# ADOPTION OF DIGITAL PAYMENT SYSTEMS AMONG RURAL AND URBAN CONSUMERS IN KERALA

By

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## Abstract

*The rapid advancement of financial technology has transformed the payment landscape in India. Digital payment systems have become increasingly popular due to their convenience, speed, and efficiency. Government initiatives promoting digital financial inclusion and the widespread use of smartphones have accelerated the adoption of digital payment platforms. The present study examines the adoption of digital payment systems among rural and urban consumers in Kerala. The study also analyses consumer perceptions and behavioural patterns regarding digital payment methods. Primary data were collected from 300 respondents using a structured questionnaire. The results indicate that urban consumers demonstrate higher adoption levels of digital payment systems compared to rural consumers due to better digital infrastructure and awareness. However, rural consumers are gradually adopting digital payments due to increasing smartphone penetration and government awareness programmes. The study highlights the importance of digital literacy, improved security mechanisms, and stronger digital infrastructure in promoting wider adoption of digital payment systems.*

***Keywords:*** *digital payment systems, consumer behaviour, rural consumers, urban consumers, kerala, and financial technology.*

## Introduction

Digital payment systems have emerged as an important component of modern financial transactions. Technological developments and the growth of financial technology have enabled consumers to conduct transactions quickly and securely without relying on physical cash. In India, digital payment adoption has increased significantly due to government initiatives aimed at promoting a cashless economy. Several digital payment methods such as debit cards, credit cards, internet banking, mobile wallets, and the Unified Payments Interface, have become widely used. These platforms allow users to transfer funds instantly and perform transactions through mobile devices and online banking services.

Kerala is one of the most digitally literate states in India and has a well-developed banking network. Despite these advantages, differences exist between rural and urban consumers in terms of access to digital technologies, digital literacy, and trust in online transactions. Urban consumers generally have better exposure to digital technologies, while rural consumers may face challenges related to infrastructure and awareness.

Understanding consumer adoption patterns of digital payment systems is essential for

policymakers, financial institutions, and technology providers to design strategies that promote digital financial inclusion. This study, therefore, examines the adoption of digital payment systems among rural and urban consumers in Kerala.

## Review of Literature

Technology adoption theories explain the behavioural factors influencing the acceptance of new technologies. The Technology Acceptance Model (TAM) developed by Davis suggests that perceived usefulness and perceived ease of use influence individuals' adoption of new technologies (Davis, 1989).

Another important framework is the Unified Theory of Acceptance and Use of Technology (UTAUT) proposed by Venkatesh et al., which identifies factors such as performance expectancy, effort expectancy, social influence, and facilitating conditions as determinants of technology adoption (Venkatesh et al., 2003).

Reports by the Reserve Bank of India indicate a significant increase in digital payment transactions in India over the past decade (Reserve Bank of India, 2022). The National Payments Corporation of India has also contributed to the growth of digital payments through platforms such as the Unified Payments Interface (UPI), which has significantly transformed the digital payment ecosystem in India (National Payments Corporation of India, 2023).

Previous studies highlight that urban consumers are more likely to adopt digital payment technologies due to higher digital awareness and better technological infrastructure. Rural consumers often face challenges related to digital literacy, network connectivity, and security concerns. However, increasing smartphone penetration and government initiatives have contributed to the gradual adoption of digital payment systems in rural areas (Gupta & Arora, 2020; Singh & Rana, 2017).

## Objectives of the Study

The study is conducted with the following objectives:

1. To examine the level of adoption of digital payment systems among consumers in Kerala.
2. To compare digital payment usage between rural and urban consumers.
3. To identify factors influencing consumer adoption of digital payment systems.
4. To analyse consumer perceptions regarding the benefits and risks associated with digital payments.

## Research Methodology

### Research Design

The study adopts a descriptive research design to analyse consumer adoption patterns related to digital payment systems.

### Data Sources

Both primary and secondary data were used in the study. Primary data were collected through a structured questionnaire distributed among consumers in rural and urban areas of Kerala. Secondary data were obtained from journals, books, reports, and official publications.

### Sample Size

The study was conducted with 300 respondents.

### Sampling Technique

A convenience sampling method was used for selecting respondents.

### Tools for Analysis

The collected data were analysed using the following statistical tools:

- Percentage analysis
- Mean score analysis
- Chi-square test

### Results and Discussions

This section presents the analysis and interpretation of the data collected from the respondents regarding the adoption of digital payment systems. The results are analysed using appropriate statistical tools such as mean score analysis and chi-square test in order to examine the relationship between variables and to identify the factors influencing digital payment adoption among the respondents.

**Table 1. Demographic Profile of Respondents**

| Variable | Category | Frequency | Percentage |
|---|---|---|---|
| Gender | Male | 168 | 56% |
| | Female | 132 | 44% |
| Age | Below 25 years | 54 | 18% |
| | 25–35 years | 102 | 34% |
| | 36–45 years | 84 | 28% |
| | Above 45 years | 60 | 20% |
| Education | SSLC | 42 | 14% |
| | Higher Secondary | 78 | 26% |
| | Graduate | 120 | 40% |
| | Postgraduate | 60 | 20% |
| Residence | Rural | 116 | 38.7% |
| | Urban | 184 | 61.3% |

*(Sample size = 300)*

**Table 2. Hypothesis Testing (Chi-Square Test)**

| Hypothesis | Variables Tested | Chi-square Value | df | p-value | Result |
|---|---|---|---|---|---|
| H1 | Residence and Debit Card Usage | 23.244 | 4 | 0.002 | Significant |
| H2 | Residence and Credit Card Usage | 16.940 | 4 | 0.018 | Significant |
| H3 | Residence and Internet Banking Usage | 27.336 | 4 | 0.000 | Significant |
| H4 | Residence and Mobile Banking Usage | 17.444 | 4 | 0.015 | Significant |
| H5 | Residence and Mobile Wallet Usage | 20.291 | 4 | 0.005 | Significant |
| H6 | Residence and Unified Payments Interface Usage | 19.962 | 4 | 0.006 | Significant |
| H7 | Residence and Aadhaar Enabled Payment System Usage | 25.617 | 4 | 0.001 | Significant |
| H8 | Residence and High Value Digital Transactions | 18.938 | 4 | 0.000 | Significant |
| H9 | Residence and Medium Value Digital Transactions | 16.255 | 4 | 0.000 | Significant |
| H10 | Residence and Low Value Digital Transactions | 3.371 | 4 | 0.185 | Not Significant |

The Chi-square test was conducted to examine the association between place of residence (rural/urban) and the usage of different digital payment instruments and transaction values.

The results reveal that there is a statistically significant association between residence and most forms of digital payment usage. Specifically, the relationship between residence and the use of debit cards ($\chi^2$ = 23.244, p = 0.002), credit cards ($\chi^2$ = 16.940, p = 0.018), internet banking ($\chi^2$ = 27.336, p = 0.000), mobile banking ($\chi^2$ = 17.444, p = 0.015), mobile wallets ($\chi^2$ = 20.291, p = 0.005), Unified Payments Interface (UPI) ($\chi^2$ = 19.962, p = 0.006), and Aadhaar Enabled Payment System ($\chi^2$ = 25.617, p = 0.001)

were found to be significant at the 5 percent level.

These results indicate that place of residence significantly influences the adoption and usage of digital payment systems, suggesting that urban and rural consumers differ in their level of access, awareness, and usage of these technologies.

Further, the association between residence and high-value digital transactions ($\chi^2$ = 18.938, p = 0.000) as well as medium-value digital transactions ($\chi^2$ = 16.255, p = 0.000) was also found to be statistically significant. This implies that consumers' residential background affects the value level of digital transactions they undertake.

However, the relationship between residence and low-value digital transactions ($\chi^2$ = 3.371, p = 0.185) was found to be statistically insignificant**,** as the p-value is greater than 0.05. This indicates that both rural and urban consumers engage in low-value digital transactions at similar levels, and residence does not significantly influence such transactions.

Overall, the findings suggest that residential differences play an important role in shaping digital payment adoption and transaction behaviour, particularly for higher-value digital payments, while low-value transactions are widely accepted across both rural and urban consumers.

**Table 3. Mean Score Analysis of Factors Influencing Digital Payment Adoption**

| Factors | Mean Score | Standard Deviation | Rank |
|---|---|---|---|
| Convenience and ease of use | 4.32 | 0.71 | 1 |
| Speed of transactions | 4.18 | 0.76 | 2 |
| Availability of internet connectivity | 3.94 | 0.82 | 3 |
| Security and privacy | 3.88 | 0.86 | 4 |
| Government initiatives | 3.74 | 0.89 | 5 |
| Cashback and reward offers | 3.62 | 0.91 | 6 |
| Social influence | 3.48 | 0.95 | 7 |
| Merchant acceptance | 3.41 | 0.97 | 8 |

*(Scale: 1 = Strongly Disagree to 5 = Strongly Agree; Sample Size = 300)*

The mean score analysis shows that convenience and ease of use (Mean=4.32) is the most influential factor in digital payment adoption, followed by speed of transactions (Mean=4.18)**.** This indicates that respondents prefer digital payments mainly because they are easy and quick to use.

Availability of internet connectivity (Mean=3.94) and security and privacy (Mean=3.88) also play an important role in

influencing adoption. Government initiatives (Mean=3.74) and cashback and reward offers (Mean=3.62) moderately encourage the use of digital payments.

However, social influence (Mean=3.48) and merchant acceptance (Mean=3.41) have comparatively lower influence on adoption. Overall, the results suggest that functional benefits such as convenience and speed are the key drivers of digital payment usage.

**Major Findings**

1. Urban consumers show higher adoption of digital payment systems compared to rural consumers.
2. Convenience and ease of use are the most influential factors encouraging digital payment adoption.
3. Speed of transactions and internet connectivity also play significant roles in influencing consumer behaviour.
4. Rural consumers face challenges such as limited awareness and security concerns.
5. Government initiatives have positively contributed to increasing digital payment adoption.

**Suggestions**

1. Digital literacy programmes should be conducted in rural areas.
2. Internet connectivity and digital infrastructure should be improved in rural regions.
3. Banks and financial institutions should strengthen digital transaction security.
4. Awareness campaigns should be conducted to build consumer confidence in digital payments.
5. Financial institutions should promote user-friendly digital payment platforms.

**Conclusion**

Digital payment systems have become an essential part of modern financial transactions. The adoption of digital payment technologies in Kerala has increased significantly due to technological developments and supportive government policies. Although urban consumers currently demonstrate higher levels of digital payment adoption, rural consumers are gradually embracing these technologies. Improving digital literacy, strengthening technological infrastructure, and ensuring transaction security will play a crucial role in encouraging wider adoption of digital payment systems. With appropriate policy measures and technological advancements, digital payment systems can contribute significantly to financial inclusion and economic development in Kerala.

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