

THE IMPACT OF ECONOMIC AND SOCIAL DEVELOPMENT ON CONSUMER ADOPTION OF DIGITAL PAYMENT SYSTEMS IN EMERGING MARKETS: A PRIMARY DATA-BASED STUDY

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Abstract

The rapid expansion of digital payment systems has transformed the manner in which consumers conduct financial transactions in emerging markets. Mobile wallets, internet banking, QR-code payments, debit cards, instant payment platforms and other digital financial services have increasingly become part of everyday economic activity. However, consumer adoption is not determined solely by technological availability. Economic and social development conditions, including income, employment, education, digital literacy, access to smartphones and internet connectivity, social influence, financial awareness and trust, may substantially shape consumers' willingness to use digital payment systems.

The present study proposes a primary-data-based investigation of the relationship between economic and social development and consumer adoption of digital payment systems in emerging markets. The study is designed around a structured questionnaire administered to consumers who have access to digital payment facilities. Economic development is examined through indicators such as income, employment status, financial stability and access to banking facilities, while social development is represented through education, digital literacy, social influence, financial awareness and access to digital infrastructure. Consumer adoption is measured through frequency of use, variety of digital payment services used, intention to continue using digital payments and willingness to recommend digital payment services.

For empirical illustration, a proposed sample of 400 respondents is considered, with data analysis involving descriptive statistics, reliability analysis, correlation analysis, multiple regression and hypothesis testing. The proposed analytical model assumes that economic development and social development positively influence digital payment adoption, while trust and perceived security strengthen the relationship. The study contributes to the literature by integrating economic and social dimensions rather than examining technology adoption as an isolated consumer-level phenomenon. The findings are expected to be useful to banks, fintech companies, policymakers, merchants and financial inclusion institutions seeking to increase responsible digital payment adoption in emerging markets.

Keywords: Digital payments, consumer adoption, emerging markets, economic development, social development, financial inclusion, digital literacy, fintech, mobile payments, primary data.

1. INTRODUCTION

Digital payment systems have become an important component of modern financial and commercial activity. Consumers increasingly use mobile applications, internet banking, QR-code payments, mobile wallets, debit cards and instant payment platforms for purchasing goods and services, transferring money, paying bills and receiving income. This transformation is particularly significant in emerging markets, where digital payment systems can connect consumers to formal financial services and reduce dependence on cash.

The World Bank identifies digital payments and digital financial services as important mechanisms for financial inclusion, economic development and participation in the digital economy. Global Findex evidence also demonstrates that digital payment use has increased substantially in developing economies.

The expansion of digital payment systems, however, does not automatically result in universal consumer adoption. Consumers differ considerably in their economic resources, education, digital skills, access to smartphones, internet connectivity, banking relationships and confidence in digital technologies. Consequently, adoption may be influenced by the broader level of economic and social development experienced by individuals and communities.

Economic development at the consumer level can affect digital payment adoption through income, employment, access to banking services and purchasing capacity. Individuals with relatively stable incomes may have greater access to smartphones, reliable internet connections and formal financial accounts. They may also conduct a larger number of transactions requiring digital payment facilities.

Social development is equally important. Education can improve an individual's ability to understand financial products and operate digital applications. Digital literacy can reduce difficulties associated with registration, authentication and transaction procedures. Social influence can encourage consumers to adopt digital payments when family members, colleagues, friends and merchants increasingly use them.

The issue is therefore broader than technological availability. A digital payment system may be technically sophisticated, inexpensive and widely accessible, but adoption may remain limited if consumers lack financial knowledge, digital skills, trust or adequate infrastructure.

This study examines these dimensions through a primary consumer survey framework. It seeks to determine whether economic and social development characteristics significantly explain differences in digital payment adoption among consumers in an emerging-market setting.

2. BACKGROUND OF THE STUDY

Digital payment adoption has expanded considerably across developing economies. According to the World Bank's Global Findex findings, the proportion of adults in developing economies making or receiving digital payments increased from 35% in 2014 to 57% in 2021. The evidence

also indicates that receiving money into an account can encourage individuals to use other formal financial services.

The expansion is particularly visible in emerging economies that have developed low-cost mobile and real-time payment infrastructures. India, Brazil, Kenya and several other markets demonstrate how digital platforms can rapidly change consumer payment behaviour.

At the same time, adoption is uneven. Differences in income, education, gender, location, age, digital literacy and access to technology may create unequal opportunities to participate in digital financial systems.

Recent research on India's UPI ecosystem indicates that wealth endowment is associated with differences in digital payment adoption, suggesting that economic conditions can influence consumers' ability to overcome the financial and technological costs associated with adoption.

The present study therefore adopts a broader perspective by examining both economic development and social development as determinants of consumer adoption.

3. STATEMENT OF THE PROBLEM

Digital payment systems are frequently presented as instruments of financial inclusion and economic modernization. Nevertheless, the availability of digital payment infrastructure does not guarantee equal adoption among consumers.

Low-income consumers may face difficulties purchasing smartphones, maintaining internet connections or accessing formal financial accounts. Individuals with limited education or digital literacy may find digital payment applications difficult to understand. Consumers may also avoid digital payments because of concerns about fraud, privacy, transaction failures and unauthorized access.

At the same time, social networks can influence consumer behaviour. Individuals may adopt digital payments because family members, friends, colleagues or merchants encourage them to do so. Conversely, communities with limited exposure to digital technologies may continue to rely heavily on cash.

The central problem addressed by this study is therefore:

To what extent do economic and social development factors influence consumer adoption of digital payment systems in emerging markets?

4. OBJECTIVES OF THE STUDY

The study has the following objectives:

To examine the level of consumer adoption of digital payment systems.

- ✧ To identify the economic factors influencing digital payment adoption.
- ✧ To examine the influence of education and digital literacy on digital payment adoption.

- ✧ To assess the effect of financial awareness on consumers' willingness to use digital payments.
- ✧ To examine the role of social influence in digital payment adoption.
- ✧ To determine whether trust and perceived security affect adoption behaviour.
- ✧ To examine the relationship between economic development, social development and digital payment adoption.
- ✧ To develop an empirical model explaining consumer adoption of digital payment systems.

5. HYPOTHESES OF THE STUDY

The following hypotheses may be tested using primary survey data.

- H1: Economic development has a significant positive influence on consumer adoption of digital payment systems.
- H2: Income level has a significant positive relationship with digital payment adoption.
- H3: Financial stability has a significant positive relationship with digital payment adoption.
- H4: Education has a significant positive influence on digital payment adoption.
- H5: Digital literacy has a significant positive influence on digital payment adoption.
- H6: Financial awareness has a significant positive influence on digital payment adoption.
- H7: Social influence has a significant positive influence on digital payment adoption.
- H8: Trust in digital payment systems has a significant positive influence on consumer adoption.
- H9: Perceived security has a significant positive influence on consumer adoption.
- H10: Economic and social development variables collectively explain a significant proportion of variation in digital payment adoption.

6. CONCEPTUAL FRAMEWORK

The conceptual framework proposes that consumer adoption is influenced by two broad dimensions.

A. Economic Development Variables

- Monthly income
- Employment status
- Financial stability
- Bank account ownership
- Frequency of financial transactions
- Access to formal financial services

B. Social Development Variables

- Educational attainment
- Digital literacy
- Financial literacy
- Social influence

Digital awareness

Access to smartphones and internet services

C. Mediating/Supporting Variables

Trust

Perceived security

Perceived convenience

Perceived usefulness

D. Dependent Variable

Consumer Adoption of Digital Payment Systems

Consumer adoption can be measured through:

Frequency of digital payment use

Number of digital payment services used

Intention to continue using digital payments

Preference for digital over cash transactions

Willingness to recommend digital payments

The conceptual relationship can be represented as:

Economic Development + Social Development → Trust/Security/Convenience → Consumer Digital Payment Adoption

7. REVIEW OF LITERATURE

Gupta, Anand and Gupta (2025) examined the relationship between wealth inequality and digital payment adoption using district-level data from India. The study employed Instrumental Variable Quantile Regression (IVQR) and a smooth IVQR approach to investigate whether relative wealth influences UPI adoption. The findings indicate that relative wealth has a positive and significant association with UPI adoption, with the effect becoming more pronounced in districts with higher levels of adoption. The authors explain that consumers face several costs when moving toward digital payments, including smartphone costs, internet expenses, registration requirements, skill acquisition and transaction-related risks. The study is particularly relevant to the present research because it demonstrates that economic conditions and wealth distribution can influence digital payment adoption, rather than technology availability alone.

Yadav (2024) investigated the role of trust and intermediary relationships in the adoption of digital financial services in India. The study found that education, identity documentation and smartphone-use proficiency increase the probability of consumers participating in digital financial services. At the same time, inadequate digital infrastructure and a trust deficit involving digital financial service agents can reduce adoption. The research is important because it demonstrates that digital financial adoption involves both demand-side characteristics, such as education and digital skills, and supply-side factors, such as infrastructure and intermediary trust.

A 2024 study in Information Economics and Policy compared major digital payment systems in Kenya, India, Brazil and Peru, focusing respectively on M-Pesa, UPI, Pix and Yape. The study

emphasizes the importance of payment service providers, regulatory institutions, central banks and interoperability in developing successful digital payment ecosystems. It also identifies implementation strategy, access technology and cash-in/cash-out networks as important factors. At the same time, the study highlights continuing challenges involving universal access, pricing sustainability, privacy and data-related externalities.

Hunter et al. (2025) conducted a systematic literature review examining factors that facilitate or inhibit digital financial services adoption among low-income populations in low- and middle-income countries. The study brings together evidence concerning consumer-level and contextual factors affecting digital financial service adoption. Its focus on economically disadvantaged populations is especially relevant to research examining the relationship between development and digital payment usage.

8. RESEARCH METHODOLOGY

8.1 Research Design

The study adopts a descriptive and explanatory research design. Primary data are proposed to be collected directly from consumers through a structured questionnaire.

The descriptive component identifies patterns of digital payment adoption, while the explanatory component examines whether economic and social development variables significantly influence adoption.

8.2 Population of the Study

The population consists of adult consumers who have access to at least one formal or digital payment facility, such as:

- Mobile payment applications
- Internet banking
- Debit cards
- Credit cards
- Mobile wallets
- QR-code payments
- Instant payment systems
- Bank-based digital payment services

The study can be conducted in selected urban, semi-urban and rural locations within an emerging-market economy.

8.3 Sample Size

For the proposed empirical study, a sample of 400 respondents is recommended.

A stratified or purposive sampling approach may be used to ensure representation across:

8.4 Data Collection

Primary data should be collected through a structured questionnaire.

The questionnaire should contain five sections:

9. STATISTICAL TOOLS

The following statistical techniques can be applied to the primary dataset:

9.1 Descriptive Statistics

Frequency, percentage, mean and standard deviation can be used to describe respondent characteristics.

9.2 Reliability Analysis

Cronbach's alpha can be used to assess the internal consistency of multi-item constructs.

A Cronbach's alpha value of approximately 0.70 or above is commonly treated as evidence of acceptable internal consistency, subject to the characteristics of the scale and research context.

9.3 Correlation Analysis

Pearson correlation can be used to determine the direction and strength of relationships between independent variables and digital payment adoption.

9.4 Multiple Regression

The following regression model can be estimated:

$$DPA = \beta_0 + \beta_1 ED + \beta_2 INC + \beta_3 EDU + \beta_4 DL + \beta_5 FA + \beta_6 SI + \beta_7 TR + \beta_8 SEC + \varepsilon$$

Where:

DPA = Digital Payment Adoption

ED = Economic Development

INC = Income

EDU = Education

DL = Digital Literacy

FA = Financial Awareness

SI = Social Influence

TR = Trust

SEC = Perceived Security

ε = Error term

9.5 t-Test and ANOVA

These tests may be used to identify differences in adoption across demographic groups.

10. ILLUSTRATIVE PRIMARY DATA ANALYSIS

Important methodological note: The numerical results in this section are illustrative values for demonstrating how the article can be written. They are not actual observations from 400 respondents and should be replaced with the user's collected survey data before journal submission.

10.1 Respondent Profile

A proposed survey of 400 consumers can be classified according to age, gender, education, occupation and income.

For example, the final study may present a table such as:

Demographic Variable	Category	Frequency	Percentage
Age	18–25	96	24.0
	26–35	128	32.0
	36–45	92	23.0
	46–55	52	13.0
	Above 55	32	8.0
Education	School	44	11.0
	Undergraduate	148	37.0
	Postgraduate	164	41.0
	Other	44	11.0

These values should be replaced with actual survey frequencies.

10.2 Descriptive Analysis

The proposed analysis would examine respondents' perceptions of economic and social factors. An illustrative result might show that respondents report relatively high levels of convenience and digital literacy, while perceived security and fraud concerns remain important barriers. This would suggest that technological availability alone does not determine adoption. Consumers also need confidence, knowledge and economic capacity to use digital payment systems consistently.

10.3 Reliability Analysis

An illustrative reliability table may be presented as follows:

Construct	Number of Items	Illustrative Cronbach's Alpha
Economic Development	5	0.82
Digital Literacy	5	0.86
Financial Awareness	5	0.84
Social Influence	4	0.79
Trust	5	0.87

Perceived Security	4	0.81
Digital Payment Adoption	5	0.89

These figures are examples only and must be recalculated using the actual dataset.

11. ILLUSTRATIVE CORRELATION ANALYSIS

An illustrative correlation matrix may indicate positive associations between digital payment adoption and economic development, education, digital literacy, financial awareness, social influence, trust and perceived security.

For example:

Variable	Digital Payment Adoption
Economic Development	0.52
Income	0.44
Education	0.38
Digital Literacy	0.61
Financial Awareness	0.57
Social Influence	0.49
Trust	0.64
Perceived Security	0.59

The illustrative pattern indicates that digital literacy, trust and perceived security could have particularly strong relationships with adoption.

However, correlation does not establish causality. Regression analysis would therefore be necessary to examine the independent contribution of each factor.

12. ILLUSTRATIVE REGRESSION ANALYSIS

An illustrative multiple regression model could produce the following structure:

Predictor	Illustrative Beta	Significance
Economic Development	0.18	<0.01
Income	0.11	<0.05
Education	0.09	<0.05
Digital Literacy	0.25	<0.001
Financial Awareness	0.17	<0.01
Social Influence	0.13	<0.05
Trust	0.22	<0.001
Perceived Security	0.16	<0.01

An illustrative model might produce an R^2 of approximately 0.56, indicating that the included explanatory variables collectively account for around 56% of the variation in digital payment adoption.

Again, these are demonstration figures rather than actual primary-data findings.

13. LIMITATIONS OF THE STUDY

The study may have several limitations.

First, a consumer survey may be restricted to selected geographical areas and therefore may not represent every emerging market.

Second, self-reported responses may contain recall or response bias.

Third, the cross-sectional nature of the study may identify associations without establishing long-term causal relationships.

Fourth, digital payment technologies change rapidly, meaning that consumer behaviour may evolve as new payment platforms and regulations emerge.

Finally, economic and social development are multidimensional constructs. A survey cannot capture every aspect of socioeconomic development.

14. SUGGESTIONS FOR FUTURE RESEARCH

Future studies may extend this research in several ways.

- ◆ Comparative studies can examine digital payment adoption across different emerging economies.
- ◆ Longitudinal research can examine changes in consumer behaviour over several years.
- ◆ Rural and urban consumers can be compared separately.
- ◆ Gender differences can be investigated.
- ◆ Researchers can examine the role of artificial intelligence in digital payment security.
- ◆ Future studies can investigate elderly consumers and digital exclusion.
- ◆ Structural Equation Modeling can be used to examine direct and indirect relationships among development, trust, security and adoption.
- ◆ Future research can investigate how digital payment adoption affects household savings and financial resilience.
- ◆ Studies can examine the relationship between digital payment adoption and small-business formalization.
- ◆ Experimental research can test whether financial-literacy interventions increase adoption.

15. CONCLUSION

The adoption of digital payment systems in emerging markets is not merely a technological phenomenon. It is closely connected with the economic and social development of consumers and communities. Income, employment, financial stability and banking access provide economic foundations for adoption, while education, digital literacy, financial awareness and social influence shape consumers' ability and willingness to use digital payment services.

Trust, perceived security and convenience further influence whether initial adoption develops into regular usage. The availability of digital infrastructure is therefore necessary but not sufficient.

Sustainable adoption requires consumers to possess the economic resources, knowledge, confidence and social support needed to participate in digital financial systems.

The proposed primary-data framework provides a systematic method for examining these relationships at the consumer level. By collecting data directly from users and applying reliability analysis, correlation, regression and demographic analysis, researchers can identify the factors that most strongly explain digital payment adoption within a particular emerging-market context.

The broader implication is that digital payment development should be accompanied by inclusive economic and social development. Expanding payment infrastructure without addressing digital literacy, affordability, security and consumer trust may leave some groups behind. A more comprehensive approach can help ensure that digital payments contribute not only to transaction efficiency but also to wider financial inclusion and participation in the digital economy.

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