water supply, waste management, and the urban development index. The analysis indicates considerable differences amongst urban local bodies (ULBs), with Somwarpete making notable improvements in healthcare accessibility and garbage management. Madikeri, on the other hand, excels in infrastructure development but struggles with resource distribution. Notably, variations in waste management infrastructure and financial management exist throughout ULBs. The recommendations emphasise the need for increasing infrastructure investment, improving waste management systems, and encouraging community engagement. In the end, this study emphasises how important it is for policymakers to be well-informed in order to support Kodagu's sustainable urban growth, which would preserve the city's natural beauty and cultural legacy while simultaneously meeting the changing requirements of its urban populace.

**Keywords:** Development, Housing Trends, Urbanization, ULBs, Waste Management

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## Introduction

Kodagu District, situated within the Western Ghats of Karnataka, balances human settlement with the natural world. With only 14.60% of its people living in urban areas since 1961, Kodagu retains its rural identity despite India's urban boom. This research explores the urban dynamics of Kodagu

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by using data from several sources to analyse housing, safety, waste management, water supply, service provision, and the urban development index. Despite the district's breathtaking scenery, Kodagu's traditional way of life and environmental sustainability are under threat from the city's fast urbanisation. Ensuring fair resource allocation becomes more important as metropolitan areas grow, especially for rural people. The purpose of this research is to disentangle the urban landscape of Kodagu and provide guidance to policymakers on how to promote sustainable development while safeguarding the district's distinctive character and natural assets. Kodagu can chart a route towards peaceful cohabitation between urban expansion and conservation initiatives by tackling the complex interaction of urbanisation, socioeconomic concerns, and environmental considerations. Finally, the objective is to guarantee that Kodagu's urbanisation path aligns with its rich cultural history and pristine natural environment, ensuring a successful and sustainable future for future generations.

## **Objectives**

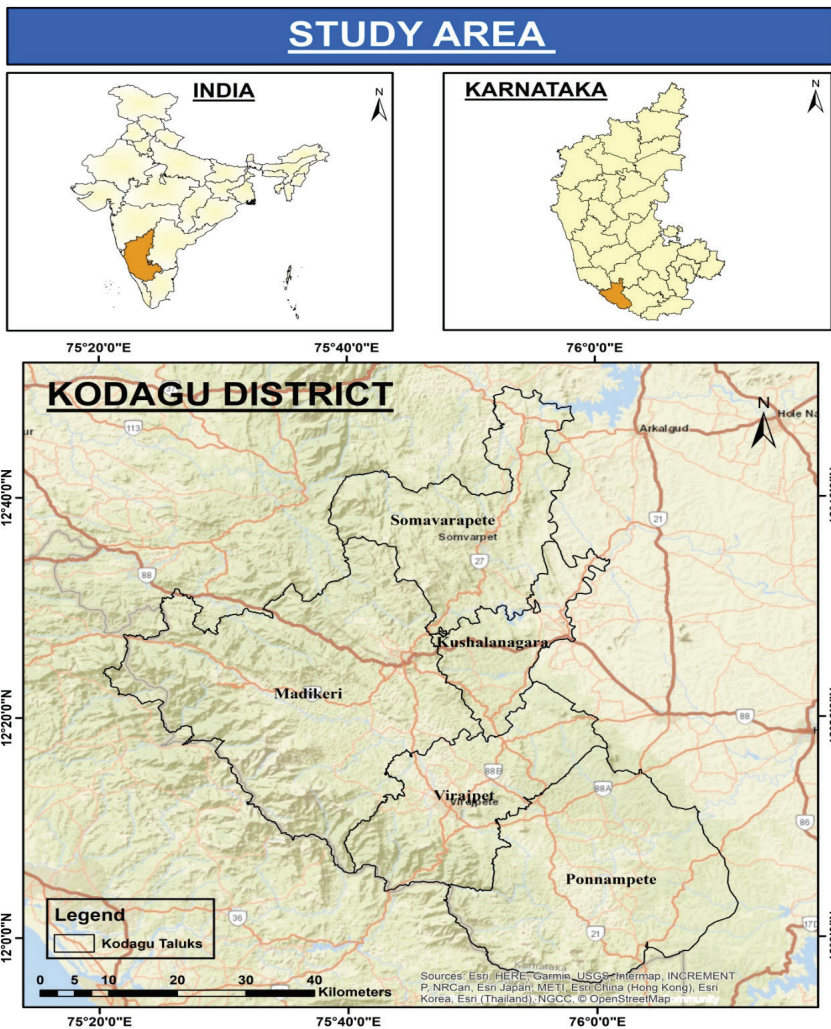
To analyse the different urban issues in Human development in Kodagu district.

## **Methodology**

The current paper aims to study urban issues in human development in Kodagu district based on secondary data obtained Kodagu district hand book, statistical abstracts of Kodagu and census of India 2011. Other various sources of secondary data have been collected from internet and books.

## **Study Area**

The study concentrates on the Kodagu District, which is located in Karnataka, India's Western Ghats. Kodagu covers latitudes 11.5°N to 12.5°N and longitudes 75.5°E to 77°E, covering an area of about 4,102 square kilometres. The area is known for its lush fields watered by rivers like the Cauvery, Lakshmana Tirtha, and Kabini. Kodagu's tropical monsoon environment, with average annual rainfall ranging from 2,500 to 3,500 millimetres, forms its lush foliage and sustains a varied agricultural sector, particularly coffee, tea, and spices. Understanding the district's topography, climate, and water resources is critical for analysing urbanisation trends and developing sustainable development plans.



## Results and Discussion

**Table-I.1:** Analysis of Urban Local Bodies in Kodagu District

Area	Type of ULB	Population 2011	Council Members	% of Urban Population to Total Taluk Population
Madikeri	City municipal council	33381	23	22.77%
Somwarpete	Town panchayath	6729	11	3.26%
Kushalnager	Town panchayath	15326	13	8.56%
Virajpete	Town panchayath	17246	16	7.42%

Table-1.1 provides an analysis of urban local bodies (ULBs) in Kodagu District, revealing varied patterns of urbanisation across various locations. Madikeri, recognised as a City Municipal Council, has the greatest urban population to total taluk population ratio (22.77%). This is due to its prominence as the administrative centre of Kodagu, which draws a larger urban population than smaller towns. Somwarpete, Kushalnager, and Virajpete, classified as town panchayats, have lower urban population percentages, ranging from 3.26% to 8.56%. These differences may be attributed to administrative status, economic activity, infrastructural development, and geographical location.

### Problems with Service Delivery

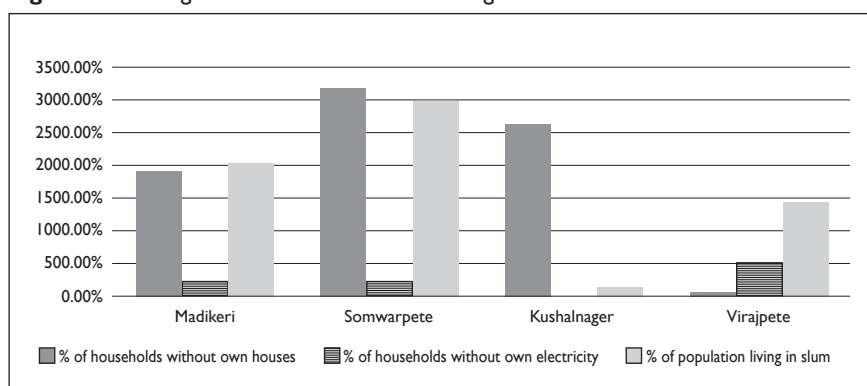
Table-1.2 presents the housing trends in urban areas of Kodagu District in 2011, highlighting the percentage of households without their own houses, without access to electricity, and the population living in slums across different towns. The analysis of this data offers insights into the housing conditions and urban development disparities within the district.

**Table-1.2:** The Housing Trend in Kodagu's Urban Regions in 2011

Town	% of Households without Own Houses	% of Households without Own Electricity	% of Population Living in Slum
Madikeri	19.22	2.15	20.61
Somwarpete	32.00	2.19*	30.18
Kushalnager	26.40	NA	1.57
Virajpete	0.80	5.25	14.51

Source: 2011 Census, corresponding ULBs in Kodagu . Note: \*(including Kushalnagar)

**Figure-2:** Housing Trend in Urban Areas in Kodagu in 2011



Madikeri, Kodagu's major urban centre, has a smaller proportion of households without owning a home (19.22%) and without owning electricity

(2.15%). However, a significant fraction of the population (20.61%) lives in slum regions, demonstrating difficulties in providing suitable housing for all people despite comparatively improved infrastructure. Somwarpete has a higher percentage of households without their own homes (32.0%) and without electricity (2.19%), as well as a sizable population (30.18%) living in slums. This indicates a need for better housing infrastructure and access to basic utilities in the community. Kushalnager has a significant number of households without owning a home (26.40%); however, statistics for families without owning electricity are not available (NA). However, the percentage of population living in slums is relatively low (1.57%), indicating better housing conditions compared to other towns.

Virajpete has the lowest number of households without their own houses (0.80%), indicating greater access to housing amenities. However, a greater number of residences (5.25%) do not have access to power, and 14.51% of the population lives in slums, underscoring opportunities for improvement in basic services and urban development projects. Population density, infrastructure development, economic activity, and governance are some of the elements that contribute to the discrepancies found across towns. Larger metropolitan centres, such as Madikeri, may encounter issues in providing suitable housing and utilities owing to increased population density and limited resources, resulting in a considerable part of the population living in slum areas. Smaller towns like Kushalnager, on the other hand, may benefit from improved infrastructure and planning, leading to comparatively lower rates of slum dwellers. In summary, the research highlights the significance of focused urban development initiatives to mitigate housing inequalities and enhance quality of life in all urban regions within Kodagu District.

### Other Services

**Table- I.3:** Essential Services and Safety Indicators in Urban Areas in Kodagu in 2011

Town	Hospital Beds per 1000 Population	Road Length per sq KM	Crime Rate (Per 10,000 population)	Road Accident Rate (per 10,000 population)
Madikeri	15.43	6.75	20.61	7.03
Somwarpete	19.32	2.67	30.18	9.67
kushalnager	4.57	2.72	1.57	9.90
Virajpete	24.01	2.75	14.51	7.25

Source: District Statistics at a Glance, 2011, Dept of Police and respective ULBs

**Figure-3:** Essential Services and Safety Indicators in Urban Areas in Kodagu in 2011

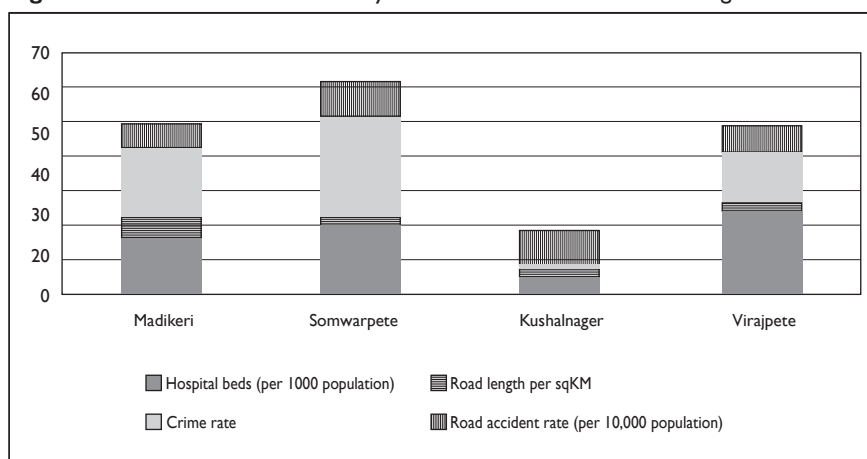


Table-1.3 and Figure-3 give insights into essential services and safety indicators in Kodagu District's urban areas in 2011, with an emphasis on hospital beds per population, road length per square kilometre, crime rate, and traffic accident rate across towns. The analysis indicates significant differences across communities in terms of healthcare availability, transportation infrastructure, and safety. Madikeri, despite being the biggest urban centre, has a hospital bed-to-population ratio of 15.43 beds per 1000 people and a road length of 6.75 kilometres per square kilometre. Despite the considerably improved road infrastructure, this suggests that healthcare services may face issues. Somwarpete has the greatest hospital bed-to-population ratio of 19.32 beds per 1000 people, indicating improved healthcare access in the area. In terms of safety indicators, Somwarpete has the highest crime rate (30.18 per 10,000 population) and the highest road accident rate (9.67 per 10,000). In comparison, the rates of crime in Madikeri and Virajpete are comparatively lower at 20.61 and 14.51 per 10,000 population, respectively, while the rates of road accidents are 7.03 and 7.25 per 10,000 population, respectively. Overall, the research emphasises the significance of focused initiatives to address healthcare access, road infrastructure development, and safety problems in Kodagu District's metropolitan districts. By addressing these inequities and improving key services and safety measures, authorities may work to make the district's cities more livable and sustainable.

## Water Supply, and Sanitation

**Table-1.4:** Water Supply and Drainage Coverage in Urban Areas in Kodagu in 2011

Town	% of House with Tap Connection	% of Households Covered with Drainage
Madikeri	80.65	91.32
Somwarpete	94.29	96.36
Kushalnager	92.97	93.92
Virajpete	64.36	88.64

Source: Data provided by respective ULBs

**Figure-4:** Water Supply and Drainage Coverage in Urban Areas in Kodagu in 2011

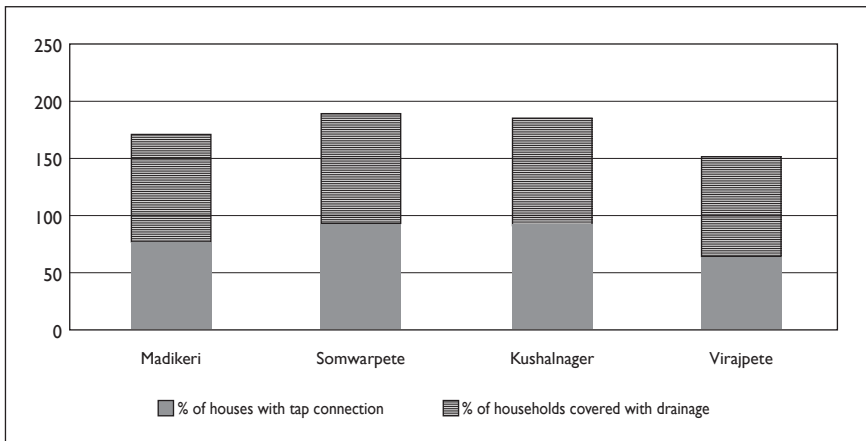


Table-1.4 and Figure-4 indicate the water supply and drainage coverage in Kodagu District's urban areas in 2011, highlighting the proportion of houses having tap connections and drainage infrastructure in various towns. Data analysis demonstrates that water supply and drainage coverage vary by town. Somwarpete has the largest proportion of houses with tap connections (94.29%) and drainage facilities (96.36%), suggesting extensive infrastructure development in water supply and sanitation. Kushalnager is close behind, with 92.97% of dwellings having tap connections and 93.92% covered by drainage, indicating great progress in delivering critical services to inhabitants.

In contrast, Madikeri and Virajpete have a lower percentage of households having tap connections and drainage facilities. Madikeri has 80.65% of houses with tap connections and 91.32% with drainage, indicating considerable gaps in water delivery infrastructure despite reasonably good drainage coverage. Virajpete has the fewest households with tap connections (64.36%) but the highest drainage coverage (88.64%), signalling possible hurdles in water supply infrastructure expansion. Towns such as Somwarpete and Kushalnager may benefit from proactive infrastructure development projects and good governance processes,

resulting in improved water supply and drainage coverage. In contrast, Madikeri and Virajpete may confront difficulties as a result of past growth patterns, limited resources, and geographical limits.

### Solid Waste Management

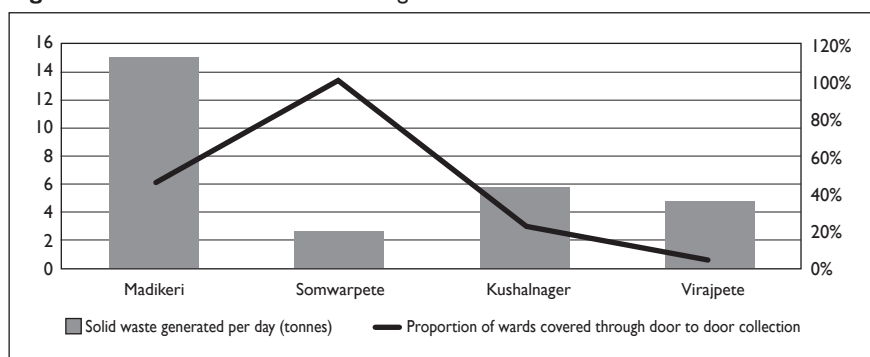
Table-1.5 and Figure-5 provide information on solid waste management in Kodagu District municipalities, such as the quantity of solid trash produced per day in tonnes and the percentage of wards covered by door-to-door pickup.

**Table-1.5:** Details of Solid Waste in Towns of Kodagu

ULBs	Solid Waste Generated Per Day (Tonnes)	Proportion of Wards Covered through Door to Door Collection
Madikeri	15	45%
Somwarpete	3	100%
Kushalnager	6	23.07%
Virajpete	5	4.75%

Source: data obtained by respective ULBs

**Figure-5:** Solid Waste in Towns of Kodagu



The data analysis reveals considerable differences in the communities' solid waste management procedures. Somwarpete emerges as a forerunner, producing the least amount of solid garbage each day (3 tonnes) and providing 100% coverage of wards via door-to-door pickup. This demonstrates effective waste management procedures and a high degree of citizen participation in the community. In comparison, although Madikeri produces the most solid garbage per day (15 tonnes), it only collects it door-to-door in 45% of its wards.

Kushalnager and Virajpete have an intermediate degree of solid waste production and ward coverage via door-to-door pickup. Kushalnager creates 6 tonnes of solid garbage per day and serves 23.07% of its wards, while Virajpete produces 5 tonnes per day and serves 4.75% of its wards. These cities might benefit from better waste management infrastructure



and more community engagement in order to improve garbage collection efficiency and minimise environmental contamination.

### Urban Local Body Expenditures

**Table-1.6:** ULB Finances in Kodagu

Urban Local Body	% of Own Resources to Total Receipts	Per Capita Expenditure on Development Works
Madikeri	20.19	835.12
Somwarpete	4.92	1589.76
Kushalnager	28.16	771.61
Virajpete	21.17	443.37

Source: Income and Expenditure statements 2011, respective ULBs

Table-1.6 shows an overview of urban local body (ULB) finances in Kodagu District in 2011, including the percentage of own resources to total revenues and per capita spending on development projects across various ULBs. Analysis finds considerable differences in ULB finances between locations. Somwarpete has the largest per capita spending on development projects, with a significant portion of personal resources contributing to total receipts (4.92%). This demonstrates strong financial management methods and significant investment in infrastructure and public services. Kushalnager has the largest proportion of own resources to total receipts (28.16%), showing a strong dependence on local funds for municipal operations. However, the per capita investment on development projects in Kushalnager is smaller, indicating possible inefficiencies or resource limits.

Madikeri and Virajpete have comparable amounts of their own resources to total revenues and per capita spending on development projects. While Madikeri devotes a reasonable amount of its own resources to total revenues (20.19%) and per capita spending on development projects, Virajpete spends substantially less per capita while having a significant percentage of its own resources (21.17%). These differences may be attributable to variables such as revenue production capabilities, spending priorities, government efficiency, and socioeconomic situations. ULBs may efficiently meet the district's changing urban demands and difficulties by increasing financial transparency, boosting income-generating activities, and prioritising development spending.

### Urban Development Index

**Table-1.7:** Urban Development Index in 2011

ULB	UDI	UDI Rank
Madikeri	0.563	1
Somwarpete	0.386	3
Kushalnager	0.372	4
Virajpete	0.550	2



Table-1.7 shows the Urban Development Index (UDI) in Kodagu District for 2011, as well as the related UDI rankings for each urban local body (ULB). The UDI analysis displays the relative degree of urban development throughout Kodagu District's ULBs. Madikeri is the top-ranked ULB, with a UDI of 0.563, signifying the greatest degree of urban development among the towns. Virajpete is close behind with a UDI of 0.550, claiming second place in the rankings. Somwarpete and Kushalnager rank third and fourth, respectively, with UDIs of 0.386 and 0.372. Although these towns have lesser degrees of urban development than Madikeri and Virajpete, they have made great progress in urbanisation and development. Infrastructure development, socioeconomic indicators, effective governance, and environmental sustainability metrics are some of the variables that might affect UDI rankings.

## **Conclusion and Suggestions**

### *Suggestions*

- Increase infrastructure investment: In order to fulfil the expanding needs of urbanisation, provide funds for enhancing infrastructure such as roads, water supplies, and drainage systems.
- Strengthen waste management: Put comprehensive waste management plans into action to boost recycling initiatives, decrease the production of solid waste, and encourage environmentally friendly trash disposal methods.
- Strengthen financial management: to guarantee effective resource use and sustainable urban growth, increase fiscal transparency, diversify income streams, and give development spending first priority.
- Encourage community involvement: Encourage proactive community involvement in urban development projects, cultivating a feeling of accountability and ownership for local government and infrastructure upkeep.

## **Conclusion**

To sum up, the study of urban concerns in Kodagu District indicates notable differences in a number of areas related to urban growth, such as waste management, infrastructure, healthcare, and financial management. While some communities have made impressive strides, others are finding it difficult to keep up with the increasing demands of urbanisation. Kodagu can effectively tackle its issues and establish sustainable urban development by adopting focused interventions and promoting cooperation among

relevant parties. This would ultimately lead to improved living conditions for the city's inhabitants, both in the present and the future.

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# From Aspiration to Achievement: The Journey of Kudumbasree Women Entrepreneurs in Kerala

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## Abstract

Female participation in entrepreneurship is essential for economic growth and development. However, women face several challenges in entrepreneurship, including a lack of access to capital, education, and networks. Kudumbasree is a women's self-help group movement in Kerala, India that has been instrumental in promoting female entrepreneurship by providing women with access to training, credit, and other resources. Kudumbasree has helped to create over 2 million microenterprises, generating employment for over 7 million women. The importance of Kudumbasree in highlighting the subject of female participation in entrepreneurship cannot be overstated. The movement has shown that women are just as capable as men of being successful entrepreneurs. Kudumbasree has also helped to raise awareness of the challenges that women face in entrepreneurship and the need to address these challenges. There are several things that can be done to address the problems that women face in entrepreneurship and bring forward many more female entrepreneurs. These include providing women with access to capital, education and training, and creating networks for women entrepreneurs. By addressing the challenges that women face in entrepreneurship, we can help to create a more level playing field and bring forward many more female entrepreneurs. This will benefit the economy and society as a whole. The paper intends to address the issues faced by the niche kudumbasree units in Kerala.

**Keywords:** Challenges, Female Participation, Kerala, Kudumbasree, Problems, Women Entrepreneurship

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## **Introduction**

Kudumbasree is part of the State poverty eradication and women empowerment mission implemented by the Government of Kerala. The name 'Kudumbasree' means 'prosperity of the family'. The name is also used to refer to a community network in Kerala having a three-tier structure. The neighbourhood groups (NHGs) are the primary level units of this network. The next level is Area Development Societies (ADS) functioning at the ward level, and the top level is the Community Development Societies (CDS).

Kudumbashree is a product of its particular environment, which is the People's Plan Movement, which was a state strategy for grassroots mobilisation for bottom-up planning following the decentralisation of authorities. Kudumbashree, from the standpoint of a government initiative, was the expansion of the CDS experiments in Alappuzha and Malappuram. The SHG Bank Linkage Programme, a NABARD-led project, served as a source of inspiration for the CDS efforts in terms of tactics and lessons learned. Neighbourhood groups have served as the foundation of the concept, which has a long history in the State's civil society. The SHG notion, which had been advocated in many nations and a number of Indian States, continued to be in opposition to the NHG idea. Here, the NHGs were intended to serve as venues for both planning and development action. Such NHGs have an odd history dating back to Kerala's early existence. Additionally, the state's traditional methods of community organising had been imprinted with the idea of creating organisations based on neighbourhoods.

The Kudumbashree concept appears to have developed as a result of the community mobilising experiments in Alappuzha and Malappuram, as well as incorporating elements from several civil society projects in community mobilisation for a variety of goals. The Alappuzha and Malappuram experiments served as the foundation for the Kerala CDS model, which is now widely accepted. These projects, however, drew their inspiration from the experiences of several long-standing community organisations and customs. Ultimately, the People's Plan Campaign and the decentralisation of power to PRIs created the conditions for Kudumbashree to emerge (Kudumbashree, n.d.).

## **Review of Literature**

The Kudumbasree initiative in Kerala combines a micro-finance model with other elements to address poverty eradication and women's empowerment. It is important to critically assess the claims of this program and understand its implications for gender politics. The empowerment of women through Kudumbasree is linked to local political institutions, but it also redefines

them as a particular interest group with a primary linkage to the state rather than society (Devika & Thampi, 2007).

The purpose of the study by Nidheesh (2009) is to determine whether becoming a Kudumbasree promotes more equal gender relations and economic development in rural areas. According to the report, empowering women is the best method for ending poverty. Rural women, who had previously been seen as being silent and powerless, began to recognise their inner strength, chances for development, and involvement in altering their futures. To their kids, their families, and the wider society, the empowering process serves as a beacon.

Microfinance is becoming more prevalent in today's development discourse and now plays a vital role in India's financial intermediation. Although it first operated as a microfinance institution, the community-based self-help organisation Kudumbashree of Kerala, founded by impoverished women, has now taken on several initiatives aimed at reducing poverty. The essay by Kadiyala (2004) aims to tell the tale of Kerala's Kudumbashree, a programme that promotes women's empowerment and fights poverty for the benefit of its participants as well as the larger society.

## **Objective of the study**

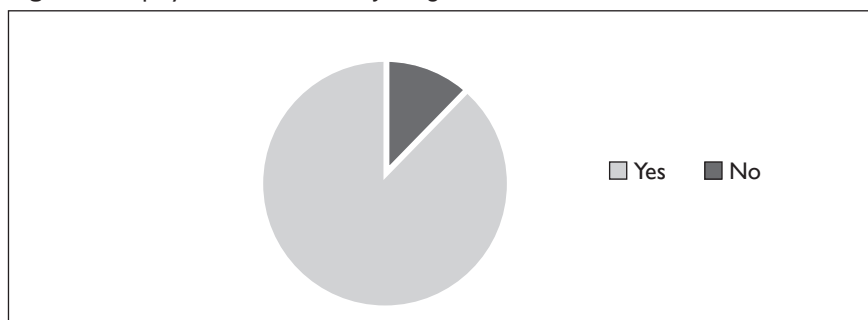
To analyse the change in member's social and economic status through the program

## **Methodology**

Both primary and secondary sources were used for the study. 50 members were taken for the study from 229 units of Kudumbasree in the Kollam district of the State of Kerala. Random sampling was used to take the samples for the study.

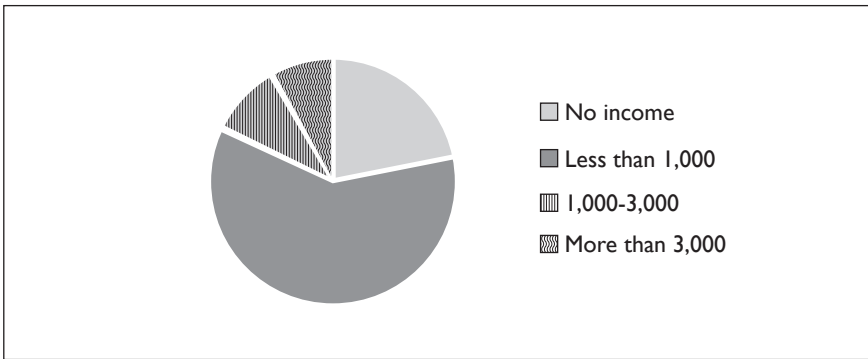
## **Findings**

**Figure- I:** Employment Status before Joining Kudumbasree



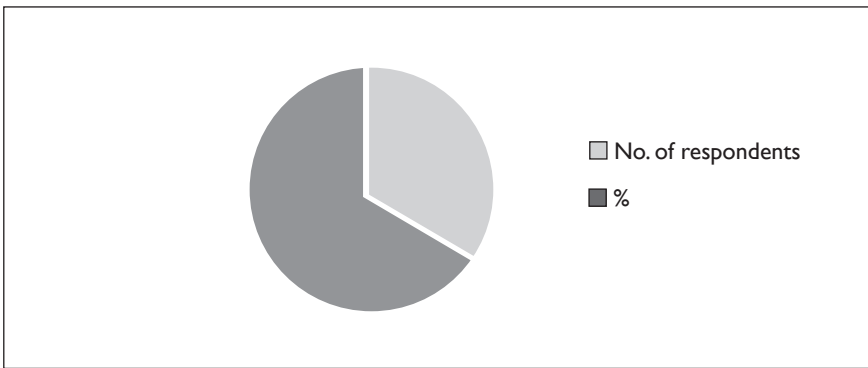
Source: Researcher's Calculation

**Figure-2:** Income of the Respondents before Joining the Kudumbasree Unit



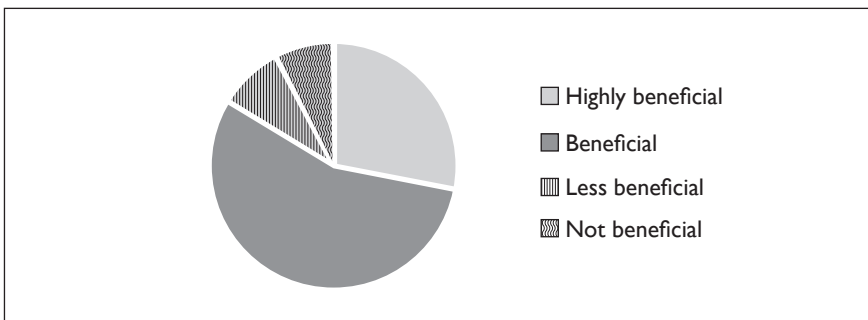
Source: Researcher's Calculation

**Figure-3:** Members who have Taken Internal Loans from Kudumbasree



Source: Researcher's Calculation

**Figure-4:** Is it Beneficial for Your Life?



Source: Researcher's Calculation

## Discussion

Kudumbashree is a women's collective finance program in Kerala that aims to wipe out absolute poverty through women empowerment. The program covers 45.85 lakh families organized under 3.06 lakh neighborhood groups through 1070 community development societies (Christabell, 2022). The

NHGs pool together the small regular savings of their members and give out internal loans to the most deserving member of the group. The repayment of these loans is collected weekly during routine NHG meetings. As of January 2019, the savings of the NHGs accumulated to 44.3 billion rupees (US\$630 million), and that of internal lending is about four times the same.

The study found that the majority of respondents were above 50 years of age. Joining Kudumbasree is found to be beneficial for the well being of the members taken under the study. Majority of the members were using internal loans taken from Kudumbasree. The study found that joining Kudumbashree was beneficial for the well-being of the members taken under the study. The internal loans taken from Kudumbashree acted as a leveler to address the immediate financial shocks of the group members. However, it was also observed that there is a lack of knowledge about banking procedures and misconceptions regarding interest rates among NHG members.

## **Conclusion**

The study observed that the social and economic empowerment had a huge impact on the decision-making capacity of the women. Women's participation in Kudumbashree had a key role to play in this regard. All the women agreed that after joining these social groups, they became more capable of making decisions on their own and also played an important role in their family's decision-making process. The study concluded that Kudumbashree had created a good impact on the well-being of the members taken under the study. The internal loans taken from Kudumbashree acted as a leveler to address the immediate financial shocks of the group members.

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# **An Analysis of Farmers' Awareness of Electronic Agricultural Marketing – A Study of Telangana State**

**Gowribatla Ramya Sree<sup>1</sup>**  
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## **Abstract**

A highly appealing approach has been devised by professionals in the agricultural sector with the aim of achieving a holistic improvement in the general welfare of farmers. The introduction of e-marketing into the agricultural industry has been a transformative innovation that has generated significant attention. The implementation of E-Marketing strategies by farmers has the potential to enhance their financial stability over an extended duration, while facilitating the expansion of market reach for their agricultural commodities. The objective of this study was to enhance understanding of farmers' levels of knowledge and interest pertaining to the marketing of agricultural products. This was achieved by collecting relevant data using a survey. Throughout the process of data collection, primary and secondary sources were considered. The objective of this study was to determine the level of awareness among farmers in the state of Telangana on E-Marketing, through the application of appropriate statistical methodologies and technologies.

**Keywords:** Agriculture, Awareness, E-marketing, e-NAM, ICT

## **Introduction**

To achieve the multiple objectives of companies, individuals are using the technology at a maximum level which has tremendous applications such as processing, exchange of data, sharing information, etc. On the other hand, wireless technology is a new facet of Information Communication and Technology (ICT) that eliminates the installation of cables and devices, etc., and provides support in accessing the internet. This wireless technology

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has become a widely used channel for mobile internet access to connect the world. The intensity of adopting ICT in the operations would lead to facilitate better communication and ensures the delivery of services and information to people who previously lacked access. This new infusion has now attracted the farmers in India. The Government and some private companies are encouraging the farmers in adopting advanced technology to bring transformation in their traditional agricultural processes of Cultivation, Harvesting, and Marketing the Agricultural commodities as well as to climb ahead in their lives. The use of technology in agriculture addresses several challenges and helps in improving existing traditional agriculture into a modern era. Constantly, the use of Technology has become a revolution in accelerating Agriculture and Rural Development.

Through this ICT farmers can obtain abundant information and suggestions to improve their standard of lifestyle in all aspects because ICT facilitates an integrated impact on the farmers' lifestyle by providing various interactions to meet the different necessities of agriculture. These technological integrated platforms are providing different sorts of services to farmers such as sowing, crop protection, improving soil fertility, weather-related advice, and gives alerts to keep prepare themselves to prevent crop loss from the uncertainties such as floods, drought, pests. Now, mobile devices are the easiest way to access the wireless network to acquire the technological services which help them to decide on Agri- related activities i.e., from sowing to selling the crop.

Not only that, but these technological platforms are reliable channels to get maximum support prices (MSPs) for their crop in local markets. On the other hand, the farmers would have access to daily updates regarding fluctuated prices for the Agri commodities in local markets. It is an additional benefit to the farmers to decide whether to sell or to wait until to get a satisfactory price for their crop. This empowerment is an added advantage for farmers to get recognition in their lives and to bring sustainable economic development to the agriculture sector of the nation. Here, the policymakers will play an important role in designing and implementation of agrarian policies to enable the farmers to use the best ways of ICT in gaining knowledge to address the Socio-economic concerned issues.

## **Review of Literature**

Lokeswari, K. (2016). The author explored that how ICT is playing a vital role to address the challenges of Traditional agriculture and encouraging small farmers to uplift their standard of living. ICT helps to improve agricultural technologies with the purpose to empower the rural people to access natural resources, explore effective markets and can deal with

financial activities, etc., The objective of the study framed by the author is to find out the ways, while using ICTs, how the farmers perceiving benefits. For the purpose to collect the Data the author has chosen the tool structured questionnaire and conducted interviews and analyzed through Descriptive study and Pilot study. Thus, the author has attempted to analyze the reaction of farmers towards ICT and observed the farmers' attitudes towards adopting ICT. The results drawn up like the majority of young farmers are willing to make the use of ICTs as reason because more of them are literate and they are utilizing the advantage of the new technology which are available in regional languages. Coming to the other objective, attitudes towards adopting ICT may be positive if they frequently try to use these ICT services then the farmers may be acquainted with technology and feels flexible to overcome the complexities of using these platforms. If the farmers get to know about the fruit's full results, then there will be possibilities to create a positive attitude towards ICT usage. The author has concluded the study by describing that Implementation of ICT is an emerging and significant pillar for agriculture extension which in turn leads to an enhancement of Agriculture & Rural Development. Herewith, it is understood that it is very important to encourage the farmers to accept ICT services by arranging proper infrastructure and offering goods training programs to educate the farmers on how to use ICT tools and techniques.

Qaisar, T. M. (2013). The author has discovered the Impact of ICTs in Strengthening agribusiness in India with a limited scope such as knowing the outcome through the development of ICT in the delivery mechanism. Since the author indicated the key point that ICT plays an effective role in providing information in real-time and efficiently. The author evaluated four information delivery models which may help the farmers in their agricultural decision-making processes as Cultivation, Post-harvest operation, marketing, and Distribution. It is understood that the author focused on the application of ICT in the Supply of information which is helpful to the farmers to obtain the proper knowledge about weather, soil type, the inputs which they need to use, the modern technologies to increase their crop yield as well to know about the smooth supply chain to move their crop yield to a right place at a demanded price to meet the customer needs. The author expressed in his opinion as it is an important reform that requires to make the farmers acquaint about how to use these ICT platforms and also it is needed to educate the farmers to get awareness and required knowledge. Data was collected through the primary survey and tested the data using a Stratified sampling method applying many statistical tools such as the percentage, Mean, ANOVA, Chi-Square, regression by using SPSS 13.0 software. The conclusion has been drawn by indicating that the farmers who are using ICT can make a better-quality decision about their crop yields than the farmers who are not using ICT models.

Qaisar, T. M. et.al (2013): In this study, the author has compared and examined the ability to make a sound decision for their agriculture processes. The author also suggested that the study could be extended to cover up more models according to the way of dissemination of services like SMS-based, Video-based, and Television based views of an integrated ICT model.

M. Balakrishnan, et.al (2018) In this article, the authors identified that there was a need for the adoption and assimilation of new technology for food supply. Agriculture, as one of the major sectors of the economy also required to adopt the technology in the form of e-commerce to deal with an effective supply chain, large-volume trade to achieve the expectations. There is a possibility of cost reduction and deemed enhancement in crop production and marketing and distribution. Authors capsulated the Opportunities and Challenges as well suggested strategies to adopt the framework of e-commerce by different business models. India was in 3rd position of Internet using across the globe. The authors had expected that there will be many extensions in using the internet and would be occupied a second place among the largest users worldwide by 2015. As a fact that we all know the major contribution to GDP is from Agriculture sector needs many changes in the system. Since there is an urgent need of boosting to adopt the innovative approach to achieve a growth rate in agriculture. With which the farmers can improve their skills in the Agri supply chain to meet the demands of supply. As the Authors explained that how the Government of India's theme "Digital India" has influenced and shown the impact of e-commerce application in E-agriculture to enable empowerment.

M. Balakrishnan, Et.al (2018): The authors have limited their research only to discover the intervention of e-commerce in the supply chain which may become more efficient to meet the customer needs. The results derived from the study are, only the change adopters and innovators can serve the customer needs in a trending way to meet a timely demand and can enjoy the fruits of that change. It means some farmers are not showing interest to adopt this new approach. Therefore, by finding out the reasons why some farmers are unwilling to catch this technological trending change in their cultivation, post-harvest processes, and marketing and distribution of their crop yield.

## **Need and Importance of the Study**

The farmer has realized the importance of adopting new techniques of production and is making efforts for more income and higher standards of living. As a consequence, the farmer is no longer benefitting in the market in terms of prices received by him due to dependence on third parties. To get rid of these consequences, the government and private organizations have

come forward to make the market more systematic and easier to make the transactions in usual agricultural markets while adopting the technology. But the farmers are not conversant with the new marketing system and feeling as more complicated. As a result, the cultivator is remaining as an incapable seller by several interferences and selling his produce at an unfavorable place, time and price. Hence, It is important to study that amongst the farmers' community how many are aware of this eMarketing system, How many are showing interest towards to eMarketing and to attend more training programs to learn how to operate in these eMarketing platforms.

### **Objectives**

- To study farmers' awareness towards the use of e-marketing and ICT in agriculture.
- To study the benefits that farmers obtain from using e-marketing.
- To know farmers' interest to acquire knowledge on e-marketing in agriculture.

### **Research Methodology**

The main objective of this study is to know the interests of farmers in using Information and Communication technology in their agricultural activities. The targeted population is the farmers' community. To analyze the data for interpretation relevant statistical techniques and tools have been applied to carry out the study.

Sources of Data: The Sources of Data are available as Primary and Secondary data. For this study the data was collected as follows:

#### **Primary Data**

One of the sources is considering unpublished data which is recorded through the respondents. The questionnaire is the main medium used to collect the primary data which was sent to a known population of approximately 100 members who are residing in different districts of Telangana state. Out of 100 farmers, I could able to collect data from 90 farmers. It is a convenient sample that has been used to study Farmer' awareness of eMarketing in Telangana State.

#### **Secondary Data**

The data has been collected through already published sources like Journals, Magazines, Newspapers, research papers, books, etc. The main sources of such kind of data were databases of research journals. Secondary data helps to develop a conceptual framework for the research.

### *Hypothesis*

- To study farmers' awareness towards the use of E-Marketing and e-NAM.

H0: There is no awareness towards the use of e-marketing and ICT in agriculture

H1: There is awareness towards the use of E-Marketing and e-NAM

- To study the benefits that farmers obtain from using e-NAM

Ho: There is no significant difference in obtaining benefits through e-NAM

H1: There is a significant difference in obtaining benefits through e-marketing

- To know farmers' interest to acquire knowledge on e-marketing in agriculture.

Ho: If Farmers are not interested to acquire knowledge on eMarketing

H1: If Farmers are interested to acquire knowledge on eMarketing

### *Present E-Commerce Platform in Agricultural Sector in India*

The Ministry of Agriculture had formulated a model law on agricultural marketing to bring about marketing reforms in line with emerging trends. This model act enables the establishment of private markets. On April 14, 2017, PM Narendra Modi launched a new initiative – an online platform for farmers, named eNAM (National Agriculture Market). It is a single-window service integrating mandis (agriculture markets) online so that farmers and traders can view all APMC (agriculture produce market committee) – related information and services. This includes commodity arrivals and prices and information relating to trade offers, thereby helping farmers bid for the best price across markets. National Agriculture Market (eNAM) is India's Agri e-trading portal which works in the existing physical regulated wholesale market (known as APMC market) through a virtual platform to create a unified national market for agricultural commodities. It promotes better marketing opportunities for the farmers to sell their Agricultural produce online with a transparent price discovery system and online payment facility. It also promotes prices commensurate with the quality of produce.

The related ITC based E-commerce platforms are AGMARKET is a portal that maintains and publishes information relating to a daily minimum and maximum modal prices for about 300 commodities over 2000 varieties in many regional languages. The other one Agrostar is a mobile-commerce platform through which farmers can procure raw material by giving a

missed call. Besides, there are Digital Green, GSMA, and Reuter's market light, and so on.

### **Data Analysis and Interpretation**

Data was collected through the primary survey and tested the data applying many statistical tools such as Reliability, percentage, Chi-Square, Correlation, and regression by using SPSS software. The questionnaire has given to 90 farmers. The entire sample is collected as a convenient sample to analyze the problem.

- **To study farmers' awareness towards the use of E-Marketing and e-NAM.**

H1(Alternative hypothesis) is accepted. Maximum farmers have given their opinion positively towards the use of e-marketing.

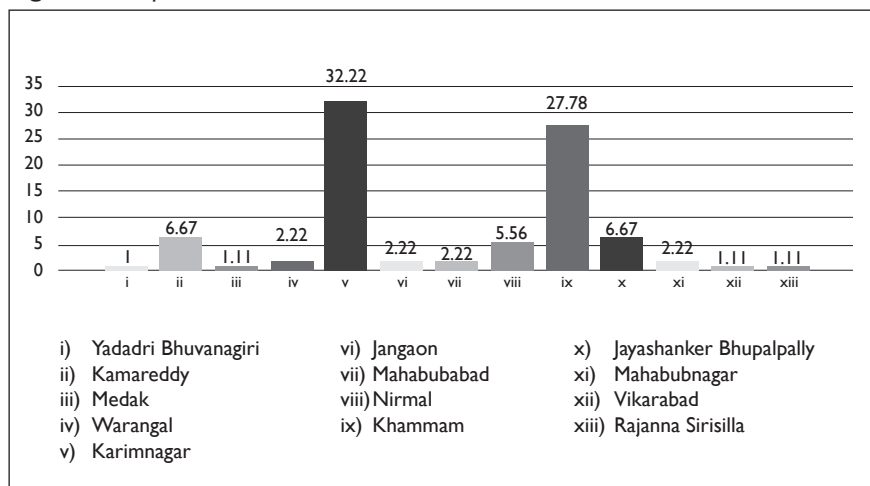
**Table- I:** Geographical Distribution of Samples

District	Mandal	Village
Yadadri Bhuvanagiri	Bommaramaram	Hajipur
	Choutuppal	Koyyalagudem
Jagitial	Jagitial	Korutla
		Jagitial
Jangaon	Palakurthy	Dardepally
		Valmidi
Jayashanker Bhupalpally	Ghanapur(M)	Chelpur
Kamareddy	Kamareddy	Kamareddy
	Nizamsagar	Gunkul
	Thorrur	Nanchari madur
		Venkataporam
	Kuravi	Thorrur
		Kampally
Mahabubabad	Bayyaram	Ramachadrapuram
	Dornakal	Mulakalapally
	Mahabubadab	Jogyathanda
		Gandhipuram
Mahabubnagar	Mahabubnagar	Mahabubnagar
Medak	Medak	Mombojipally
		Pathur
Nalgonda	Munugode	Munugode
	Mamda	Naldurthy
Nirmal	Laxmanchandha	Mallapur

District	Mandal	Village
Vikarabad	Peddemul	Buddaram
		Adikecherla
		Duggapur
		Athakur
		Pothireddy pally
Warangal	Rayaparthi	Moripirala
		Nallabelly
		Narsampet
		Kesupalli
Khammam	Singareni	Karepally
Rajanna Sirisilla	Vemulavada	Kannaram
Karimnagar	Rayakal	Rayakal

Source:Authors collection

**Figure- I: Sample from Each District**



Source:Authors' collection

As shown in Table-1 and Figure-1, a survey was made on a total of 90 farmers from 16 districts. The highest percentage of the sample 32.22% collected from the Mahabubabad and 27.78% was collected from the Vikarabad districts. And 1 to 4 samples have been collected from the remaining districts. It is observed that maximum farmers are educated. The highest population i.e., 31.11% of farmers are having educational status as 10th, and 22.22% and 17.78% are owing qualifications as Graduation and Postgraduation as shown in Table-2.

**Table-2:** Percentage of Farmers by Education

Qualification	Percentage	Count
Below 10 <sup>th</sup>	18.89	17
10 <sup>th</sup>	31.11	28
12 <sup>th</sup>	8.89	8
Graduation	22.22	20
Post-Graduation	17.78	16
Illiteracy	1.11	1
	100%	90

Source: Authors' collection

The presented table provides an overview of the educational credentials possessed by the respondents, demonstrating a varied distribution among the sample population under examination. The qualification that is most commonly observed is at the “10<sup>th</sup>” level, comprising 28 persons, which accounts for 31.11% of the whole population. The “Graduation” category, which has 20 respondents (22.22%), is seen in close proximity. The qualification often known as “Post-Graduation” is the third most frequently attained academic credential, with a total of 16 persons, accounting for 17.78% of the sample population. The qualifications of “Below 10<sup>th</sup>” and “12<sup>th</sup>” were reported by 17 (18.89%) and 8 (8.89%) of the respondents, respectively. It is noteworthy that one participant has been categorized as “Illiterate,” accounting for 1.11% of the overall sample. The cumulative percentages for each category of qualifications collectively amount to 100%, indicating a full dispersion of educational levels throughout the examined population. The provided data offers significant insights into the educational diversity observed within the sample, underscoring the importance of employing customized techniques in research or interventions that consider the various credentials present.

**Table-3:** Showing the Valid Cases and Missing Values

Case Processing Summary

Cases		Educational influence on E-Marketing knowledge
Valid	N	90
	Percent	100.0%
Missing	N	0
	Percent	0.0%
Total	N	90
	Percent	100.0%

Source: Authors' Collection

The case processing summary table presents a comprehensive overview of the data, specifically focusing on the impact of education on E-Marketing



expertise. The analysis encompasses a comprehensive sample size of 90 instances, with each case reflecting a farmer's individual response to a specific inquiry regarding their level of familiarity with E-Marketing. It is worth noting that the dataset under consideration does not contain any missing values.

**Table-4:** Table Showing the Count of Farmers having Knowledge on E-Marketing  
**Count of Farmers having Knowledge on E-Marketing by Education**

Education	I I) a) Do you know the business of E-Marketing		Total
	Yes	No	
Below 10	0	16	16
10	7	21	28
12th	3	5	8
Graduation	21	1	22
Post-Graduation	16	0	16
Total	47	43	90

Source: Authors Collection

The presented table provides a comprehensive analysis of farmers' understanding of E-Marketing, categorized according to their educational attainment. The educational classifications encompass the categories of "Below 10<sup>th</sup>," "10<sup>th</sup>," "12<sup>th</sup>," "Graduation," and "Post-Graduation." The table presents the number of farmers who responded positively ("Yes") or negatively ("No"). Additionally, the total count for each category is presented. The survey results indicate that farmers with education levels below 10 lack understanding in the field of E-Marketing. Specifically, all 16 respondents provided negative responses when asked about their familiarity with E-Marketing.

Within the educational category labeled as "10<sup>th</sup>," a total of 7 farmers provided affirmative responses, thereby demonstrating their possession of knowledge. Conversely, 21 farmers replied negatively within the same category. The education category labeled as "12<sup>th</sup>" indicates that three farmers possess knowledge in the field of E-Marketing, whereas five farmers lack understanding in this area. The data reveals that a substantial proportion of farmers possessing a "Graduation" level of education (21 out of 22) possess knowledge in the domain of E-Marketing, with only one farmer lacking such knowledge. Likewise, within the "Post-Graduation" classification, it is noteworthy that all 16 farmers possess a comprehensive understanding of E-Marketing. Out of a total of 90 cases, it is seen that 47 farmers possess understanding about E-Marketing, however the other 43 farmers do not.

The count table shows farmers' E-Marketing expertise by education level. The large number of farmers with "Graduation" and "Post-Graduation" education expressing expertise shows that higher education is often connected with stronger E-Marketing awareness. Based on this fact, the chi-square tests systematically evaluate the association between education and E-Marketing awareness. The chi-square results show that education is crucial to farmers' E-Marketing comprehension. This link is robust because all three statistical tests (Pearson Chi-Square, Likelihood Ratio, and Linear-by-Linear link) yield extremely significant chi-square values. These findings imply farmers' education and E-Marketing awareness are not independent variables.

**Table-5:** Chi-Square Test Onfarmers' Education and E-Marketing Awareness

Chi-Square Tests

	Pearson Chi-Square	Likelihood Ratio	Linear-by-Linear Association	N of Valid Cases
<b>Value</b>	57.618a	74.377	53.874	90
<b>df</b>	4	4	1	
<b>Asymptotic Significance (2-sided)</b>	<.001	<.001	<.001	

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.82.

Source: Authors collection

The chi-square tests are utilized to evaluate the relationship between levels of education and farmers' comprehension of E-Marketing. The three chi-square test statistics that have been provided are Pearson Chi-Square, Likelihood Ratio, and Linear-by-Linear Association.

The Pearson chi-square value of 57.618, with 4 degrees of freedom, demonstrates high significance ( $p < .001$ ). This indicates a substantial correlation between education levels and E-Marketing knowledge. The Likelihood Ratio Value of 74.377, with 4 degrees of freedom, exhibits great significance ( $p < .001$ ), hence establishing the robust correlation between education and E-Marketing awareness. The linear-by-linear association value of 53.874 with 1 degree of freedom demonstrates statistical significance ( $p < .001$ ), suggesting a linear trend in the relationship between education levels and E-Marketing knowledge.

It is important to acknowledge that within the analysis, there are two cells, representing 20.0% of the total, that have predicted counts below 5. The lowest expected count among these cells is 3.82. This suggests that the trustworthiness of the chi-square test results for these particular cells may be limited due to the low predicted counts. Therefore, the chi-square tests

yield compelling evidence supporting a statistically significant association between levels of education and farmers’ comprehension of E-Marketing. These findings indicate that education exerts a large influence on the level of awareness within this particular domain.

*To Study the Benefits that Farmers Obtain from Using E-Marketing*

The research paper concerning the advantages of electronic marketing for farmers encompasses an analysis of the profound changes brought about by internet platforms and digital marketing techniques in the agricultural sector. This study intends to shed light on the advantages of e-marketing tools and strategies for farmers, such as greater customer connection and the absence of mediators, as well as increased market access and profitability. It is possible that gaining a comprehensive understanding of the effects that e-marketing has on farmers could provide valuable insights into the process of agricultural modernization as well as the opportunities for supporting sustainable development in this essential industry.

**Table-6:** Table Showing the Count of Farmers having Knowledge on e-NAM  
**Count of Farmers having Knowledge on eletronic National Agricultural Marketing by Education**

Education	Knowledge on e-NAM		Total
	Yes	No	
Below 10	1	15	16
10	7	21	28
12th	0	8	8
Graduation	3	19	22
Post-Graduation	6	10	16
Total	17	73	90

Source:Authors collection

This table shows how much farmers know about Electronic National Agricultural Marketing (e-NAM) based on the level of education they’ve had. The educational classifications encompass the categories of “Below 10<sup>th</sup>,” “10<sup>th</sup>,” “12<sup>th</sup>,” “Graduation,” and “Post-Graduation.” The table presents the frequency distribution of farmers’ responses, categorized by educational level, regarding their knowledge on e-NAM. The responses are divided into two categories: positive (“Yes”) and negative (“No”). Additionally, the total count for each category is also shown.

Within the educational level categorized as “ Below 10<sup>th</sup>,” it has been observed that an only 1 farmer exhibits familiarity with e-NAM, whereas a total of 15 farmers lack awareness regarding this subject matter. The education category categorized as “10<sup>th</sup> “ indicates that out of the whole

sample of farmers, 16 individuals possess information regarding e-NAM, while the remaining 12 farmers lack awareness about this particular subject matter. Within the educational category of “12th grade,” it is noteworthy that 5 farmers possess knowledge regarding e-NAM and 3 farmers have lack of knowledge on e-NAM. Out of a sample of 22 farmers who possess a “Graduation” level of education, it is seen that just 19 individuals possess understanding of the e-NAM system, while the remaining 3 farmers do not possess such information. Within the “Post-Graduation” classification, it is observed that 14 out of 16 farmers possess familiarity with e-NAM, while the remaining 2 farmers lack such expertise.

Overall, out of the total 90 cases, a majority of 55 farmers exhibit knowledge about e-NAM, while the remaining 35 farmers lack such awareness. This suggests a positive correlation between higher educational levels and a greater likelihood of farmers having knowledge about e-NAM. The findings underscore the importance of education as a contributing factor to farmers’ awareness of modern agricultural marketing systems like e-NAM

**Table-7:** Table showing Frequencies of Cost Benefit availed by farmers using e-NAM

Scale for Cost-Benefit	Aware on e-NAM		Total
	Yes	No	
Strongly disagree	1	0	1
Disagree	1	0	1
Neutral	3	1	4
Agree	49	16	65
Strongly agree	15	4	19
Total	69	21	90

Source: Authors collection

The table presents a detailed analysis of the frequencies reported by farmers in relation to the perceived cost-benefit derived from the utilization of e-NAM. The cost-benefit scale, which spans from “Strongly Disagree” to “Strongly Agree,” is cross-tabulated with the level of awareness among farmers regarding e-NAM. It is worth noting that there is a low level of disagreement among farmers on the perceived cost-benefit of e-NAM, as seen by the fact that only one farmer each strongly disagrees or disagrees with this notion. Within the “Neutral” classification, three farmers express agreement with the aforementioned remark, while one farmer maintains a neutral stance. The prevailing proportion of farmers can be classified under the “Agree” group, as indicated by 49 respondents who affirm the cost-benefit of e-NAM, whereas 16 respondents voice disagreement. Furthermore, within the “Strongly Agree” classification, a total of 15

farmers express a strong affirmation towards the cost-benefit aspect, whereas 4 farmers hold a contrary viewpoint. The aggregate data indicates that among a sample size of 90 instances, 69 farmers had knowledge about the electronic National Agriculture Market (e-NAM), while 21 farmers lack information regarding this platform. This comprehensive analysis provides useful insights into the multifaceted viewpoints of farmers regarding the perceived cost-benefit analysis related with their adoption of e-NAM. The consensus among the majority indicates a favorable impression of the benefits provided by e-NAM, highlighting its potential to improve the economic outcomes of farmers.

**Table-8:** Table Showing Influence of e-NAM Awareness on Farmers Potential Development

Scale for Potential Development	19. Aware on e-NAM		Total
	Yes	No	
Strongly disagree	1	0	1
Disagree	1	1	2
Neutral	1	0	1
Agree	44	13	57
Strongly agree	22	7	29
Total	69	21	90

Source: Authors collection

The table presents the distribution of farmers’ replies on the scale measuring prospective development, with respect to their level of awareness on e-NAM. The scale encompasses a range of categories spanning from “Strongly Disagree” to “Strongly Agree.” Within the category labeled “Strongly Disagree,” it is observed that a single farmer expresses a strong disagreement, while no farmers exhibit a mere disagreement, hence demonstrating a limited presence of negative sentiment. Within the “Disagree” category, there is a farmer who has a dissenting viewpoint, while another farmer indicates concurrence, so highlighting a subtle variance in perspectives. Within the “Neutral” category, it is seen that a single farmer expresses agreement, while no farmers express disagreement, indicating a prevailing sense of neutrality. The prevailing sentiment among respondents can be categorized as “Agree,” with 44 farmers expressing support for possible development, while 13 farmers hold a contrary viewpoint. Furthermore, within the category denoted as “Strongly Agree,” a total of 22 farmers expressed a strong agreement, whereas 7 farmers had a contrary viewpoint and disagreed. Out of the overall sample size of 90 instances, it is seen that 69 farmers possess knowledge of the electronic National Agriculture Market (e-NAM), however 21 farmers lack information regarding this platform. This analysis offers significant findings about the

perspectives of farmers regarding the prospective implications of e-NAM. It is noteworthy that a majority of farmers expressed agreement or strong agreement, indicating a favorable perspective on the developmental effects of e-NAM.

**Table-9:** E-Marketing Knowledge and Its Effect on Mediator Elimination

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	45	50.0	50.0	50.0
	No	45	50.0	50.0	100.0
	Total	90	100.0	100.0	

Source: Authors collection

The presented table provides a concise overview of the frequency distribution according to the responses received for a specific category. In the present scenario, the subject matter concerns a dichotomous variable, which is typically characterized by a yes/no question or a binary decision.

A total of 45 respondents, accounting for 50.0% of the overall sample, indicated their agreement. Yes: An equal number of respondents, specifically 45 individuals, accounting for 50.0% of the total, provided negative responses. The columns labeled “Percent” provide information on the distribution of percentages within each response category. Both the affirmative response “Yes” and the negative response “No” are equally represented, each comprising 50% of the total participants.

The columns labeled “Valid Percent” reflect the distribution of percentages, excluding any replies that are missing or invalid. Given the absence of any missing data in this particular case, the valid percentage distribution remains consistent with the overall % distribution. The column labeled “Cumulative Percent” displays the cumulative proportion of replies for each category. Based on the data from the final row, it is observed that 50.0% of the participants responded affirmatively, while the cumulative percentage of 100.0% signifies that all respondents have furnished correct answers. Therefore, the table provides a concise representation of a symmetrical distribution, wherein an equal number of participants both confirm and refute a specific condition or assertion. This type of distribution is commonly observed in situations involving binary choices or queries that offer two separate response alternatives.

The above tables explain that farmers have revealed their awareness of the e-Marketing business. Due to a lack of proper knowledge as to how to use and how to retrieve the information, maximum farmers are unable to use the agricultural-related electronic medium to fulfill their needs. Some farmers have an idea about the benefits obtained through this e-marketing.

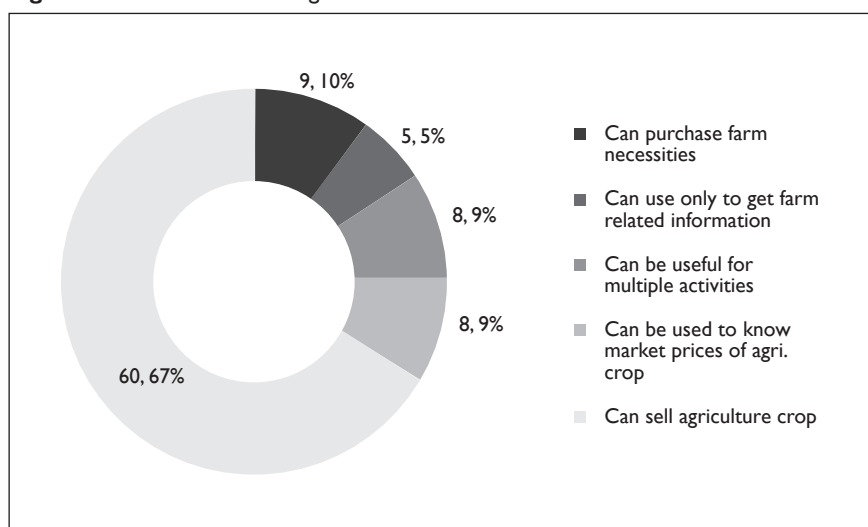
So, they are expected to get benefits such as the exclusion of mediators, cost-benefit, which means they can reduce the expenditure and could get maximum supporting price while marketing. It leads towards betterment in the farmers' income and development of the farmers' community and as a result, there would be sustainable growth in the welfare of the farmers. The farmers have expressed their views that if there was the use of technological platforms to sell the farm produce there would be no involvement of mediators. Maximum farmers strongly agreeing to the adoption of electronic agriculture functions which may lead towards their development in all aspects. More than 75 farmers agreed that using electronic platforms may bring welfare to farmers' communities and help in improving their standard of living. Hence, it leads to an emerging change in agricultural marketing if the Department of Agriculture and allied departments show the care to educate the farmers on how to participate with e-marketing platforms.

**Table-10:** Frequencies of Various Uses of Electronic Agricultural Markets

	Frequency	Percent
Can purchase farm necessities	9	10
Can use only to get farm related information	5	6
Can be useful for multiple activities	8	9
Can be used to know market prices of agri. crop	8	9
Can sell agriculture crop	60	67
Total	90	100

Source: Authors collection

**Figure-2:** Uses of Electronic Agricultural Markets



Source: Authors' collection

To measure the farmers' perception towards deriving benefits through the use of e-marketing H1 (Alternative hypothesis) is accepted. Maximum farmers have given their opinion positively towards the use of e-marketing.

The frequency table and pie chart effectively depict the utilization of Electronic Agricultural Markets, providing a clear visual representation of the distribution of replies among the farmers questioned. A wide array of applications can be observed, with various segments illustrating distinct objectives. The predominant segment of the pie chart, accounting for 67%, highlights the significant majority of participants who employ these digital channels for the purpose of marketing agricultural produce. Furthermore, it is worth mentioning that smaller but significant portions of the population utilize these platforms for various purposes. For instance, approximately 10% of users employ them for the procurement of essential farm supplies, while around 6% utilize them as a means to obtain knowledge relevant to farming. Additionally, 9% of users recognize the versatility of these platforms, utilizing them for different activities. Another group, which also accounts for 9% of the total, represents farmers who utilize Electronic Agricultural Markets as a means to acquire up-to-date information regarding market prices for agricultural crops. This graphical depiction offers a concise and enlightening summary of the several methods via which farmers interact with electronic platforms in the agricultural market domain, with the prominent and central utilization being the sale of commodities.

### *To Know Farmers' Interest to Acquire Knowledge on E-marketing in Agriculture*

To measure the farmers' interest towards learning more on eMarketing H1(Alternative hypothesis) is accepted. Maximum farmers have given their opinion positively towards acquiring knowledge about the use of e-marketing.

**Table- I I :** Farmers Responses on Attending Awareness Program on Electronic Agricultural Marketing

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	76	84.4	84.4	84.4
No	14	15.6	15.6	100.0
Total	90	100.0	100.0	

Source: Authors collection

The table, entitled "Farmers' Responses on Attendance at Electronic Agricultural Marketing Awareness Programs," offers significant insights into the level of involvement of farmers in awareness programs.



Among the entirety of the 90 participants, a notable majority of 84.4% (76 individuals) have taken part in educational initiatives for electronic agriculture marketing. Conversely, a minority of 15.6% (14 individuals) have not engaged in such programs. The findings suggest that the surveyed farmers exhibit a notable degree of interest and engagement in seeking knowledge pertaining to electronic agricultural marketing.

**Table-12:** Problem You Faced by Farmers During Attending the Training Program

	Frequency	Percent	Valid Percent	Cumulative Percent
Illiteracy problem	8	8.9	8.9	8.9
Language problem	7	7.8	7.8	16.7
Did not attend any training program	51	56.7	56.7	73.3
Problem in receiving information	6	6.7	6.7	80.0
Not able to understand	7	7.8	7.8	87.8
No problem	11	12.2	12.2	100.0
Total	90	100.0	100.0	

Source: Authors collection

The data shown above pertains to the “Challenges Encountered by Farmers While Participating in the Training Program.” It delineates a range of difficulties experienced by farmers. A significant proportion of farmers, specifically 56.7%, indicated that they did not participate in any training programs. Additional hurdles encompass issues related to illiteracy, which accounts for 8.9% of the overall challenges. Language barriers pose a significant obstacle, including 7.8% of the challenges. Difficulties in accessing information contribute to 6.7% of the challenges, while challenges in comprehension account for 7.8% of the total obstacles faced. In contrast, a total of 12.2% of farmers indicated that they did not encounter any difficulties over the duration of the training session. This observation illustrates the complex and varied difficulties that farmers may encounter, emphasizing the necessity for customized strategies in addressing the numerous challenges associated with participation in training programs.

**Table-13:** Farmers Responses on Intention to use eNAM Platform to Sell their Crop

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	70	77.8	77.8	77.8
No	20	22.2	22.2	100.0
Total	90	100.0	100.0	

Source: Authors collection

The table titled “Farmers’ Responses on Intention to Utilize the eNAM Platform for Crop Sales” examines the intentions of farmers with regards

to utilizing the eNAM platform for the purpose of selling their crops. A significant proportion of farmers, specifically 77.8% (70 farmers), have expressed their intention to utilize the eNAM platform as a means to market their agricultural produce. Conversely, a smaller percentage of farmers, comprising 22.2% (20 farmers), have indicated no intention to do so. This finding suggests that a substantial majority of farmers exhibit a favorable predisposition towards the adoption of electronic platforms for the selling of their agricultural produce.

In a nutshell the amalgamation of these three tables provides a thorough depiction. The individuals demonstrate significant engagement in awareness initiatives, shed light on the various obstacles encountered during training, and express a favorable inclination among farmers to adopt digital platforms for the sale of their agricultural produce, underscoring the intricate dynamics associated with the shift towards electronic marketing practices in agriculture.

## **Findings**

It has been observed, though the farmers having 10<sup>th</sup> qualifications are also involving as similar like well-educated farmers as graduates and postgraduates. Hence, it is understood that to deal with farm-related works through ICT applications and to have an awareness of electronic markets and related platforms (e-Marketing business) it is not necessary to possess higher qualifications. The farmers who are living in towns are having at least small information about the eNAM, contract farming, and also about private ICT applications which can be used to sell, purchase, and get the information of prices as well as other farm-related information. 26.67% of farmers are unable to say what type of operations can do through these e-markets. Hence, to know about these e-markets and their functionalities it is necessary to conduct awareness programs for farmers. 77.8% of farmers have shown interest to adopt the e-market. If they will get an opportunity of hands-on experience on this e-markets. 83.33% of farmers have expressed their views as if once they get to know about e-markets they can sell their crop and purchase necessary inputs for agricultural works and can reduce expenditure which used to face in regular (traditional) marketing. And also opined that this good initiative may help them to yield good income to survive better than the earlier days.

## **Conclusion**

There is a strong belief that the widespread adoption of the e-marketing system in the agriculture sector will result in potential improvement in the economic condition of farmers. This paper analyzed that to have sustainable growth in farmers' lives and the agriculture sector as a whole,

all the stakeholders of agriculture must have a positive attitude to know about the new things which are happening in the walks of a new era. There are assorted government initiatives and private e-market platforms as one-stop ICT solutions for farmers to access and utilize the farm-related functionalities and more. Several challenges from technical, societal, and policy perspectives are foreseen in the implementation of solutions based on the proposed framework. We trust that on-field deployment of this solution would make agricultural marketing conversant, improve the economic condition of farmers and encourage them to carry on with their occupation.

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# Strengthening Health Networks: A Comprehensive Study of Healthcare Infrastructure in Raichur District

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**Deepika Devaramani<sup>2</sup>**

## Abstract

This article provides a comprehensive analysis of the Raichur District, Karnataka, healthcare system, focusing on various factors that are essential to the area's health ecosystem. Our analysis provides a detailed understanding of healthcare accessibility at the local level by considering hospital beds according to Taluka. Furthermore, a comparison between Taluka and District Hospitals sheds light on the district's tiered healthcare system. The research goes beyond allopathic treatment and examines Ayush Hospitals, which blend conventional medical methods with age-old ones. By classifying hospitals according to who owns them and making a distinction between government and private healthcare facilities, it further breaks down the terrain. By assessing the combined strength of both sectors, a comprehensive picture of the healthcare environment is produced that includes all hospitals and beds available. It examines the workforce, paying close attention to the quantity of physicians working in government and private institutions, in recognition of the core of healthcare. The results are intended to provide a thorough overview of the healthcare system in Raichur District as well as act as a guide for upcoming health-related projects. This study helps policymakers, healthcare providers, and community stakeholders make educated decisions and build focused initiatives to strengthen the health networks in the region by highlighting the study's strengths and limitations. The article's ultimate goal is to promote an effective and inclusive healthcare system that caters to the particular requirements of the varied people in Raichur District.

**Keywords:** Distribution, Healthcare, Infrastructure, Govt Hospital and Private Hospital

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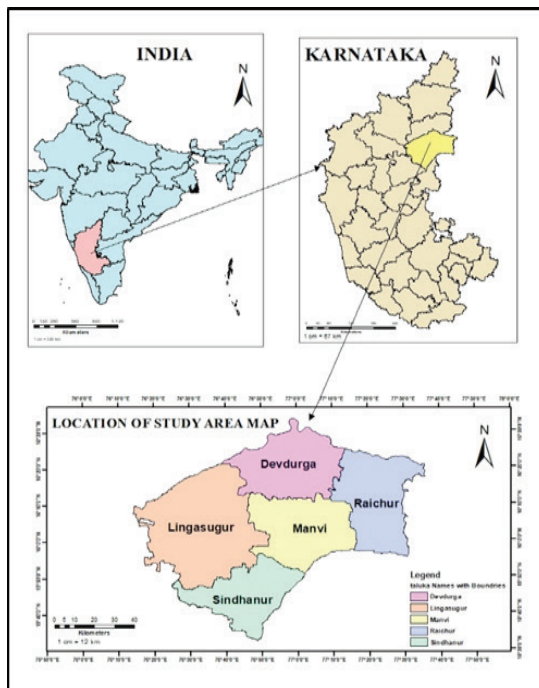
## Introduction

The study “Strengthening Health Networks: A Comprehensive Study of Healthcare Infrastructure in Raichur District” explores the complexities of the healthcare system in Raichur District, Karnataka, India. Raichur emphasizes the significant impact that healthcare effectiveness has on the general well-being of its citizens because of its multicultural population and rich cultural history. The study delves deeply into a number of healthcare delivery topics, such as the distribution of hospitals and beds, the hierarchical structure of Taluka and District Hospitals, and the amalgamation of modern medicine with ancient Ayush methods. The research distinguishes between government and commercial healthcare institutions and looks at how these sectors cooperate or compete to address healthcare requirements by closely examining ownership dynamics.

A review of hospitals and bed availability in both sectors provides insight into how strong the district’s healthcare system is as a whole. In addition, the study assesses the human element of healthcare by determining the number of doctors working in the public and private sectors, emphasizing the critical role that medical professionals play in supporting the district’s health resilience. In addition to providing a thorough synopsis of Raichur’s healthcare system, the report intends to function as a roadmap for upcoming improvements. The research aims to advise healthcare practitioners,

inform policy decisions, and empower local communities in their quest of greater health and well-being by providing insights into possibilities, problems, and strengths.

**Figure-1**



## Study Area

The northeastern Indian state of Karnataka, namely the Raichur District, is our area of investigation. The area spans a varied topography, lying between  $15.00^{\circ}$  N and  $16.10^{\circ}$  N latitude and  $75.46^{\circ}$  E and  $77.16^{\circ}$  E longitude.

Raichur, which is bordered to the north and south by the Krishna and

Tungabhadra rivers, is known for its lush riverine scenery. With a vast expanse of 14,013 square kilometers, the district offers a variety of climates. Raichur's climate is tropical, with scorching summers and mild winters. The district's climate and river systems influence the socioeconomic dynamics of the area as well as agricultural techniques. We examine the healthcare system in light of this geographic and climatic variety, acknowledging the impact of location and environment.

## Objectives

- To analyse the Distribution and Adequacy of Healthcare Facilities
- To examine the presence and impact of Ayush hospitals within Raichur District
- To compare and contrast the healthcare services offered by government hospitals and private hospitals.

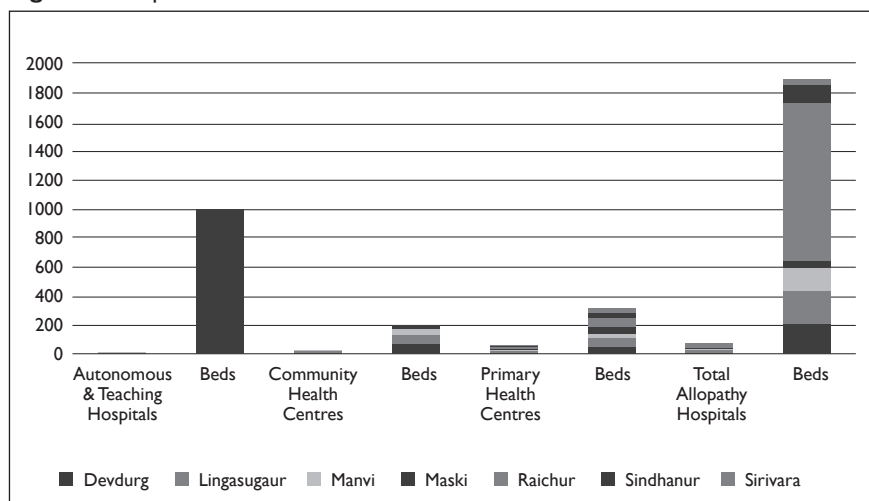
## Results and Discussion

**Table-1:** Taluka wise Hospitals and the number of beds in Raichur District

Sl. No.	Taluka	Autonomous & Teaching Hospitals	Beds	Community Health Centres	Beds	Primary Health Centres	Beds	Total Allopathy Hospitals	Beds
1	Devdurg	0	0	2	60	8	48	11	208
2	Lingasugaur	0	0	2	60	10	60	13	220
3	Manvi	0	0	1	30	4	24	6	154
4	Maski	0	0	0	0	8	48	8	48
5	Raichur	2	1000	1	30	9	54	12	1084
6	Sindhaur	0	0	0	0	8	48	9	148
7	Sirivara	0	0	0	0	3	18	3	18
	Total	2	1000	6	180	50	300	62	1880

Source: District At a Glance: Raichur District-Statistical Report - FY 2019-20

**Figure-2:** Hospitals and the Number of Beds



### Healthcare Infrastructure in Raichur District - Taluka-wise Distribution:

An overview of the district hospitals and Taluka hospitals in the Raichur District is given in Table-1. Notably, there are four Taluka Hospitals with 400 beds total, with one Taluka Hospital each at Devdurg, Lingasugaur, Manvi, and Sindhanur. Nevertheless, there are presently no district hospitals or Taluka hospitals in Sirivara, Maski, or Raichur. The lack of District Hospitals in the district points to a centralized healthcare system that might rely on better hospitals in nearby areas. This analysis addresses the existing disparity within Raichur's talukas and emphasizes the necessity of strategic planning to guarantee equal healthcare provision.

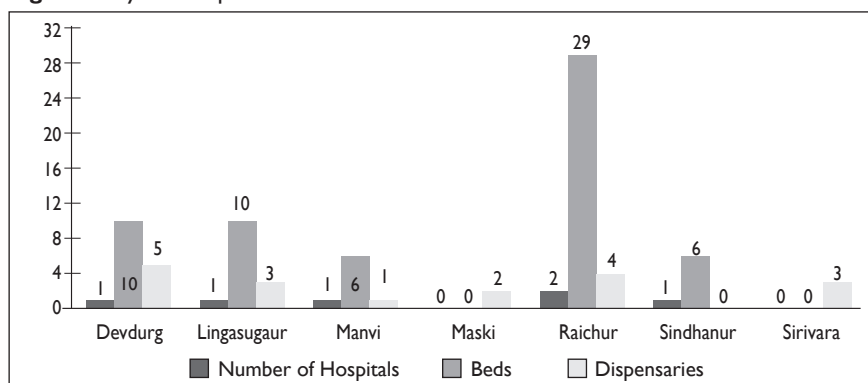
In conclusion, the district comprises two autonomous and teaching hospitals, a thousand CHC beds, fifty PHCs, and 1,880 beds total. Raichur Taluka is notable for having a comprehensive healthcare system, especially when it comes to teaching hospitals and CHC beds. A greater number of PHCs provides access to primary healthcare, as demonstrated by Lingasugaur and Manvi.

**Table-2: Ayush Hospitals in Raichur District**

Sl. No.	Taluka	No.	Beds	Dispensary
1	Devdurg	1	10	5
2	Lingasugaur	1	10	3
3	Manvi	1	6	1
4	Maski	0	0	2
5	Raichur	2	29	4
6	Sindhanur	1	6	0
7	Sirivara	0	0	3
Total		6	61	18

Source: District at a Glance: Raichur District-Statistical Report - FY 2019-20

**Figure-3: Ayush Hospitals in Raichur District**



On the other hand, because Maski and Sirivara lack CHCs or autonomous teaching hospitals, they might require focused initiatives to build their

healthcare infrastructure. This thorough study sheds light on the healthcare distribution system's advantages and limitations in the Raichur District.

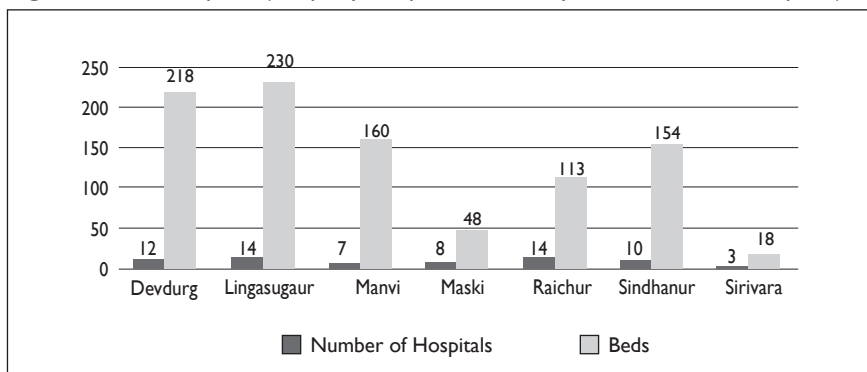
Table-2 and Figure-3 present a comprehensive summary of the Raichur District's healthcare system, emphasizing Ayush institutions, bed capacity, and dispensaries located in several talukas. Raichur has the most Ayush Hospitals out of all the talukas – two – while Devdurg, Lingasugaur, Manvi, and Sindhanur each have one. But there aren't any Ayush hospitals in the talukas of Maski or Sirivara. There are six Ayush hospitals in the district, with 61 beds spread throughout the talukas. Raichur has the most beds, 29; Devdurg and Lingasugaur are next with 10 each; Manvi and Sindhanur are last with 6 each. With 18 dispensaries, Devdurg has the most (5), followed by Sirivara (3), Maski (2), Raichur (4), Lingasugaur (3), and Manvi (1); Sindhanur has none. Even though Ayush facilities are widely scattered, it is concerning that they are not present in Maski and Sirivara, which affects locals' access to alternative healthcare alternatives.

**Table-3:** Govt Hospitals (Allopathy Hospitals + Indian System of Medicine Hospitals)

Sl. No.	Taluka	No.	Beds
1	Devdurg	12	218
2	Lingasugaur	14	230
3	Manvi	7	160
4	Maski	8	48
5	Raichur	14	113
6	Sindhanur	10	154
7	Srivara	3	18
Total		68	1941

Source: District at a Glance: Raichur District-Statistical Report - FY 2019-20

**Figure-4:** Govt Hospitals (Allopathy Hospitals + Indian System of Medicine Hospitals)



The given data in the Table-3 and Figure-4 presents information on government hospitals in Raichur district, including allopathy hospitals and Indian System of Medicine hospitals (Ayurveda, Homeopathy, etc.).



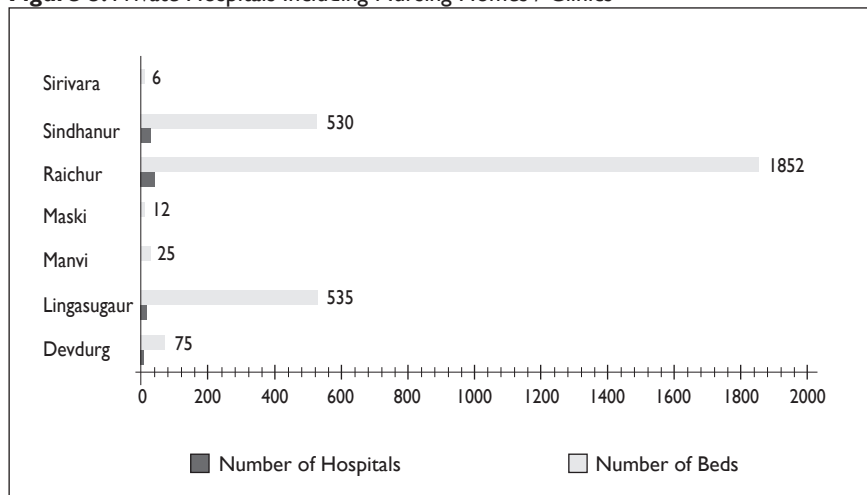
Tables-3 and 4 provide a brief summary of the number of beds available in hospitals in the various talukas in Raichur District. With 14 and 12 hospitals, respectively, Lingasugaur and Devdurg are in the lead and have made a substantial contribution to the district's 68 total hospitals. With 230 beds, Lingasugaur has the most bed capacity, followed by Devdurg (218 beds). Raichur has the greatest number of hospitals (14), however its bed capacity is relatively smaller (113). A total of 1,941 beds can be accommodated throughout the district. This analysis sheds light on how hospital beds are distributed throughout Raichur District's talukas, highlighting differences in bed-to-hospital ratios.

**Table-4:** Private Hospitals Including Nursing Homes/Clinic

Sl. No.	Taluka	No.	Beds
1	Devdurg	5	75
2	Lingasugaur	18	535
3	Manvi	2	25
4	Maski	2	12
5	Raichur	40	1852
6	Sindhanur	28	530
7	Sirivara	1	6
Total		96	3035

Source: District at a Glance: Raichur District-Statistical Report - FY 2019-20

**Figure-5:** Private Hospitals Including Nursing Homes / Clinics



The healthcare facilities in the various talukas of Raichur District are shown in tables 4 and 5. With a significant number of hospitals (40) and beds (1852), Raichur taluka stands out as a significant center for healthcare. Following closely after with 18 hospitals and 535 beds, Lingasugaur makes a substantial contribution to the district's total healthcare capacity.

Notable healthcare infrastructure can also be found at Sindhanur and Devdurg, where there are five hospitals with 75 beds in Devdurg and 28 hospitals with 530 beds in Sindhanur. Nonetheless, the relatively small number of healthcare facilities in Manvi, Maski, and Sirivara suggests possible locations for focused infrastructure development in the healthcare sector to guarantee fair access throughout the region. With 3035 beds available altogether across all talukas, Raichur District is well-prepared for healthcare in general.

**Total-5:** Number of Hospitals and Beds (Govt + Private)

Sl. No.	Taluks	No	Beds	Percentage
1	Devdurg	17	293	5.89
2	Lingasugaur	32	765	15.37
3	Manvi	9	185	3.72
4	Maski	10	60	1.21
5	Raichur	54	2965	59.59
6	Sindhanur	38	684	13.75
7	Sirivara	4	24	0.48
<b>Total</b>		<b>164</b>	<b>4976</b>	<b>100</b>

Source: District at a Glance: Raichur District-Statistical Report - FY 2019-20

**Figure-6:** Total Number of Hospitals and Beds (Govt. + Private)

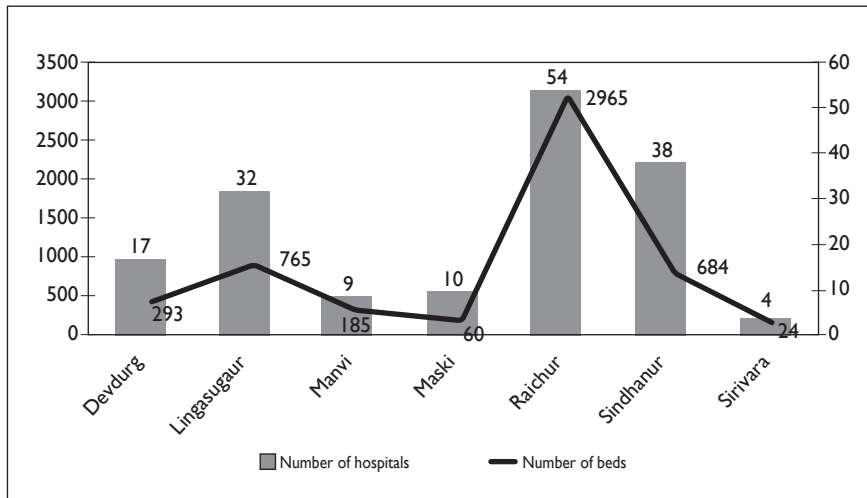


Table-5 and Figure-6 provide a comprehensive overview of hospitals and beds in Raichur District talukas. Raichur taluka emerges as a healthcare hub with the highest number of hospitals (54) and beds (2,965), constituting 59.59% of the total district beds. Lingasugaur and Sindhanur account for 29.12% of the beds, demonstrating a strong healthcare infrastructure. While Sirivara has the fewest hospitals (4) and beds (24), showing poor healthcare availability, Devdurg, Manvi, and Maski exhibit moderate

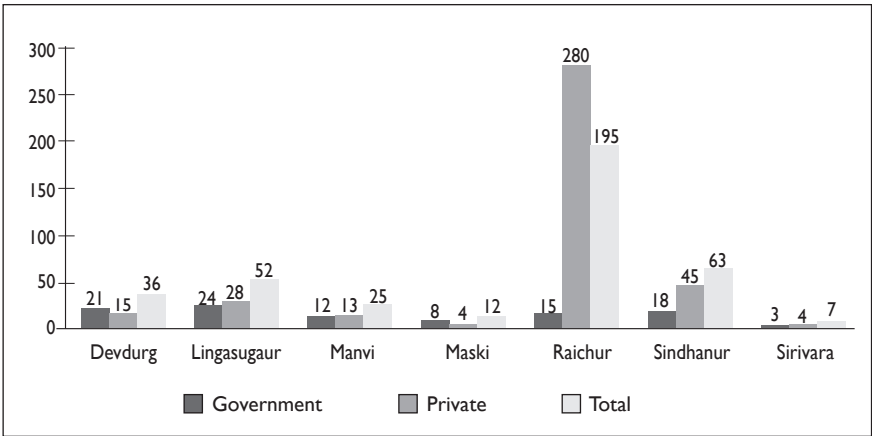
healthcare facilities. The dominance of Raichur is probably a result of its urban setting and larger population, which highlights the necessity of focused development in other talukas to guarantee equal healthcare distribution throughout Raichur District.

**Table-6:** Number of Doctors (Government + Private Hospitals)

Sl. No.	Taluka	Govt.	Private	Total	Percentage to District Total
1	Devdurg	21	15	36	7.35
2	Lingasugaur	24	28	52	10.61
3	Manvi	12	13	25	5.1
4	Maski	8	4	12	2.45
5	Raichur	15	280	195	60.2
6	Sindhanur	18	45	63	12.86
7	Sirivara	3	4	7	1.43

Source: District at a Glance: Raichur District-Statistical Report - FY 2019-20

**Figure-7:** Number of Doctors (Government + Private Hospitals)



### Conclusion: Top of Form

In summary, this comprehensive assessment of Raichur District’s healthcare system illuminates important factors affecting locals’ quality of life. With the greatest number of hospitals and beds and a strong focus on private healthcare services, Raichur taluka emerges as a center for healthcare. Raichur’s greater population density and urban setting perhaps contribute to its domination. Additionally, important roles are played by Lingasugaur and Sindhanur, who together provide a sizeable portion of the district’s healthcare infrastructure. Nonetheless, other talukas, such as Maski and Sirivara, have restricted access to healthcare, indicating possible gaps that require targeted solutions. The analysis of Ayush hospitals highlights the heterogeneous environment in which alternative medicine is provided.

Raichur taluka has a strong infrastructure in this regard, but Maski and Sirivara are conspicuously lacking. The district, especially in Raichur taluka, is heavily dependent on private healthcare services, as evidenced by the differences in the distribution of government and private hospitals. These results highlight how crucial strategic planning is to guaranteeing fair access to healthcare for all talukas. Targeted activities are crucial as Raichur District develops to address inequities, improve healthcare infrastructure, and promote a holistic and inclusive health ecosystem for its varied population.

## Recommendations

- Ensure that healthcare amenities are distributed equally throughout all talukas in Raichur District.
- Improve government healthcare services by investing in infrastructure and manpower.
- Encourage the integration of Ayush healthcare services, particularly in underprivileged areas.
- Foster public-private collaborations to improve overall healthcare delivery.
- Create a geographic health strategy that addresses the specific needs of each taluka.

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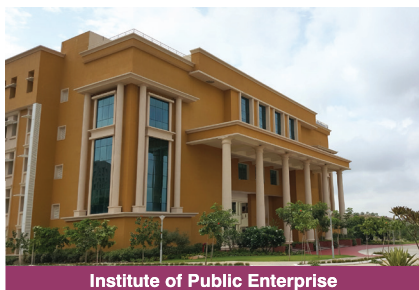
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