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Digital Payment System and the Transformation of Retail Investment in India: The role of NPCI

Aryan Mishra1, Dr. Sneha Raghuvanshi[2]
[1]PG Scholar, Department of Management Studies, Medicaps University, Indore, Madhya Pradesh, India
[2]Assisstant Professor, Department of Management Studies, Medicaps University, Indore, Madhya Pradesh

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Abstract

This study explores the impact of digital payment systems on retail investments in India, focusing on the National Payments Corporation of India (NPCI) and its role in enhancing transactional efficiency. The rapid evolution of the digital payment landscape is driven by improved mobile connectivity, infrastructure advancements, and initiatives like Digital India. These changes are transforming how retail investors engage with the stock market and investment opportunities. Utilizing a quantitative approach, the research analyzed data from 157 retail investors to assess the relationship between digital payment methods, investment behavior, and transactional efficiency. Findings reveal that digital payment systems significantly influence retail investing by facilitating quicker and more convenient transactions. Factors such as a preference for digital payments, perceived convenience, and the impact of the Unified Payment Interface (UPI) contribute to increased investment frequency. The study underscores NPCI's vital role in developing the digital payment infrastructure, promoting transactional efficiency and financial inclusion. However, it also highlights the need to address security and trust concerns to encourage continued usage and enhance investor confidence. The implications are significant for financial institutions, policymakers, and investors, emphasizing the importance of leveraging digital payment technology for a more efficient and inclusive investment landscape in India.

Keywords: Digital Payment Systems, Retail Investments, Transactional Efficiency, Investment Behavior, Security, Infrastructure Development

Introduction

India's financial landscape is seeing a substantial transformation, mostly driven by the rapid and extensive use of digital payment technologies. This evolution represents not just a technology transition; it is fundamentally transforming the conduct of financial transactions and significantly impacting numerous aspects of the Indian economy, particularly in retail investing [1]. The increase in digital payment adoption is due to a combination of factors, such as the expanding reach of mobile connectivity [2], ongoing advancements in digital infrastructure [3], and the widespread utilization of information technology [4]. Government initiatives, exemplified by the ambitious Digital India program, which "aims to transform India into a digital society and knowledge economy" [5], are pivotal in expediting this transition [7], promoting a vision of a less-cash economy [8] and pursuing enhanced digital inclusion [3]. The rise of digital payments, defined as "payments transacted online using digital mode" [8], has instigated a notable transformation in consumer behavior, as cashless transactions increasingly supplant conventional, physical methods of commerce [4][9]. This behavioral shift has permeated the investment sector, with digital platforms and payment systems rapidly enabling more accessible, easy, and expedited engagement in the stock market and various other investment opportunities [10]. [11] emphasize that the technological revolution has instigated a profound transformation of the Indian stock market, eliminating geographical barriers that once restricted investor access and improving the availability of a broader array of financial products and services.

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Nonetheless, it is essential to recognize that this swift digitalization and growing dependence on digital payment systems also pose a series of intrinsic problems. Security concerns are of utmost importance, necessitating ongoing and thorough research to fully comprehend the complex relationship between technological advancement and the need to ensure safety and security in digital payment systems [4][9]. [12] highlight that elements such as security systems, governmental regulations, ease, productivity, and flexibility affect client intentions about the utilization of digital payment methods. In this dynamic and growing ecosystem, the National Payments Corporation of India [13], "an authorized payment systems operator in India," plays a fundamental and crucial role. Founded under the Payment and Settlement System Act of 2007 by the Reserve Bank of India and the Indian Banks' Association (IBA) [6], NPCI has played a pivotal role in the development of new and revolutionary solutions. Systems such as the Unified Payments Interface (UPI), "a real-time payment system that facilitates instant fund transfers between two bank accounts on a mobile platform" [14], have markedly improved transactional efficiency [15], allowing for seamless and immediate digital transactions, thus transforming the nature of financial interactions within the country [16][17] emphasize NPCI's contribution to advancing a cashless economy and promoting financial inclusion.

This study aims to thoroughly examine the influence of digital payment systems on retail investments in India, particularly focusing on the essential role of NPCI in improving transactional efficiency. This research aims to deliver valuable insights by meticulously analyzing the complex relationships among digital payment systems, retail investor behavior, and the efficiency of investment transactions, benefiting various stakeholders, including financial institutions optimizing digital offerings [18], policymakers creating a supportive regulatory framework, and individual investors navigating the changing digital investment landscape [19].

2- Literature Review

The literature review examines the changing dynamics of digital payments in India and their effects on several facets of the economy, especially on retail investments.

Numerous studies underscore the growing prevalence of digital transactions in India, propelled by enhanced mobile connectivity, infrastructure advancements, and the use of information technology [3][4][9]. This transition has resulted in the increased prevalence of cashless payments, altering consumer behavior and daily life [4][9]. Researchers underscore the ongoing issues associated with security and the necessity for additional exploration of the connection between technology and safety in digital payment systems [4][9][12]. Digitalization entails inherent complications. Digital payments enhance transparency and assist in mitigating corruption and illicit finances [7]; yet, apprehensions regarding cyber fraud persist [4][7]. The National Payments Corporation of India [13] plays a vital part in this progress. The activities of NPCI, particularly the Unified Payments Interface [14], have substantially advanced the proliferation of digital payments and are increasing both nationally and internationally [3][6][17]. These developments are facilitated by governmental initiatives such as the Digital India program, which seeks to convert India into a digital society [2][6].

The influence of digital technology on the Indian stock market is significant, as enhanced internet penetration and digital platforms have eliminated geographical barriers and facilitated greater accessibility to investors [10][11][18]. Behavioral biases in investors, including overconfidence and herd mentality, might affect investment decisions, potentially resulting in suboptimal outcomes [20]. The research indicates that India is undergoing a swift shift to a digital economy, with digital payments being essential. This transition offers both

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benefits and problems, necessitating consideration of variables such as security, trust, and investor behavior to guarantee sustained growth and development [1][15][19].

3- Significance and Objectives of current study

This study explores the impact of digital payment systems on retail investments in India, focusing on the role of the National Payments Corporation and other factors and aims to:

- To investigate the influence of digital payment systems on retail investments in India
- The assessment of the function of NPCI in improving transactional efficiency through its digital payment platforms
- Identifying the primary factors that influence investment behavior in the context of digital payment systems

4. Research Methodology

This section outlines the study methods utilized to investigate the influence of digital payment systems on retail investment behavior in India. It delineates the research plan, data collection methodologies, and data analysis protocols.

4.1 Overview:

The research utilizes a quantitative approach, implementing a survey methodology. This method facilitates statistical examination of the correlations among variables to comprehend the impact of digital payment systems on retail investments in India. The quantitative method facilitates statistical analysis, essential for assessing the influence of digital payment systems on investment behavior. This methodology allows for the quantification of correlations between variables (such as preference for digital payments and investment frequency) and the testing of hypotheses.

4.2 Variables:

4.2.1 Dependent Variables:

Investment Frequency (V10): This is the frequency with which retail investors partake in investing transactions.

4.2.2 Independent Variables:

Preference for Digital Payments (V17): The degree to which investors prefer digital payment systems compared to traditional ones.
Convenience of Digital Payment (V4): The usability and accessibility of digital payment systems.
Sufficiency of Current Refund Mechanism (V14): Investors' assessment of the security and dependability of digital transactions, with particular emphasis on return mechanisms.
Impact of Digital Payment Systems (V15): The perceived comprehensive effect of digital payment methods on the investment process.
UPI's Role in Improving Digital Payment Experience (V7): The function of the Unified Payments Interface (UPI) in advancing digital payments within the investing sector.
Speed/Fastness of Digital Transactions (V6): The perceived speed and efficacy of digital payment transactions.

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4.3 Data Collection:

Data was gathered utilizing a standardized questionnaire. The questionnaire had inquiries regarding demographics, factors associated with digital payment systems (V4, V6, V7, V14, V15, and V17), and investment frequency (V10). The questionnaire was developed following the literature review.

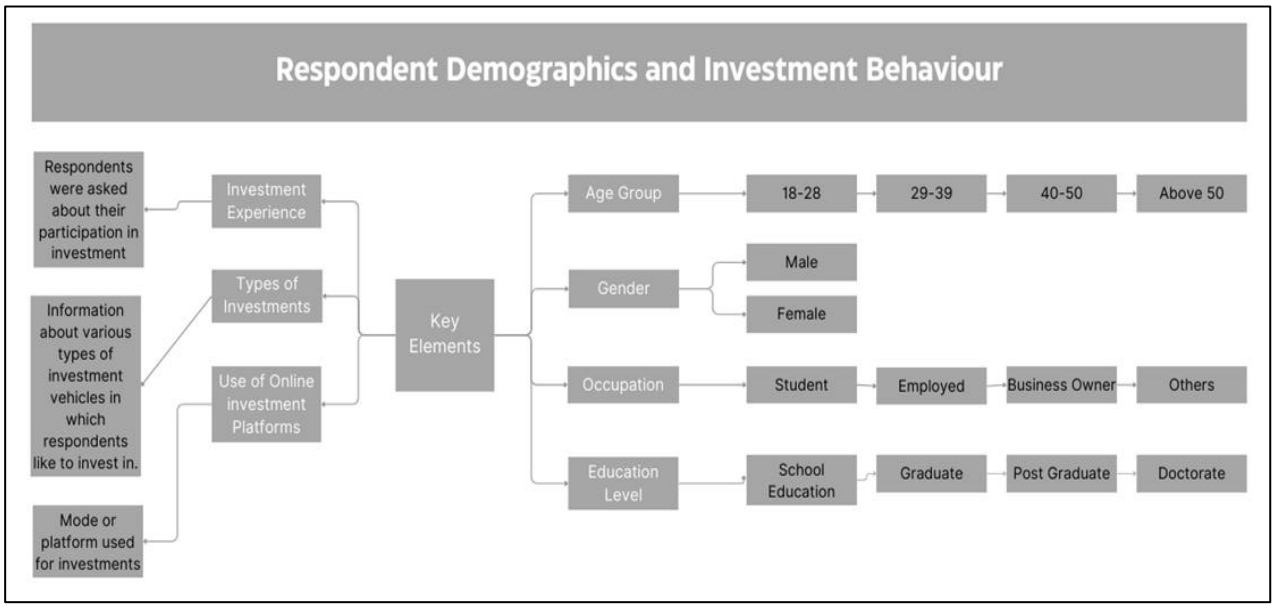

Figure 1

4.4 Participants:

The study included 157 respondents, drawn from retail investors in the Indore region of Madhya Pradesh, India.

4.5 Sampling Procedure:

A representative sample method was utilized. The survey was conducted online through Google Forms, with the link disseminated via email, WhatsApp, Telegram, and QR codes. Informed consent was secured, and data collecting transpired over a fortnight. The confidentiality and anonymity of participants' responses were guaranteed.

4.6 Data Analysis:

Statistical Software: IBM's SPSS and Microsoft Excel were used for organizing and analyzing data.

Data Preparation: The collected data from respondents was first organized using Microsoft excel, then was imported to SPSS and was checked and corrected for any missing values, then it was processed and made ready for various statistical processes and procedures.

5. Hypothesis Testing:

5.1 Hypothesis:

Null Hypothesis (H_0): Digital payment systems have no significant impact on retail investment in India.

Alternative Hypothesis (H_1): Digital payment systems have a significant impact on retail investment in India.

The following statistical methods were used for testing the hypothesis:

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5.2 Multiple Linear Regression Analysis:

To assess the impact of digital payment variables on retail investing behavior.

This analysis specifically examines the key assumptions by assessing the overall impact of digital payment elements (including security, convenience, and preference) on investment frequency.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.420	.309		1.357	.177	-.191	1.031		
	V17	.150	.067	.166	2.235	.027	.017	.282	.635	1.574
	V4	.107	.073	.121	1.479	.141	-.036	.251	.518	1.929
	V14	.100	.077	.099	1.288	.200	-.053	.252	.592	1.688
	V15	.332	.088	.296	3.786	<.001	.159	.506	.571	1.752
	V7	.155	.096	.153	1.616	.108	-.035	.345	.390	2.565
	V6	.068	.090	.074	.751	.454	-.111	.246	.359	2.783

a. Dependent Variable: V10

Figure 2

Significant Predictor: The variable "V15" exhibits a statistically significant correlation with the dependent variable "V10." The 'Sig.' value for V15 is <.001, which is typically regarded as highly significant. The Beta coefficient for V15 is 0.332, signifying a positive correlation. This indicates that a rise in V15 is associated with an increase in V10.

Preference for Digital Payments (V17): The p-value of this variable is .027, indicating statistical significance. The beta coefficient is 0.150, signifying a positive correlation with the dependent variable V10.

Collinearity: The Tolerance and VIF (Variance Inflation Factor) values indicate that collinearity (elevated correlation among independent variables) is not a significant issue in this investigation. All VIF levels are below 3, a standard threshold for concern.

The research reveals that investors with a preference for digital payment methods and a view of these systems as beneficial to their investment process are more likely to participate in regular investment activities. The study also found that convenience, refund sufficiency, UPI role, and speed did not significantly influence investment frequency. However, the study found that digital payment preference and trust significantly affect investment frequency, emphasizing the importance of user attitudes and perceived utility of digital payment systems in driving investment activity.

5.3 Independent Samples t-Test:

To analyse the frequency of investments among groups with differing preferences for digital payments.

The study found a significant difference in investment frequency between investors who prefer digital and conventional payments. Those who prefer digital payments have a higher frequency of investment, indicating a significant impact of user attitudes on investment behaviour. The findings suggest the need for fostering digital payment adoption and improving user experiences to stimulate investment activity.

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5.4 Factor Analysis:

To analyse the frequency of investments among groups with differing preferences for digital payments.

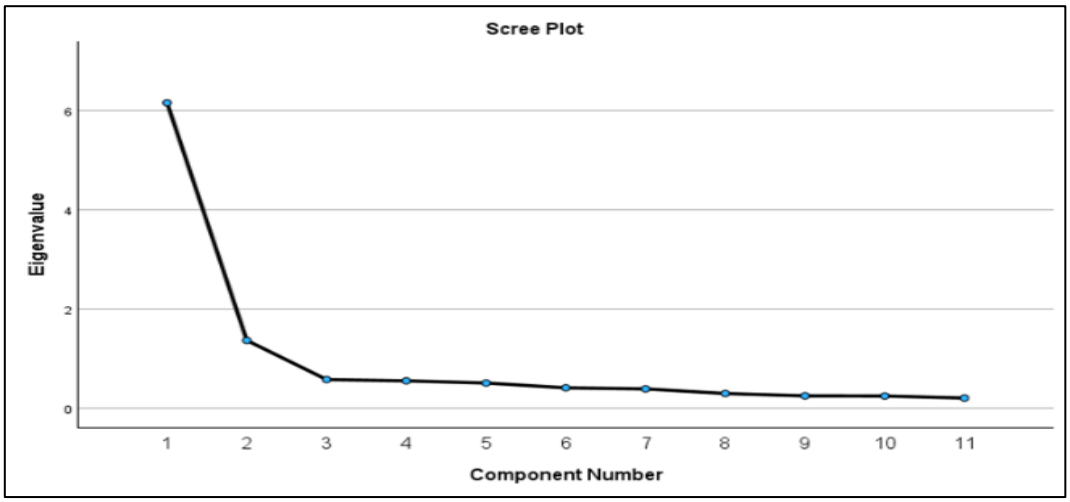

Figure 3

Component 1: The study reveals that retail investors are more likely to engage in frequent investment transactions when digital payment systems offer enhanced convenience and expedited transaction execution.

Component 2: It focuses on trust and preference in digital payment systems, emphasizing the crucial role of these factors in influencing retail investor behaviour.

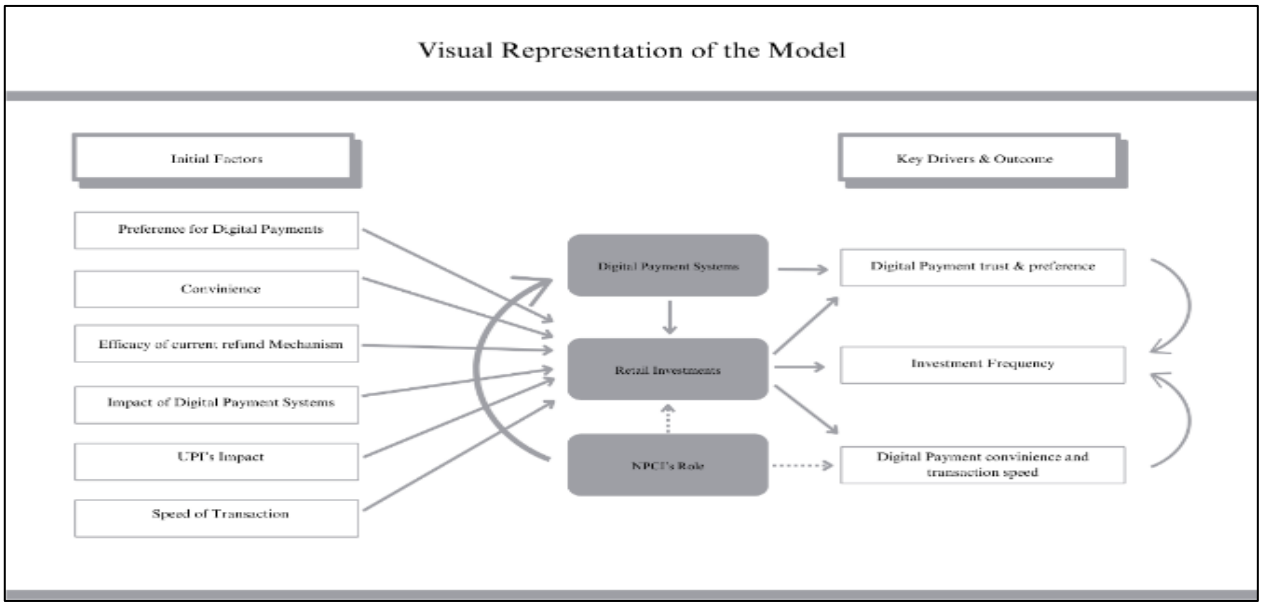

Figure 4

5.5 Data Visualization:

A histogram of investment frequency visually shows the distribution of the dependent variable, indicating a normal distribution. This indicates that most investors engage in moderate levels of investment, with fewer in extremely high or low levels. This representation helps explain the overall pattern of investment activity within the sample.

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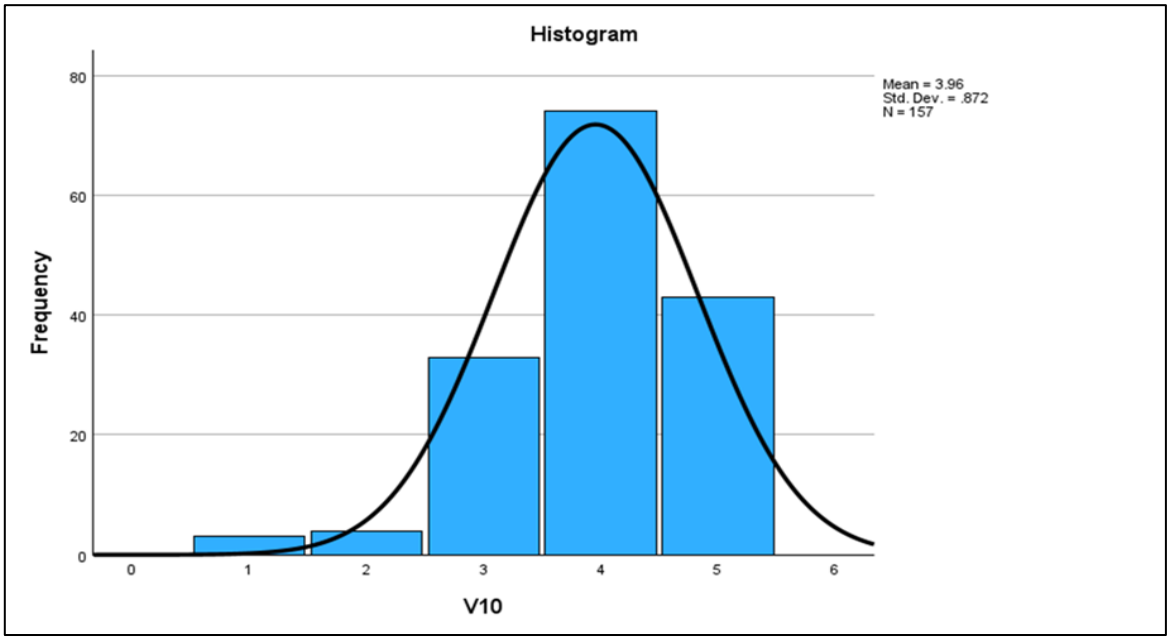

Figure 5

Based on the findings, we reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1).

This result is mostly founded on the statistical significance identified for the variable "Impact of Digital Payment Systems (V15)" concerning "Investment Frequency (V10)." V15 possesses a p-value of <.001, signifying a highly robust statistically significant correlation. The perceived effect of digital payment systems affects the frequency of individual investments.

6. Conclusion:

This study finds that digital payment methods significantly impact retail investing behavior in India. The perceived influence of these systems is a crucial factor in the investment frequency of individual investors. The data reveal that an investor's view of the beneficial effects of digital payment systems is the primary factor influencing their investing activity. The information technology has penetrated most of our country and it is important for us to take benefit of this fact and implement the same for encouraging financial inclusion, The growth of nation depends on the individual growth and to facilitate individual growth investment is essential and with the advancements in the fintech world the investment markets are made more accessible for the individuals.

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