

A Study on Digital Payment Technologies and Their Impact on the Economic Growth in Thanjavur District

OPEN ACCESS

Volume: 13

Special Issue: 2

Month: January

Year: 2026

E-ISSN: 2582-0397

P-ISSN: 2321-788X

Citation:

Meenakshi, S., and V. B. Sakthigha. "A Study on Digital Payment Technologies and Their Impact on the Economic Growth in Thanjavur District." *Shanlax International Journal of Arts, Science and Humanities*, vol. 13, no. 2, 2026, pp. 153–57.

DOI:

<https://doi.org/10.34293/sijash.v13iS2-i4-Jan.10597>

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Abstract

Digital payment technologies have become an important part of the modern financial system and play a vital role in economic development. In recent years the use of digital payment methods such as UPI, debit cards, credit cards, and mobile wallets has increased significantly in India. This paper focuses particularly on examining how people in Thanjavur use digital payment methods, and also on analysing how these technologies contribute to their economic growth by saving time, increasing business efficiency, and reducing the use of cash. It also identifies the problems faced by users while adopting digital payments. The researcher collected data from 150 respondents in Thanjavur district. The data were collected using convenient sampling technique and further analysed using SPSS Version 20 for statistical tests. This study clearly concludes that increasing awareness and improving digital infrastructure support economic growth in Thanjavur District.

Keywords: Digital Payment Technologies, Economic Growth, UPI and Mobile Wallets, Financial Inclusion, Thanjavur

Introduction

In recent years, money transactions have grown rapidly through digital payments instead of physical cash transactions. More people have adopted digital payment methods like UPI, debit cards, credit cards, and mobile wallets. These electronic payment systems have been encouraged globally through advanced technology via smartphones, and the government has also been promoting policies for financial inclusion. This can change the preference of consumers by using e-transactions for their convenience, need, and transparency. Electronic payment methods like UPI, debit card, credit card, and mobile wallets are user-friendly and safer to use. These methods make transactions easier for all kinds of people and also for businesses, and are especially useful for traders and service providers. Digital payments help businesses sell products, keep their customers satisfied, and keep track of their income and expenses.

In recent years, Thanjavur district has also experienced the rise of digital payment technologies. Many businesses in Thanjavur have started to use UPI and mobile wallets for their day-to-day business transactions, and yet

they still face some complications like lack of awareness, technical issues, and security concerns. Hence, this study focuses on examining the digital payment usage methods in Thanjavur and analysing their impact on economic growth, and also to identify the complications faced by the users and suggest ways to improve digital payment adoption in Thanjavur district.

Statement of the Problem

Electronic payment system technologies have evolved rapidly in India; their implementation and effective usage has remained unbalanced across regions. In Thanjavur district, users may face complications such as limited digital awareness, network connectivity issues, and security concerns. These complications restrict the full implementation of cashless payment systems by consumers and small businesses. Hence, it becomes necessary to study the usage patterns and the impact on economic efficiency, along with difficulties related to electronic payment systems in Thanjavur district.

Objectives of the Study

- To examine the usage pattern of electronic payment methods among consumers and businesses in Thanjavur district.
- To analyse the role of electronic payment systems in promoting economic growth in Thanjavur district.
- To identify the complications faced while using electronic payment systems and suggest ways to improve their usage in Thanjavur district.

Review of Literature

Ramesh, K. and Kumar, S. (2019) stated that digital literacy programs are essential to increase adoption in rural regions. **Patel, A. (2020)** identified technical failures and service charges as major challenges faced by small traders. **Sharma, R. and Verma, P. (2021)** highlighted that increased use of digital payments contributes to transparency, reduction of the informal economy, and higher tax compliance, emphasising digital payments as a key driver of long-term economic development. **Suresh, M. (2022)** showed that ease of use, instant transfer, and wide merchant acceptance were the primary reasons for UPI's popularity, while security concerns and transaction failures were identified as main barriers to continued usage. **Lakshmi, R. and Narayanan, V. (2022)** found that lack of digital skills and limited infrastructure remained significant obstacles in semi-urban and rural areas. **Joseph, T. and Paul, A. (2023)** analysed the adoption of digital payments in semi-urban regions of India and recommended strengthening infrastructure and awareness programs.

Research Methodology

The study uses a descriptive research approach to examine the use of digital payment technologies and their impact on the economic growth of Thanjavur District. Primary data were collected from 150 respondents in Thanjavur district through structured questionnaires using convenience sampling method. Secondary data were collected from journals, publications, and other online sources. The data were assessed by descriptive statistical techniques using SPSS Version 20 for calculating percentages and frequencies.

Data Analysis and Interpretation

Table 1 Respondents by Type (Individual vs Business/Merchant)

Respondent Type	Number	Percentage (%)
Individual / Consumer	95	63%
Business / Merchant	55	37%
Total	150	100%

The majority of the respondents are individual users (63%), while the rest are businesses or merchants (37%). This shows the study includes both consumer and business perspectives on digital payments.

Table 2 Types of Digital Payment Methods Used by Respondents

Payment Method	Number of Users	Percentage (%)
UPI (Google Pay, PhonePe, Paytm, etc.)	108	72%
Debit Card	81	54%
Mobile Wallets	62	41%
Credit Card	33	22%
Net Banking	21	14%
Total	150	100%

UPI is the most popular method (72%), followed by debit cards and mobile wallets. Credit cards and net banking are less commonly used. People prefer fast and convenient mobile payments.

Table 3 Frequency of Digital Payment Usage Among Respondents

Frequency	Number	Percentage (%)
Daily	96	64%
Weekly	32	21%
Monthly	15	10%
Rarely	7	5%
Total	150	100%

Most respondents (64%) use digital payments daily, showing high adoption. A smaller number use them weekly or monthly, while very few rarely use digital payments.

Table 4 Effect of Electronic Payment Systems on Efficiency and Economic Activity

Impact Response	Number	Percentage (%)
Yes, significantly	85	57%
Sometimes	42	28%
No	23	15%
Total	150	100%

A majority of respondents (57%) reported that digital payment systems significantly improve economic efficiency and activity, while 28% said this is the case sometimes, and 15% reported no impact.

Table 5 Complications Faced While Using Digital Payment Systems

Complications / Problems	No. of Respondents	Percentage (%)
Network / Connectivity Issues	72	48%
Transaction Failures	46	31%
Security / Fraud Concerns	54	36%
Lack of Technical Knowledge	36	24%
High Transaction Charges	22	15%
Total	150	100%

Network/connectivity issues (48%) and security/fraud concerns (36%) are the most prevalent complications faced while using digital payment systems, followed by transaction failures (31%), lack of technical knowledge (24%), and high transaction charges (15%).

Chi-Square Test: Frequency of Electronic Payment Usage vs Effect on Economic Efficiency

Null Hypothesis (H₀): There is no association between the frequency of digital payment usage and the impact on economic efficiency.

Alternative Hypothesis (H₁): There is an association between the frequency of digital payment usage and the effect on economic efficiency.

The chi-square value calculated is $\chi^2 = 46.52$. At 5% significance, the critical value (df = 4) = 9.488. Since $46.52 > 9.488$, H₀ is rejected and H₁ is accepted.

The significant chi-square value demonstrates that users of digital payments more frequently experience higher efficiency and economic benefits. Hence, it is confirmed that the adoption of digital payments contributes to economic growth.

Findings of the Study

The study reveals that digital payment systems are rapidly adopted and regularly used in Thanjavur district, and frequent usage leads to greater economic efficiency. Users prefer UPI as the most common digital payment method; daily usage indicates strong acceptance of digital payments. The study also identifies that digital payments reduce time consumption, simplify transactions, and thereby increase economic efficiency. Even though there are more benefits, network/connectivity issues, security concerns, fraud risks, and transaction failures remain significant challenges that affect user confidence. Overall, the statistical analysis confirms that higher frequency of digital payment usage is significantly associated with increased economic benefits.

Suggestions

This study suggests that effective acceptance and use of e-payment systems in Thanjavur district depend on supportive infrastructure, awareness, security, affordability, and user-friendly design. Strengthening network connectivity, improving user education, enhancing cybersecurity, and reducing transaction costs are essential to encourage digital payment adoption, especially among small merchants. Since many people face language barriers, providing voice assistance in the local language would be particularly beneficial. This will significantly increase user confidence and promote wider and more inclusive use of digital payment systems, leading to effective economic growth.

Conclusion

In Thanjavur district, digital payment technologies contribute a significant role in economic growth. The study shows a high level of adoption by individuals and business users, particularly in UPI-based payment systems. Regular use of digital payments has strengthened transaction efficiency, decreased dependency on cash, and made business operations more efficient. The statistical analysis reveals that increased usage of digital payment methods leads to greater economic efficiency. Still, challenges such as network connectivity issues, security concerns, and technical difficulties limit the full potential of digital payments. By improving digital infrastructure, enhancing security measures, and increasing awareness through training programs, digital payment technologies can further strengthen financial inclusion and contribute significantly to sustainable economic growth in Thanjavur District.

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