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Impact of Digital Payment Systems on Financial Inclusion in Backward Areas: A Study of Wayanad District, Kerala

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Abstract: Financial inclusion remains a critical challenge in rural and economically backward regions, where access to formal financial services is often limited. In this context, digital payment systems have emerged as a transformative tool to bridge the gap between the unbanked population and the formal financial sector. The present study examines the awareness, adoption, and usage of digital payment systems and analyses their role in promoting financial inclusion in the backward areas of Wayanad district, Kerala.

The study is based on primary data collected from 100 respondents across selected regions of Vythiri, Mananthavady, and Sulthan Bathery taluks using a structured questionnaire. The findings reveal that awareness of digital payment systems among respondents is universal, while adoption is also significantly high. The chi-square analysis confirms a statistically significant difference in awareness and usage patterns. Among various methods, UPI emerges as the most widely known and used digital payment system. Mean score analysis indicates that respondents perceive digital payments as convenient, accessible, and effective in reducing the need for physical bank visits and improving access to financial services.

However, while the perception towards financial inclusion is positive, it is relatively lower compared to other aspects, suggesting the presence of certain barriers such as digital literacy, trust issues, and infrastructural limitations. The study concludes that digital payment systems play a significant role in enhancing financial inclusion in backward areas, but targeted efforts are required to address existing challenges and ensure inclusive growth.

Index Terms **-** Digital payment, financial inclusion, backward area, UPI, banking access

I. INTRODUCTION

Financial inclusion has become a central goal of economic development, particularly in developing countries like India, where a significant portion of the population still lacks access to formal financial services. Access to banking, credit, insurance, and payment systems is essential not only for individual financial security but also for overall economic growth and social equity. Despite continuous efforts by governments and financial institutions, disparities in financial access remain evident, especially in rural and backward regions.

In recent years, digital payment systems have emerged as a transformative force in bridging this gap. With the rapid expansion of mobile technology, internet connectivity, and user-friendly financial platforms, individuals can now perform transactions quickly and conveniently without relying on traditional banking infrastructure. Tools such as Unified Payments Interface (UPI), mobile wallets, and internet banking have

simplified financial transactions and reduced dependency on cash-based systems. These developments have been further accelerated by government initiatives aimed at promoting a cashless economy and enhancing financial inclusion.

Kerala, known for its high literacy rate and relatively strong banking network, presents an interesting case in this context. While urban areas have widely adopted digital financial services, certain rural and economically backward regions still face challenges in terms of awareness, accessibility, and trust in digital systems. Wayanad district, with its unique socio-economic characteristics and significant rural population, represents one such area where the adoption of digital payment systems may not be uniform.

Although previous studies have highlighted the positive role of digital payments in improving financial inclusion, most of them focus on broader rural populations or urban settings. Limited attention has been given to backward regions where structural and behavioural barriers may influence adoption differently. Therefore, there is a need to examine how digital payment systems are perceived, adopted, and utilized in such contexts.

Against this background, the present study aims to analyse the awareness, adoption, and usage of digital payment systems in the backward areas of Wayanad district and to evaluate their role in promoting financial inclusion and improving access to financial services. By focusing on a region-specific context, the study seeks to provide insights that can support more inclusive and effective policy interventions.

II. REVIEW OF LITERATURE

Financial inclusion continues to be a major developmental challenge, particularly in rural and economically backward regions where access to formal financial services remains limited. In this context, digital payment systems have emerged as an important tool to bridge the gap between the unbanked population and the formal financial sector.

Several studies highlight the positive impact of digital payments on financial inclusion. For instance, Mohammad Yuko et al. (2025) found that in rural areas of Indonesia, the adoption of digital payment methods such as e-wallets and QR-based systems significantly improved access to financial services. Their study revealed that despite only 70.13% financial inclusion in rural populations, digital platforms have helped expand financial accessibility and reduce reliance on informal systems.

Similarly, Jayantika Yadav and Aamir Aijaz Syed (2026) examined digital payment adoption among rural women in India and found that digital financial services have played a crucial role in enhancing financial inclusion and empowerment. Their findings suggest that digital payments not only improve access to financial services but also support economic participation among marginalized groups.

Research conducted by Agung Satya Nagara et al. (2024) in rural West Java further supports these findings, indicating that digital payment adoption significantly enhances access to financial products and contributes to overall community well-being. The study emphasizes that digital tools are particularly effective in regions with limited banking infrastructure.

In the Indian context, Niranjan Behara (2026) highlights the transformative impact of digital payment systems such as UPI, mobile wallets, and Aadhaar-enabled payment systems. The study reports a notable increase in India's Financial Inclusion Index and suggests that digital payments have improved access, usage, and quality of financial services, especially in rural areas. However, challenges such as digital literacy, infrastructure gaps, and trust issues continue to hinder widespread adoption.

Likewise, Jayashree Bordoloi (2025) emphasizes that digital payment systems play a vital role in enhancing economic engagement in remote areas. The study demonstrates that digital financial services contribute to income generation, business growth, and financial resilience, although adoption barriers remain.

Beyond these studies, existing literature also provides broader insights into digital finance and inclusion. Asli Demirguc-Kunt et al. (2018) highlight that digital financial services have significantly improved account

ownership and transaction efficiency globally. Similarly, Leora Klapper (2017) notes that mobile-based financial services have expanded financial access among low-income populations.

Furthermore, David Birch (2015) argues that digital payments reduce transaction costs and enhance transparency, making them highly effective tools for financial inclusion. Raghuram Rajan (2016) also emphasizes the importance of technology-driven financial systems in improving access to banking services in India.

In addition, Thorsten Beck et al. (2007) underline the importance of financial system accessibility in reducing poverty and promoting economic growth, while Allen Franklin et al. (2016) demonstrate how digital financial services contribute to financial inclusion through improved financial intermediation.

Overall, the literature consistently indicates that digital payment systems play a significant role in promoting financial inclusion by improving access, reducing costs, and increasing efficiency. However, most studies focus on general rural populations or broader national contexts, with limited attention to region-specific backward areas such as Wayanad district. This highlights the need for localized studies to better understand the unique challenges and opportunities associated with digital payment adoption in such regions.

III. STATEMENT OF THE PROBLEM

Digital payment systems such as UPI, mobile wallets, and internet banking have brought a significant transformation in the way financial transactions are carried out in India. With the support of government initiatives like Digital India, there has been a strong push towards a cashless economy, encouraging individuals to adopt digital financial services and thereby improving financial inclusion and access to banking facilities (Reserve Bank of India [RBI], 2023).

Despite Kerala's high literacy rate and well-developed banking infrastructure, the adoption of digital payment systems is not uniform across the state. A noticeable gap exists between urban and rural areas, where factors such as digital literacy, income levels, awareness, and trust in technology continue to influence the extent of usage of digital financial services (Nair & Pillai, 2021; Kumar & Thomas, 2022).

In this context, Wayanad district presents a unique case. Regions such as Vythiri Taluk, Mananthavady Taluk, and Sulthan Bathery Taluk consist of rural and economically backward communities where the penetration and effective use of digital payment systems may still be limited. Understanding how these populations perceive and utilize digital payment technologies is essential. Therefore, this study focuses on examining the awareness, adoption, and usage of digital payments in these areas, and evaluates their role in promoting financial inclusion and enhancing access to financial services.

IV. OBJECTIVES OF THE STUDY

1. To examine the awareness, adoption, and usage of the digital payment system in the backward areas of Wayanad.
2. To analyse the role of digital payment systems in promoting financial inclusion and improving access to financial services in the backward areas of Wayand.

V. HYPOTHESES

H_0: Digital payment systems have no significant role in promoting financial inclusion and improving access to financial services in Wayanad district.

H_1: Digital payment systems have a significant role in promoting financial inclusion and improving access to financial services in Wayanad district.

H_0: There is no significant relationship between awareness of digital payment systems and their usage.

H_1: There is a significant relationship between awareness of digital payment systems and their usage.

VI. RESEARCH METHODOLOGY

6.1 Research Design

The study adopts a descriptive research design to examine the awareness, adoption, and usage of digital payment systems, and to analyse their role in promoting financial inclusion in the backward areas of Wayanad district. This design is appropriate as it facilitates a systematic description of the current status and patterns of digital payment usage among respondents**.**

6.2 Area of the Study

The study is conducted in selected backward regions of Wayanad district, specifically in Vythiri Taluk, Mananthavady Taluk, and Sulthan Bathery Taluk. These areas are predominantly rural and economically underdeveloped, where access to modern financial services is still evolving. The selection of these regions provides meaningful insights into digital payment adoption in less-developed contexts.

6.3 Sources of Data

The study is based on both primary and secondary data:

- Primary Data: Collected from respondents using a structured questionnaire focusing on awareness, adoption, and usage of digital payment systems.
- Secondary Data: Sourced from journals, books, government reports, Reserve Bank of India (RBI) publications, and relevant websites related to digital payments and financial inclusion.

6.4 Sampling Method

The study employs a convenience sampling method to select respondents from the chosen taluks. This method is used due to accessibility constraints and ease of data collection in rural areas.

6.5 Sample Size

A total of 100 respondents from the selected backward areas of Vythiri, Mananthavady, and Sulthan Bathery taluks constitute the sample for the study.

6.7 Tools for Data Analysis

The collected data are analysed using appropriate statistical tools, including: Percentage analysis to assess distribution patterns, mean score analysis to evaluate respondent perceptions, and Chi-square test to examine relationships between variables.

VII. RESULTS AND DISCUSSION

7.1 Awareness of Digital Payment Systems

To examine the level of awareness of digital payment systems among respondents, a chi-square test was applied. The expected frequencies were assumed to be equally distributed (50:50) under the null hypothesis.

Table 1: Awareness of Digital Payment Systems

Response	Observed (O)	Expected (E)	$(O-E)^2 / E$
Yes	100	50	50
No	0	50	50
Total χ^2			100

- Degrees of Freedom (df) = 1
- Calculated χ^2 value = 100
- Table value at 5% level = 3.84

Interpretation: Since the calculated chi-square value ($\chi^2 = 100$) is significantly greater than the table value (3.84) at the 5% level of significance, the null hypothesis is rejected. This indicates that the level of awareness of digital payment systems among respondents is statistically significant.
The results further reveal that all respondents (100%) are aware of digital payment systems, reflecting a very high level of awareness in the study area. This suggests that digital payment awareness has effectively reached even backward regions, possibly due to increased mobile penetration, government initiatives, and the growing importance of digital financial services.

7.2 Usage of Digital Payment Systems
To examine the usage of digital payment systems among respondents, a chi-square test was employed. The expected frequencies were assumed to be equally distributed (50:50) under the null hypothesis of no difference in usage.

Table 2: Usage of Digital Payment Systems

Response	Observed (O)	Expected (E)	$(O-E)^2 / E$
Yes	98	50	46.08
No	2	50	46.08
Total χ^2			92.16

- Degrees of Freedom (df) = 1
- Calculated χ^2 value = 92.16
- Critical value at 5% level = 3.84

Interpretation: Since the calculated chi-square value ($\chi^2 = 92.16$) is significantly greater than the critical value (3.84) at the 5% level of significance, the null hypothesis is rejected. This indicates a statistically significant difference between the observed and expected frequencies, confirming that the usage of digital payment systems among respondents is significantly high.
Furthermore, the results show that a vast majority of respondents (98%) use digital payment systems, reflecting a very high level of adoption in the study area. This suggests that digital payment systems have become an integral part of daily financial transactions even in backward regions. The high usage may be attributed to factors such as convenience, time efficiency, ease of access, and increasing trust in digital financial services.

7.4Awareness of Different Digital Payment Methods
To examine whether there is a significant difference in awareness of various digital payment methods among respondents, a chi-square test was applied. The expected frequencies were assumed to be equally distributed across all categories under the null hypothesis.

Table 3: Awareness of Digital Payment Methods

Method	Observed (O)	Expected (E)	$(O-E)^2 / E$
UPI	74	25	96.04
Internet Banking	10	25	9.00
Mobile Wallet	4	25	17.64
Debit/Credit Card	12	25	6.76
Total χ^2			129.44

- Degrees of Freedom (df) = 3
- Calculated χ^2 value = 129.44
- Critical value at 5% level = 7.815

Interpretation: Since the calculated chi-square value ($\chi^2 = 129.44$) is significantly greater than the critical value (7.815) at the 5% level of significance, the null hypothesis is rejected. This indicates that there is a statistically significant difference in the level of awareness among various digital payment methods.

The results further reveal that UPI is the most widely known digital payment method among respondents, accounting for 74% of the total responses. In contrast, awareness of internet banking, debit/credit cards, and mobile wallets is comparatively lower. This suggests that UPI has emerged as the dominant digital payment method in the study area, likely due to its ease of use, accessibility, and widespread acceptance. The comparatively lower awareness of other methods indicates the need for broader digital financial education to promote diversified usage of digital payment systems.

7.5 Perception of Digital Payment System

Table 4: Perception of Digital Payment Systems (Mean Score Analysis)

Statement	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Total (f×x)	Mean Score
Digital payments help in accessing banking services easily	36 (180)	50 (200)	12 (36)	0 (0)	2 (2)	418	4.18
Digital payments reduce the need to visit banks	44 (220)	44 (176)	12 (36)	0 (0)	0 (0)	432	4.32
Digital payments improve access to financial services	28 (140)	60 (240)	12 (36)	0 (0)	0 (0)	416	4.16
Digital payments help promote financial inclusion	20 (100)	68 (272)	10 (30)	0 (0)	2 (2)	404	4.04

Interpretation: The combined mean score analysis indicates that respondents have a positive perception of digital payment systems across all dimensions. The highest mean score (4.32) is observed for the statement that digital payments reduce the need to visit banks, highlighting convenience as a key benefit. Other statements also show high agreement, particularly in improving access to banking and financial services.
Although the perception regarding financial inclusion (mean score = 4.04) is positive, it is comparatively lower than other aspects, suggesting that certain barriers may still exist in achieving complete financial inclusion. Overall, the results confirm that digital payment systems are widely accepted and play a significant role in enhancing financial accessibility in the study area.

VIII. CONCLUSION

The present study highlights the growing importance of digital payment systems in promoting financial inclusion, particularly in backward and rural areas such as Wayanad district. The findings clearly indicate that awareness and usage of digital payment systems among respondents are remarkably high, reflecting the successful penetration of digital financial technologies even in less-developed regions.
The statistical analysis confirms that digital payments significantly influence access to financial services, reduce dependence on physical banking infrastructure, and improve overall financial accessibility. The dominance of UPI and the strong agreement among respondents regarding convenience and efficiency further demonstrate the practical benefits of digital payment systems in everyday financial transactions.
However, the study also reveals that the perception of digital payments in achieving complete financial inclusion, although positive, is comparatively moderate. This suggests that certain challenges such as digital literacy gaps, security concerns, and infrastructural limitations—continue to affect the full realization of inclusive financial systems.
In conclusion, while digital payment systems have emerged as a powerful enabler of financial inclusion, their effectiveness can be further enhanced through focused policy interventions, awareness programs, and infrastructure development. Strengthening these areas will ensure that digital financial services become more accessible, inclusive, and beneficial for all sections of society, particularly in backward regions.

REFERENCES

1) Allen, F., Demirgüç-Kunt, A., Klapper, L., & Peria, M. S. M. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation, 27*, 1–30.
2) Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007). Finance, inequality, and poverty: Cross-country evidence. *Journal of Economic Growth, 12*(1), 27–49.
3) Behara, N. (2026). An empirical study on the role of digital payments in promoting financial inclusion in rural India. *National Research Journal of Banking Finance Management, 13*(1).
4) Birch, D. (2015). *Identity is the new money*. London Publishing Partnership.
5) Bordoloi, J. (2025). Digital payment system and financial inclusion: A study on rural areas. In *Human Rights in Contemporary India: Issues, Challenges and Way Forward* (p. 169).
6) Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. World Bank.
7) Klapper, L. (2017). Financial inclusion in the digital age. *World Bank Policy Research Working Paper*.
8) Kumar, V., & Thomas, A. (2022). Factors influencing digital payment usage in rural India: Evidence from Kerala. *International Journal of Banking, Risk and Insurance, 10*(1), 23–35.
9) Nagara, A. S., Sukaryono, A., & Sukresna, I. M. (2024). The effect of digital payments on financial inclusion in rural West Java. *Research Horizon, 4*(6), 247–254.
10) Nair, S. R., & Pillai, R. K. (2021). Digital payment adoption and financial inclusion in Kerala: A rural–urban analysis. *Journal of Financial Services Research, 15*(2), 45–60.
11) Rajan, R. G. (2016). *I do what I do: On reforms, rhetoric and resolve*. HarperCollins India.
12) Reserve Bank of India. (2023). *Report on trend and progress of banking in India 2022–23*. Reserve Bank of India. https://www.rbi.org.in
13) Yadav, J., & Syed, A. A. (2026). Digital payment adoption and financial inclusion in emerging economies: A study of rural women. *Scriptora International Journal of Research and Innovation (SIJRI)*, 56–65.
14) Yuko, M., Suratin, M., & Sukresna, I. M. (2025). The impact of digital payments on financial inclusion in rural areas. *Research Horizon, 5*(1), 117–124.