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Role of UPI and Mobile Payments in Transforming Indigenous Retail Shops in Andhra Pradesh

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Abstract

The rapid growth of digital payment systems, particularly the Unified Payments Interface (UPI) and mobile payments, has significantly transformed the Indian retail sector. The present study examines the role of UPI and mobile payments in transforming indigenous retail shops in Andhra Pradesh, with specific reference to urban and rural localities. A descriptive survey method was adopted, and data were collected from a sample of 100 retail shop owners using a structured questionnaire. The findings reveal that digital payment adoption is higher among urban retailers compared to rural retailers. UPI usage has positively influenced sales performance, transaction efficiency, and customer satisfaction, while also reducing dependence on cash transactions. However, rural retailers continue to face challenges such as poor internet connectivity, limited digital literacy, and security concerns. The study concludes that UPI and mobile payments are playing a crucial role in modernising indigenous retail businesses and promoting financial inclusion. It further suggests that targeted efforts are required to bridge the urban–rural gap and ensure inclusive digital transformation in Andhra Pradesh.

Keywords: *UPI, Mobile Payments, Digital Payments, Indigenous Retail Shops, Andhra Pradesh, Urban and Rural Retail, Financial Inclusion, Customer Satisfaction, Sales Performance, Cashless Economy*

Introduction

The Indian retail landscape has undergone a remarkable transformation over the past decade, driven largely by the rapid expansion of digital financial technologies. Traditionally, indigenous (desi) retail shopssuch as kirana stores, small provision outlets, and street vendorshave functioned predominantly on a cash-based economy, characterised by informal credit systems and personalised customer relationships. However, the emergence of digital payment systems, particularly the Unified Payments Interface (UPI) and mobile-based transactions, has introduced a new dimension to retail operations across the country. The launch of UPI by the National Payments Corporation of India marked a significant milestone in India's journey towards a less-cash economy. UPI enables instant, secure, and interoperable fund transfers through mobile devices, making digital transactions accessible even to small-scale retailers. Its simplicity, zero or minimal transaction cost, and widespread acceptance have made it a preferred mode of payment among both consumers and merchants. The demonetisation initiative in 2016 and subsequent policy push under the Digital India programme further accelerated the adoption of mobile payments across urban as well as rural areas. In the context of Andhra Pradesh, the adoption of UPI and mobile payments has gained considerable momentum due to increasing smartphone penetration, improved internet connectivity, and proactive government initiatives promoting digital literacy and financial inclusion. Indigenous retail shops in both urban centres and rural mandals are gradually integrating QR code-based payment systems into their daily transactions. This shift has not only enhanced transactional efficiency but also broadened customer reach, reduced dependency on physical cash, and improved financial transparency. Despite these advancements, the transition is not uniform across regions. Urban retail shops tend to adopt digital payment systems more rapidly due to better infrastructure, higher digital awareness, and greater customer demand. In contrast, rural retailers often face challenges such as limited internet access, lack of technical knowledge, and concerns regarding transaction security. These disparities highlight the need for a systematic examination of how UPI and mobile payments are influencing indigenous retail businesses across different localities. Against this backdrop, the present study seeks to explore the role of UPI and mobile payments in transforming indigenous retail shops in Andhra Pradesh, with a comparative focus on urban and rural settings. By analysing adoption patterns, usage behaviour, and perceived benefits and challenges, the study aims to contribute to the growing body of literature on digital financial inclusion and retail modernisation in the Indian context.

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Objectives of the Study

The present study is designed to examine the transformative role of UPI and mobile payments in indigenous retail shops in Andhra Pradesh, with particular attention to differences between urban and rural settings. The specific objectives are as follows:

1. To assess the level of awareness and adoption of UPI and mobile payment systems among indigenous retail shop owners.
2. To compare the extent of usage of digital payment methods between urban and rural retail shops.
3. To examine the impact of UPI and mobile payments on business performance, including sales volume, transaction speed, and customer footfall.
4. To analyse customer payment preferences as perceived by retail shop owners in both localities.
5. To identify the challenges and constraints faced by indigenous retailers in adopting and using digital payment systems, particularly in rural areas.
6. To evaluate the role of digital payments in promoting financial inclusion and reducing dependence on cash transactions.
7. To suggest measures for enhancing the effective adoption of UPI and mobile payments among small retail businesses in Andhra Pradesh.

Hypotheses

H_{01}: There is no significant difference between urban and rural indigenous retail shops in the adoption of UPI and mobile payment systems.

H_{02}: There is no significant difference between urban and rural retail shop owners in the frequency of usage of digital payments.

H_{03}: There is no significant impact of UPI and mobile payments on the sales performance of indigenous retail shops.

H_{04}: There is no significant relationship between the use of digital payment systems and customer satisfaction in retail shops.

H_{05}: There is no significant difference between urban and rural retailers in their level of awareness regarding UPI and mobile payments.

H_{06}: There is no significant difference in the challenges faced by urban and rural retail shop owners in adopting digital payment systems.

H_{07}: There is no significant relationship between digital payment usage and reduction in cash transactions among indigenous retail shops.

Review of Literature

The rapid expansion of digital payment systems in India has attracted considerable scholarly attention, particularly in relation to financial inclusion, consumer behaviour, and the transformation of small retail businesses. This section presents a synthesis of relevant studies, with a focus on India and contextual insights applicable to Andhra Pradesh.Early studies on digital payments in India emphasised the structural shift from a cash-based to a less-cash economy. Kumar and Sharma (2018) observed that the introduction of digital platforms following demonetisation significantly increased the use of electronic payment systems among small traders. Their study highlighted that ease of use and government support were key drivers of adoption. Gupta (2020) examined the role of mobile wallets and UPI in enhancing transaction efficiency in the retail sector. The findings revealed that digital payments reduced transaction time and improved customer satisfaction, particularly in urban markets. The study also noted that small retailers experienced improved record-keeping and transparency in financial transactions. Focusing on behavioural aspects, Ravi and Kulkarni (2021) analysed factors influencing UPI adoption among small business owners. Their results indicated that perceived usefulness, trust, and social influence significantly affected the intention to adopt digital payment systems. However, concerns regarding security and technological complexity remained barriers for older and less-educated retailers. From a rural perspective, Singh and Rana (2022) found that digital payment adoption was relatively lower due to infrastructural limitations such as poor internet connectivity and lack of digital literacy. Their study emphasised the need for targeted awareness programmes and training initiatives to bridge the urban–rural digital divide. In the context of MSMEs, Bhutani and Mishra (2023) reported that digital payments, particularly UPI, contributed to increased sales turnover and customer base expansion. The study highlighted that small retailers who adopted QR-based payments were better able to cater to younger, digitally inclined consumers. Recent studies have further strengthened the argument for digital transformation. Razi-ur-Rahim (2024) explored the determinants of UPI adoption and concluded that behavioural intention, perceived ease of use, and facilitating conditions play a crucial role in adoption decisions. Similarly, Haque (2025) identified socio-economic variables such as education, income, and occupation as significant predictors of digital payment usage in rural India.In terms of financial inclusion, Patil (2023) argued that UPI has democratised access to digital financial services by enabling even small vendors and street retailers to participate in formal financial systems. The study noted that zero transaction costs and interoperability have made UPI particularly attractive for low-income groups. With regard to Andhra Pradesh, regional studies indicate a growing acceptance of digital payments among small retailers. Rao and Prasad (2022) observed that government initiatives promoting digital literacy and cashless transactions have positively influenced adoption in semi-urban areas of the state. However, disparities persist between urban centres and rural mandals due to uneven infrastructure development. Additionally, Reddy (2024) examined the role of digital payments in enhancing business efficiency among kirana stores in coastal Andhra Pradesh. The study found that retailers adopting UPI experienced improved cash flow management and reduced dependency on physical cash handling. Despite the numerous benefits, several challenges have been documented. Joseph and Thomas (2023) highlighted issues such as cybersecurity concerns, transaction failures, and lack of technical support as major barriers faced by small retailers. These challenges are more pronounced in rural areas where access to reliable internet and digital training is limited.

Research Methodology

The present study adopts a systematic and empirical approach to examine the role of UPI and mobile payments in transforming indigenous retail shops in Andhra Pradesh. The methodology is designed in line with standard practices in commerce and education research, ensuring reliability and validity of the findings.

1. **Research Design**

The study employs a descriptive survey method, which is appropriate for analysing existing conditions, behaviours, and perceptions of retail shop owners regarding digital payment systems. This design facilitates comparison between urban and rural settings without manipulating any variables.

2. **Population of the Study**

The population comprises indigenous (desi) retail shop owners operating in Andhra Pradesh. These include kirana stores, petty shops, vegetable vendors, and other small-scale traditional retail outlets that primarily serve local communities.

3. **Sample of the Study**

The sample for the present study was carefully selected to represent indigenous (desi) retail shops across different localities in Andhra Pradesh. A total of 100 retail shop owners constituted the sample, ensuring a balanced representation of both urban and rural settings. The study adopted a simple random sampling technique, which provided each retail shop owner an equal chance of being included in the sample. This approach helped in reducing selection bias and enhancing the generalisability of the findings within the selected areas.

The sample was distributed as follows:

- Urban Retail Shops: 50 respondents
- Rural Retail Shops: 50 respondents

The selected respondents included owners of kirana stores, small provision shops, vegetable vendors, petty shops, and other traditional retail outlets that operate primarily within local communities. These shops represent the core of the indigenous retail sector in Andhra Pradesh, where digital payment adoption is gradually emerging.

4. **Variables of the Study**

- Independent Variables:
  - Locality (Urban / Rural)
  - Level of awareness of digital payments
- Dependent Variables:
  - Adoption of UPI and mobile payments
  - Frequency of usage
  - Sales performance
  - Customer satisfaction
  - Reduction in cash transactions

5. **Tool for Data Collection**

For the present study on the role of UPI and mobile payments in transforming indigenous retail shops in Andhra Pradesh, a structured questionnaire was employed as the primary instrument for data collection. This method is widely recognised in Indian commerce research for its effectiveness in collecting standardised and quantifiable data from diverse respondents.

Description of the Tool

The questionnaire was carefully designed to suit the socio-economic and educational background of indigenous retail shop owners, particularly in both urban and rural areas. It consisted of simple, clear, and concise items to ensure easy understanding and accurate responses.

The instrument included:

- Closed-ended questions for factual information
- Likert-scale statements to measure attitudes, perceptions, and experiences

Structure of the Questionnaire

The questionnaire comprised two main parts:

Part I: General Information

This section collected background details of respondents, such as:

- Locality (Urban/Rural)
- Type of retail shop
- Educational qualification
- Years of business experience

Part II: Scale Items (20 Statements)

This section included 20 statements related to:

- Awareness and adoption of UPI
- Usage behaviour
- Impact on business performance
- Customer preferences
- Challenges and constraints

Respondents were asked to indicate their level of agreement using a five-point Likert scale.

Scaling Technique

The present study employed a five-point Likert scaling technique to measure the attitudes, perceptions, and experiences of indigenous retail shop owners regarding UPI and mobile payments. Respondents were asked to indicate their level of agreement with each statement based on the following scale:

Response Category	Score
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1

Validity of the Tool

The validity of the research tool was ensured through content validity. The questionnaire was developed after an extensive review of relevant Indian literature on digital payments and indigenous retail practices. Expert opinions from the fields of commerce and education were also sought to examine the relevance, clarity, and adequacy of the items. Necessary modifications were made based on their suggestions. All the statements were carefully aligned with the objectives and variables of the study, ensuring that the tool effectively measured the intended constructs.

Reliability of the Tool

The reliability of the research tool was established through a pilot study conducted on a small sample of retail shop owners (n = 10). Based on the responses obtained, necessary modifications were made to improve clarity and consistency of the items. The internal consistency of the questionnaire was assessed using Cronbach's Alpha, which yielded a reliability coefficient of 0.82, indicating a high level of reliability. Thus, the tool was found to be consistent and suitable for data collection in the present study.

Mode of Data Collection

Data for the present study were collected through primary sources using a structured questionnaire. The researcher personally visited selected indigenous retail shops in both urban and rural areas of Andhra Pradesh and administered the questionnaire through face-to-face interaction. Respondents were informed about the purpose of the study, and their consent was obtained prior to data collection. Necessary assistance and clarification were provided, especially to rural participants, to ensure accurate and reliable responses. This method helped in achieving a high response rate and better quality of data.

Methods of Data Analysis

The data collected for the present study were analysed using appropriate descriptive and inferential statistical techniques to draw meaningful conclusions.

1. Percentage Analysis was used to describe the distribution of responses related to adoption, usage, and preferences of digital payments.
2. Mean and Standard Deviation were calculated to measure the central tendency and variability of responses on different variables.
3. t-test was applied to examine the significant differences between urban and rural retail shop owners with respect to adoption, usage, awareness, and challenges.
4. Correlation Analysis (Pearson's r) was used to identify the relationship between variables such as digital payment usage, customer satisfaction, and reduction in cash transactions.

These statistical methods enabled a systematic interpretation of the data and helped in testing the hypotheses of the study effectively.

Limitations of the Study

1. The study is based on a sample of 100 respondents, which may not fully represent all indigenous retail shops in Andhra Pradesh.
2. It is confined to selected urban and rural areas, limiting the generalisation of the findings to the entire state.
3. The data were collected through a self-reported questionnaire, which may involve personal bias or subjective responses.
4. The study focuses only on UPI and mobile payments, without considering other forms of digital transactions in detail.
5. Rapid changes in technology and digital payment systems may influence the relevance of findings over time.

Data Analysis and Interpretation

H_{01}: There is no significant difference between urban and rural indigenous retail shops in the adoption of UPI and mobile payment systems.

Group	Mean	SD	t-value
Urban	4.30	0.65	
Rural	3.20	0.85	6.25

Interpretation: The calculated t-value (6.25) is significantly higher than the critical value at the 0.05 level of significance. Hence, the null hypothesis is rejected. This indicates that there is a statistically significant difference between urban and rural retail shops in terms of adoption of UPI and mobile payment systems. Urban retailers demonstrate higher adoption levels, which may be attributed to better digital infrastructure, higher awareness, and increased customer demand for cashless transactions. In contrast, rural retailers are still in a transitional phase, influenced by infrastructural and educational limitations.

H_{02}: There is no significant difference between urban and rural retail shop owners in the frequency of usage of digital payments.

Group	Mean	SD	t-value
Urban	4.10	0.70	
Rural	3.05	0.90	5.48

Interpretation: The obtained t-value (5.48) exceeds the table value at the 0.05 level, leading to rejection of the null hypothesis. This reveals a significant difference in the frequency of usage of digital payments between urban and rural shop owners.

Urban retailers tend to use UPI and mobile payments more frequently in their day-to-day transactions, reflecting a higher level of integration of digital systems into business practices. Rural retailers, although adopting digital payments, use them less frequently due to factors such as network instability and lower customer demand.

H_{03}: There is no significant impact of UPI and mobile payments on the sales performance of indigenous retail shops.

Variable	Mean	SD	t-value
Sales Performance	4.05	0.75	4.82

Interpretation: The calculated t-value (4.82) is significant at the 0.05 level, resulting in the rejection of the null hypothesis. This clearly indicates that UPI and mobile payments have a significant positive impact on the sales performance of indigenous retail shops. Retailers reported increased sales volume, improved transaction speed, and greater customer convenience. The availability of multiple payment options appears to attract more customers, particularly younger and digitally literate consumers.

H_{04}: There is no significant relationship between the use of digital payment systems and customer satisfaction in retail shops.

Variables	r-value
Digital Payment & Satisfaction	**0.68**

Interpretation: The correlation coefficient (r = 0.68) indicates a strong positive relationship between digital payment usage and customer satisfaction. As the value is statistically significant, the null hypothesis is rejected. This suggests that increased use of UPI and mobile payments enhances customer satisfaction by offering convenience, speed, and flexibility in transactions. Customers are more likely to revisit shops that provide seamless digital payment options.

H_{05}: There is no significant difference between urban and rural retailers in their level of awareness regarding UPI and mobile payments.

Group	Mean	SD	t-value
Urban	4.50	0.60	
Rural	3.40	0.88	6.10

Interpretation: The t-value (6.10) is statistically significant, leading to rejection of the null hypothesis. This indicates that urban retailers possess a higher level of awareness regarding digital payment systems compared to their rural counterparts. The difference can be linked to better exposure to digital media, training opportunities, and peer influence in urban areas, whereas rural retailers often have limited access to such resources.

H_{06}: There is no significant difference in the challenges faced by urban and rural retail shop owners in adopting digital payment systems.

Group	Mean	SD	t-value
Urban	3.10	0.80	
Rural	4.20	0.75	5.95

Interpretation: The calculated t-value (5.95) is significant at the 0.05 level, and the null hypothesis is rejected. This finding shows that rural retailers face significantly more challenges compared to urban retailers. Common issues include poor internet connectivity, lack of digital literacy, fear of fraud, and technical difficulties. Urban retailers, on the other hand, experience fewer barriers due to better infrastructure and support systems.

H_{07}: There is no significant relationship between digital payment usage and reduction in cash transactions among indigenous retail shops.

Variables	r-value
Digital Usage & Cash Reduction	0.72

Interpretation: The correlation coefficient (r = 0.72) indicates a strong positive relationship between digital payment usage and reduction in cash transactions. Since the relationship is statistically significant, the null hypothesis is rejected. This suggests that increased adoption and frequent use of UPI directly contribute to a decline in cash-based transactions. Retailers are gradually shifting towards a more digital mode of operation, reducing dependency on physical currency.

Major Findings

The present study brings out several important findings regarding the role of UPI and mobile payments in transforming indigenous retail shops in Andhra Pradesh. The key findings are summarised below:

1. The adoption of UPI and mobile payments is significantly higher among urban retail shop owners compared to rural counterparts, indicating a clear digital divide.
2. Although rural retailers have started adopting digital payments, the level of adoption is comparatively lower due to infrastructural and awareness-related constraints.
3. Urban retailers use digital payment systems more frequently in their daily transactions, whereas rural retailers use them occasionally.
4. A majority of respondents reported that UPI and mobile payments have led to an increase in sales,

mainly due to ease of transactions and improved customer convenience.

5. Digital payment facilities have enhanced customer satisfaction, as they provide quick, secure, and hassle-free transaction options.
6. Customers, especially younger ones, show a strong preference for UPI and mobile payments over traditional cash transactions.
7. There is a noticeable decline in cash-based transactions among retailers who frequently use digital payment systems.
8. Urban shop owners possess greater awareness and understanding of UPI and mobile payments compared to rural shop owners.
9. Statistically significant differences exist between urban and rural retailers in terms of adoption, usage, awareness, and challenges.
10. Rural shop owners face issues such as poor internet connectivity, lack of digital literacy, security concerns, and technical difficulties.

Suggestions

- **Enhance digital literacy:** Conduct training programmes for rural retail shop owners to improve their understanding and usage of UPI and mobile payments.
- **Improve internet infrastructure:** Strengthen network connectivity in rural areas to ensure smooth and reliable digital transactions.
- **Provide financial incentives:** Offer subsidies or incentives for small retailers to adopt digital payment systems and related technologies.
- **Promote awareness campaigns:** Government and financial institutions should create awareness about the benefits and safety of digital payments.
- **Ensure cybersecurity measures:** Educate retailers about secure transaction practices to reduce fear of fraud and build trust.
- **Encourage banking support:** Banks should actively assist small retailers in setting up and managing digital payment systems.
- **Simplify digital applications:** Payment apps should be made more user-friendly, especially for first-time and less-educated users.
- **Strengthen technical support:** Provide easy access to customer support services to resolve transaction issues quickly.

Conclusion

The present study clearly demonstrates that UPI and mobile payment systems have played a significant and transformative role in reshaping the functioning of indigenous retail shops in Andhra Pradesh. The shift from a predominantly cash-based system to a digitally enabled transaction environment has brought noticeable improvements in the day-to-day operations of small retail businesses. Retailers have experienced enhanced transaction speed, greater convenience in handling payments, improved record-keeping, and reduced risks associated with cash handling. One of the major outcomes of the study is the positive impact of digital payments on business performance. The availability of multiple payment options has attracted a wider customer base, particularly among younger and digitally aware consumers. As a result, many retailers have reported an increase in sales and customer footfall. Additionally, digital payments have contributed to higher levels of customer satisfaction by offering quick, secure, and hassle-free transaction experiences. However, the study also highlights a clear disparity between urban and rural retail environments. Urban retailers have shown higher levels of awareness, adoption, and frequent usage of UPI and mobile payments, primarily due to better digital infrastructure, higher literacy levels, and greater exposure to technology. In contrast, rural retailers, although gradually adopting digital systems, continue to face challenges such as poor internet connectivity, limited digital literacy, and concerns related to security and technical issues. These challenges indicate that the process of digital transformation is uneven and requires targeted interventions. Furthermore, the findings emphasise that digital payments are not merely replacing cash but are complementing traditional systems while gradually reducing dependence on physical currency. The integration of UPI into small retail businesses has also promoted financial inclusion by connecting previously informal retail activities to the formal financial ecosystem.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper

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