SHODH SAMAGAM

ISSN : 2581-6918 (Online), 2582-1792 (PRINT)

Influence of Demographic Factors on the Acceptance of Digital Payment Systems: A Study of Patna Town, Bihar

Shalini, PhD, Faculty of Commerce
Vanijya Mahavidyalaya, Patna University, Patna, Bihar, INDIA

ORIGINAL ARTICLE



Author
Shalini, Ph.D.
E-mail : shalinigalaxofficial@gmail.com

shodhsamagam1@gmail.com

Received on : 26/08/2026
Revised on : 27/10/2026
Accepted on : 05/11/2026
Overall Similarity : 00% on 28/10/2026



Plagiarism Checker X - Report
Originality Assessment
0%
Overall Similarity

Date: Oct 28, 2026 (05:16 PM)
Matches: 5 / 3320 words
Sources: 1

Remarks: No similarity found, your document looks healthy.

Verify Report: Scan this QR Code



ABSTRACT

The emergence of digital payment systems has redefined the financial transaction landscape in India by offering efficient, secure, and user-friendly alternatives to traditional cash-based practices. Their adoption has witnessed remarkable growth, largely driven by technological innovation, increasing smartphone penetration, policy interventions such as demonetisation, and the behavioural shifts induced by the COVID-19 pandemic. The present study seeks to analyse the role of demographic variables in influencing the acceptance of digital payment mechanisms, with specific reference to consumers in Patna Town, Bihar. Primary data for the study was obtained from 420 respondents through a structured questionnaire, using a convenience sampling technique. In alignment with the research objectives, relevant hypotheses were developed and subsequently tested with the help of IBM SPSS (Version 22). The analysis indicates that demographic variables exert a significant influence on the acceptance of digital payment systems. Overall, the respondents demonstrated a high level of acceptance toward digital payment modes. However, the results also show that gender does not have a statistically significant association with the adoption of such systems. However, variables such as income, age, and education showed a statistically significant relationship with digital payment adoption. These insights provide valuable guidance for banks, policymakers, and fintech providers in designing more inclusive and targeted digital financial strategies.

KEY WORDS

Cashless Transactions; Customer's Acceptance; Demographic Factors; Digital Payment Systems.

INTRODUCTION

With the rapid shift toward a cashless economy, digital payment systems have become an integral part of India's financial ecosystem. The utilisation of digital payment systems witnessed a notable surge during the demonetisation phase (Sivanthanu, 2019) and the COVID-19 pandemic, indicating a clear shift toward digital transactions. In cities like Patna, Bihar, where urbanization is on the rise, understanding the dynamics behind digital payment adoption is essential. While the technology is widely available, the rate of acceptance among consumers remains uneven and much of this gap can be attributed to demographic variables. Characteristics such as age, gender, education level, and income significantly shape individuals' readiness to adopt digital financial services. For instance, younger, more educated individuals may exhibit higher acceptance due to digital familiarity (Sobti, 2019) (Vasta, 2023), whereas older or less-educated populations may experience hesitation or distrust, contributing to a digital divide. Moreover, higher income provides sense of financial security to adopt digital payment solutions (Lohani & Roy, 2021). Furthermore, gender disparities can influence the extent to which individuals face challenges in transitioning from traditional cash transactions to digital modes. These demographic influences not only affect the level of acceptance but also contribute to the challenges users face when transitioning to digital payment systems. Understanding these demographic influences is vital for policymakers, banks, and fintech providers to formulate inclusive strategies that overcome prevailing barriers and encourage greater adoption of digital payment systems across all segments of society.

Significance of the Study

This study holds significance as it examines the influence of demographic variables on the acceptance of digital payment systems, offering valuable insights into user behaviour and barriers to adoption. By identifying key differences in usage based on gender, age, education, and income, the study helps highlight areas where digital inclusion efforts need to be strengthened. It contributes to the understanding of user needs and challenges, which is essential for improving the design, accessibility, and outreach of digital financial services.

Review of Literature

Teka (2017) in his study conducted among 600 users in Ethiopia, the researcher examined the impact of demographic attributes on the adoption of electronic banking services. The results revealed that gender plays a significant role in influencing e-banking adoption, while variables such as age, income, education, and occupation were not found to exert a substantial effect on user behaviour.

Yaokuman (2017) This research explored how demographic characteristics shape customer attitudes toward e-payment services. Using data from 558 bank clients, the findings indicated that there was no statistically significant variation between male and female respondents with respect to the utilisation of electronic payment services. However, male users, despite possessing stronger ICT skills, perceived e-payment systems as less secure. Similarly, individuals with higher educational qualifications also reported lower perceptions of security. Older customers expressed greater satisfaction with e-payment services, while younger customers, equipped with better ICT skills, tended to use them more often. Notably, the study revealed that dissatisfaction did not exert a significant influence on the actual utilisation of electronic payment services.

Singh & Rana (2017) The study aimed to explore customer perceptions regarding digital payment systems. The findings demonstrate that, with the exception of education, demographic variables exert minimal influence on the adoption of digital payments. No statistically significant differences were identified among respondents in relation to gender, age, occupation, or annual income. The results highlight that the educational attainment of customers serves as a critical determinant in influencing their adoption of digital payment modes.

Uddin & Rahman (2019) The study investigated how demographic variables such as gender, age, education and income affect the acceptance of e-payment systems for shopping. The results highlight that these demographic factors positively influence individuals' willingness to use e-payment methods for their shopping.

Said, Najdawi & Chabani (2021) have undertaken research to explore factors influencing adoption of e-payments technologies in the UAE. After analysing the response of 270 respondents, it is revealed that adoption of e- payment service is very high and high income groups have positive influence on adoption of e- payment services. On the other hand, remaining factors such as gender, profession, age groups, marital status showed no significant relation with adoption of e- payment services.

Lohana & Roy (2021) a study was undertaken to examine the influence of demographic variables on consumer usage of digital payment systems. The research, conducted on a sample of 599 respondents across Indian cities, revealed that age, occupation, education, and income significantly affected the use of digital payments. However, gender and marital status were not found to have a meaningful impact on consumer adoption of these services.

Lavanya & Shrivastava (2024) investigated the role of demographic characteristics in shaping preferences and adoption of digital payment systems among 700 respondents. Their findings suggest that variables such as gender, marital status, occupation, and monthly income are critical in determining user preference and adoption patterns.

Research Gap

While several studies have explored the effect of demographic factors on the adoption of digital payment systems, their conclusions remain inconsistent across different consumer groups. These variations highlight the necessity for further investigation to gain a clearer understanding of the role played by demographic factors. Addressing this gap, the present study seeks to examine the association between demographic characteristics and the acceptance of digital payment systems among consumers in Patna.

Objectives of the Study

The study has been carried out with the following objectives:

1. To assess the level of acceptance of digital payment systems.
2. To analyse the demographic factors influencing the acceptance of digital payment systems.

Research Methodology

The data was collected from the 420 customers of Patna Town, Bihar, India through structured survey questionnaire and convenient sampling method was undertaken. Subsequently, on the basis of objectives hypothesis was formulated and tested. IBM SPSS version 22 software was used for recording and analysing data. To test the hypotheses, the chi-square test was employed to examine the association between demographic variables and the acceptance of digital payment systems.

Limitations of the Study

This study covered particular geographical area i.e., Patna, Bihar which may limit its applicability to different regions. This study is limited to 420 respondents only which can be conducted with larger sample size to enhance accuracy and reliability of results. This study is limited to certain demographic variables such as gender, age, monthly income, and education.

Hypothesis Testing and Interpretation

H_0: There is no significant association between gender and acceptance of digital payment system.

H_1: There is significant association between gender and acceptance of digital payment system.

Gender: How often do you use digital or online payments modes? Crosstabulation

Count						
		How often do you use digital or online payments modes?				
		Mostly	Sometimes	Rarely	Never	Total
Gender	Female	65	52	6	23	146
	Male	139	81	22	32	274
Total		204	133	28	55	420

*(**Source:** Primary Data)*

Interpretation: The above cross tabulation shows how male and female respondents differ in their use of digital payment system. Among 274 male respondents, 139 (51% approx.) use mostly, while among 146 female respondents, only 65 (44% approx.) use digital payment system mostly. This suggests that male respondents tend to use digital payments more frequently than female respondents.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.261[a]	3	.154
Likelihood Ratio	5.402	3	.145
Linear-by-Linear Association	.985	1	.321
N of Valid Cases	420		

Interpretation: The above results of chi- square tests result shows that chi- square value is 0.154 which is greater than p- value 0.05. It indicates null hypothesis is accepted.

Therefore, it is concluded that there is no significant association between gender and acceptance of digital payment systems among the respondents.

H_0: There is no significant association between income and acceptance of digital payment system.

H_1: There is significant association between income and acceptance of digital payment system.

Gross Monthly Income: How often do you use digital or online payments modes? Crosstabulation

Count						
		How often do you use digital or online payments modes?				Total
		Mostly	Sometimes	Rarely	Never	
Gross Monthly Income	Less than Rs.10,000	60	45	11	24	140
	Rs.10,000-Rs 25000	44	30	5	12	91
	Rs.25,000-Rs 50,000	31	32	10	8	81
	Rs.50,000- Rs.1,00,000	40	19	1	4	64
	Rs.1,00,000 and above	29	7	3	5	44
Total		204	133	30	53	420

*(**Source:** Primary Data)*

Interpretation: On the basis of above table higher income group tend to use digital payments mostly and lower income groups have more people in the "Never" and "Rarely" categories. Hence, it indicates income increases, the acceptance and frequency of digital payment usage also increases.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.352[a]	12	.018
Likelihood Ratio	25.775	12	.012
Linear-by-Linear Association	8.228	1	.004
N of Valid Cases	420		

Interpretation: The above table shows the Pearson chi- square value with a p- value=0.018 which indicates that there is association between income and digital payment usage is statistically significant at the 5% level. Since, p-value is less than 0.05, we reject the null hypothesis and accept the alternative hypothesis.Therefore, it is concluded that there is significant association between income and acceptance of digital payment systems among the respondents. **H_0:** There is no significant association between age and acceptance of digital payment system.**H_1:** There is significant association between age and acceptance of digital payment system.

Age: How often do you use digital or online payments modes? Crosstabulation

Count						
		How often do you use digital or online payments modes?				Total
		Mostly	Sometimes	Rarely	Never	
Age	18-30 years	83	29	6	5	120
	30-40 years	76	36	5	5	122
	40-60 years	45	52	6	17	120
	60 and above years	4	18	12	21	58
Total		208	135	29	48	420

*(**Source:** Primary Data)*

Interpretation: The above crosstabulation indicates younger age groups have a higher rate of using digital payments "mostly" and older age groups shows high rate of "rarely" or "never" using digital payments. Hence, it implies trend of increasing acceptance among younger people.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	123.722[a]	9	.000
Likelihood Ratio	116.734	9	.000
Linear-by-Linear Association	89.509	1	.000
N of Valid Cases	420		

Interpretation: The above table shows that the chi- square value is 123.722 with p- value of 0.000 which is less than 0.05. Hence, the null hypothesis can be rejected and alternative hypothesis is accepted. Therefore, it is concluded that there is significant association between age and acceptance of digital payment systems among the respondents.

H_0: There is no significant association between educational level and acceptance of digital payment system.

H_1: There is significant association between education level and acceptance of digital payment system.

Education: How often do you use digital or online payments modes? Crosstabulation

Count						
		How often do you use digital or online payments modes?				Total
		Mostly	Sometimes	Rarely	Never	
Education	Basic Education	9	12	6	9	36
	Higher Secondary	30	33	7	22	92
	Graduation	92	61	12	9	174
	Post-graduation & above	78	30	5	5	118
Total		209	136	30	45	420

*(**Source:** Primary Data)*

Interpretation: The above crosstabulation shows people with higher education (both graduation and post-graduation) mostly use digital payments. In contrast, those with basic education have fewer "mostly" users and relatively more users in the "rarely" and "never" categories.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	56.482[a]	9	.000
Likelihood Ratio	53.509	9	.000
Linear-by-Linear Association	45.951	1	.000
N of Valid Cases	420		

Interpretation: The above table shows Pearson chi- square value 56.482 and p- value is 0.000 which is less than 0.05, shows significant association between education and digital payment usage. Hence, the null hypothesis will be rejected and alternative hypothesis will be accepted.

Therefore, it is concluded that there is significant association between education and acceptance of digital payment systems among the respondents.

Implications of the Study

The study reveals that demographic factors significantly influence the acceptance of digital payment systems, offering valuable guidance for banks, policymakers, and fintech providers. Banks can use these insights to develop inclusive financial products and offer targeted support to underrepresented groups such as homemakers, the elderly and less-educated individuals. Policymakers can design focused financial inclusion programs, subsidies, and awareness campaigns to bridge the digital divide and promote digital literacy, especially among low-income and rural populations. Fintech providers can tailor their platforms with user-friendly, multilingual, and low-data features to meet the needs of diverse user groups. Hence, the study supports the creation of more inclusive and

accessible digital payment solutions, contributing to the broader goals of financial inclusion and the Digital India initiative.

Findings of the Study

The following results derived from the data collected from 420 respondents through structured questionnaire:

a) The study includes 35% female and 65% male respondents.

b) It was found that 27.8% of the respondents were within the age group of 18–30 years, 28.5% to the 30–40 age group, another 28.5% to the 40–60 age group, and 15.3% to the 60 and above age group.

c) About 64.58% of respondents was married, while the remaining 35.42% were unmarried.

d) Around 59.26% of respondents belong to nuclear families, while the remaining 40.74% belong to joint families.

e) Educational qualifications of respondents revealed that 41.2% were graduates, 22.5% had completed intermediate education, 20.6% were postgraduates, 6.9% held doctorates, 5.8% had studied up to matriculation, 1.8% had primary/secondary education, and the remaining 1.2% had no formal education.

f) Occupational status showed that 38.7% of respondents were employed in the private, Government, or semi-Government sectors, 16.9% were self-employed, 12.3% were homemakers, 20.4% were students, 3.5% were unemployed, and the remaining 8.3% were retired or engaged in other unspecified activities.

g) It has been observed the gross monthly income of respondents were, 33.6% earned less than 10,000, 22% earned between 10,000– 25,000, 19.2% earned between 25,000– 50,000, 15% earned between 50,000–1,00,000, and the remaining 10.2% earned more than ₹ 1,00,000 per month.

h) It was observed that 99.3% of the 432 respondents have a bank account, which is a prerequisite for making digital payments.

i) It was found that 93.8% of the respondents possess debit or credit cards, which are typically required to link with payment applications. The remaining 6.2% have not been issued cards by their banks.

j) The usage of digital payment modes shows that 47.2% of respondents mostly use digital payments, 30.8% use them sometimes, 7.2% rarely use them due to a lack of confidence, and 14.8% never use digital payment modes. Thus, 78% of the respondents have adopted digital payment methods to some extent.

CONCLUSION

The study concludes that gender does not exhibit a significant association with the acceptance of digital payment systems, whereas variables such as income, age, and education demonstrate a statistically significant relationship with their adoption. Overall, the findings indicate a broad level of acceptance of digital payment systems in Patna, Bihar. However, notable disparities persist, particularly in relation to demographic factors such as gender, age, income, and education. These variations underscore the necessity of fostering a more inclusive and equitable digital payment ecosystem. To address these challenges, the study recommends targeted policy interventions, user-centric digital platform designs, digital literacy programs, and financial incentives to encourage wider and more confident usage across all demographic groups.

Suggestions

Based on the demographic analysis of respondents and their engagement with digital payment systems, the following suggestions are proposed to enhance the adoption and inclusive growth of digital payment infrastructure:

a) **Promote Digital Literacy among Women:** Launch digital literacy programs specifically targeting women, especially in regions where their participation in formal banking systems or digital ecosystems is limited. This will help bridge the gender gap in digital payment adoption.

b) **Age-Specific Campaigns and Support Systems:** Implement age-wise segmentation in digital payment awareness campaigns. For older users, simplify app interfaces and ensure the availability of in-person training and support to build their confidence and ease of use.

c) **Family-Centric Financial Tools:** Encourage the use of shared digital wallets or family-linked payment platforms that cater to both nuclear and joint families. Promote family-oriented digital financial planning tools to foster collective adoption.

d) **Inclusive Design for Low-Educated Users:** As higher education correlates positively with digital payment acceptance, efforts must be made to include those with lower education levels. This includes designing visual-first, language-inclusive user interfaces, and conducting community-level awareness drives to build digital capability.

e) **Targeted Solutions for Homemakers and Informal Workers:** Develop budgeting and expense-tracking apps tailored to homemakers, and incentivize informal workers and small-scale entrepreneurs to adopt digital payments through integration with micro-credit schemes or other financial incentives.

f) **Financial Accessibility for Low-Income Groups:** Ensure that low-income individuals are not excluded from digital financial services. Promote low-fee or no-fee payment platforms and introduce Government-backed subsidies or reward-based systems for digital payment usage.

g) **Focus on Trust and Security:** With the basic infrastructure in place (i.e., widespread access to bank accounts and debit/credit cards), the next step is to enhance user trust by ensuring robust cyber security measures, transparent data practices, and seamless digital payment experiences.

h) **Address Behavioural and Technical Barriers:** To convert non-users and hesitant users (21.8% of the sample), identify their specific challenges such as lack of confidence, technical difficulties, or security concerns and address them through confidence-building campaigns, 24/7 customer support, and step-by-step tutorials for on boarding and usage.

REFERENCES

1. Lavanya, R. & Shrivastava, S. (2024). Demographic Factors Influencing the Adoption of Digital Payment Methods: A Statistical Analysis of User Preference. *Journal of Management,* 11(3), 1-15.
2. Lohani, S., & Roy, D. (2021). Impact of Demographic Factors on Consumer's Usage of Digital Payments. *FIIB Business Review*, 12(4), 459-473. https://doi.org/10.1177/23197145211049586.
3. Said, R.; Najdawi, A. & Chabani, Z. (2021). AnalyDemographic Analytics: The Case of Dubai. *Advances in science, Technology, and engineering Systems,* 6(2), 113-121.
4. Singh, S. & Rana, R. (2017). Study of Consumer Perception of Digital Payment Mode. *Journal of Internet Banking and Commerce,* 22(3), 1-14.
5. Sivanthanu, B. (2019). Adoption of Digital Payment Systems in the Era of Demonetisation in India. *Journal of Science and Technology Policy Management,* 10(1), 143–171. https://doi.org/10.1108/JSTPM-07-2017-0033.
6. Sobti, N. (2019). Impact of Demonetization on diffusion of mobile payment Service in India. *Journal of Advances in Management Research*, 16(4), 472-497. https://doi.org/10.1108/JAMR-09-2018-0086.
7. Teka, B. M. (2017). Influence of Demographic Factors on User's Adoption of Electronic Banking in Ethiopia. *Journal of Internet Banking and Commerce,* 22(S7), 1-6.
8. Uddin, K. S. & Rahman, M. T. (2019). Structural Modeling Using AMOS to Identify the Demographic Factors Affecting Shopping through E- Payments. *Int. Journal of Information Science,* 9(1), 1-5.
9. Vasta, P. (2023). Mobile Payment Adoption in China: Do demographic and socioeconomic factor matter? *Managerial and Decision Economic*, 45(3), 1428-1434. https://doi.org/10.1002/mde.4086.
10. Yaokuman, W. (2017). Demographic Influences on E- Payment Services. *Int. Journal of E- Business Research,* 13(1), 44-66.

****