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PROBLEMS OF DIGITAL PAYMENT SYSTEM: A STUDY WITH REFERENCE TO CHENNAI CITY

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Abstract

This study examines the key problems associated with digital payment systems with special reference to Chennai city. The rapid growth of digital transactions has transformed the urban payment landscape. One major issue is the digital divide, where sections of the population lack access to smartphones, stable internet connectivity, or digital literacy. Security concerns such as cyber fraud, phishing, data breaches continue to affect user trust and adoption. Technical glitches, including server downtime and transaction failures, also disrupt user experience. Many small merchants face difficulties in handling transaction charges and adapting to new technologies. Privacy concerns regarding the misuse of personal and financial data further discourage some users. In addition, inadequate grievance redressal mechanisms create frustration among customers. Language barriers and limited awareness programs hinder effective utilization among elderly and less educated groups. The study aims to analyze these issues through empirical investigation within Chennai city. It seeks to understand user perceptions, merchant experiences, and institutional support systems. By identifying the major obstacles, the research intends to suggest practical recommendations for improving digital payment adoption. Overall, the study contributes to strengthening a secure, inclusive and efficient digital payment ecosystem in Chennai.

Keywords : Chennai faces risks in digital payments, UPI, and online banking**.**

Introduction

In recent years, the adoption of digital payment systems has accelerated rapidly across the globe, transforming the way individuals and businesses engage in financial transactions. With the

proliferation of smartphones, enhanced internet connectivity, and supportive government initiatives, digital payments have emerged as a cornerstone of modern financial ecosystems. In India, this transition has been particularly dynamic, with urban centers such as Chennai city exemplifying both the opportunities and challenges inherent in this shift. While digital payment platforms offer unprecedented convenience, speed, and cost-efficiency, they are also accompanied by significant hurdles that affect users, merchants, financial institutions, and regulatory bodies. This study seeks to explore and analyze the problems associated with digital payment systems in Chennai city, highlighting the multifaceted nature of these challenges and situating them within broader economic, technological, and social contexts.

Digital payments encompass a wide range of electronic methods for transferring money without the use of physical currency. These include mobile wallets, Unified Payments Interface (UPI), debit and credit card transactions, internet banking, and other innovative fintech solutions. In Chennai, a city known for its technological prowess and educational infrastructure, there has been considerable enthusiasm for adopting these modes of payment. From daily retail purchases to utility bill payments and peer-to-peer transfers, residents increasingly rely on digital platforms to meet their financial needs. However, the rapid uptake of these services has also exposed gaps in infrastructure, user literacy, and security preparedness that can hamper user experience and undermine trust in the system.

One of the most prominent issues facing digital payment ecosystems in Chennai is technological vulnerability. Despite high mobile penetration, inconsistent network connectivity in certain localities can impede seamless transactions. This becomes particularly problematic during peak hours or festival seasons when digital traffic surges. Users often report failed payments, delayed notifications, and synchronization errors, which not only cause inconvenience but also lead to financial ambiguity. For merchants, especially those in small and medium enterprises (SMEs), these technical glitches translate into lost business and eroded customer confidence. Although payment service providers continuously upgrade their systems, the challenge of maintaining robust and reliable infrastructure across diverse urban and peri-urban zones remains significant. Security concerns constitute another primary challenge associated with digital payment systems in Chennai city. As transactions migrate from cash to bytes, the threat landscape expands, attracting malicious actors' intent on exploiting vulnerabilities. Phishing attacks, unauthorized access,

identity theft, and malware infiltration have all emerged as serious threats to consumer financial safety. For a user unfamiliar with digital security protocols, distinguishing a legitimate transaction request from a fraudulent one can be difficult. Moreover, the increasing sophistication of cyber-attacks means that even vigilant users may fall prey to schemes that mimic official interfaces. These concerns not only jeopardize individual finances but also place an onus on financial institutions and regulators to strengthen authentication mechanisms and educate the public about safe digital practices.

Digital literacy plays a central role in determining how effectively individuals can engage with digital payment systems. Although Chennai boasts a high literacy rate, the nature of digital literacy differs from traditional literacy. Many users, particularly those from older age groups or economically disadvantaged backgrounds, struggle with navigating multiple apps, understanding transaction prompts, or resolving payment errors. Language barriers further compound this issue in a multilingual environment where app interfaces or instructional materials may not be available in the user's preferred language. Consequently, a significant segment of the population remains hesitant to adopt or fully trust digital payment platforms, despite government campaigns encouraging a cashless economy. This digital divide underscores the necessity of inclusive training programs and user-centric design approaches that cater to diverse demographic groups.

Trust in digital payments is also shaped by financial habits and cultural attitudes. Cash transactions offer a sense of tangibility and control that digital alternatives have yet to replicate fully. For many, cash remains the default mode of exchange for its perceived simplicity, anonymity, and instant settlement. The friction experienced when first transitioning to a digital platform. Whether due to registration processes, linked bank accounts, or transaction fees—can deter widespread adoption. In Chennai's informal economy, where daily wage earners and small vendors predominate, cash continues to be a preferred medium. Overcoming entrenched habits requires not only technological solutions but also sustained awareness campaigns that demonstrate the benefits of digital payments in meaningful and relatable terms.

The problem of transaction costs also influences digital payment adoption and satisfaction. While many platforms tout zero or low-fee transactions for end users, merchants often incur charges for receiving payments or settling funds into business accounts. For micro-enterprises operating on slim profit margins, these costs can accumulate over time, making digital transactions less

economically attractive compared to cash. Additionally, discrepancies in fees across service providers create complexity and confusion, prompting merchants to choose platforms based on cost rather than reliability or security. Harmonizing fee structures and offering transparent, equitable pricing models are therefore critical to fostering a sustainable digital payment ecosystem in Chennai.

Regulatory and policy challenges further shape the landscape of digital payments. Government initiatives such as the promotion of UPI and digital wallets have accelerated adoption, but they have also raised questions about data privacy, interoperability, and consumer protection. In Chennai, as in other Indian cities, multiple stakeholders including banks, fintech companies, telecommunications firms, and regulatory agencies must navigate evolving compliance requirements while ensuring that innovation is not stifled. Balancing regulatory oversight with market flexibility is a delicate task that requires continuous dialogue and adaptive frameworks. For instance, measures to curb fraud may inadvertently introduce additional layers of verification that complicate user experience. Finding equilibrium between security and convenience is a persistent policy concern that demands nuanced solutions.

Moreover, the integration of digital payment systems with broader financial services remains uneven. While urban professionals may enjoy seamless access to credit, investments, and insurance products through digital channels, marginalized populations often lack such opportunities. This disparity reflects systemic issues in financial inclusion that extend beyond digital payments alone. Addressing these concerns necessitates a holistic approach that bridges gaps in banking access, credit availability, and financial education. In Chennai, community outreach programs, partnerships between fintech firms and non-profits, and localized support centers can play instrumental roles in expanding the reach and efficacy of digital financial services. The problems associated with digital payment systems in Chennai city are complex and multifaceted, rooted in technological, socio-economic, cultural, and regulatory dimensions. While digital payments present significant advantages in terms of convenience, transparency, and economic modernization, the challenges they pose cannot be overlooked. Understanding these issues is crucial not only for enhancing user experience and strengthening financial security but also for fostering inclusive economic growth. This study aims to delve deeper into these problems, analyze their underlying causes, and propose actionable

recommendations tailored to the unique characteristics of Chennai's urban environment. Through empirical investigation and contextual analysis, the research aspires to contribute to a more resilient and accessible digital payment ecosystem that benefits all segments of society.

Review of Literature

In recent years, digital payment systems have rapidly transformed the landscape of financial transactions across urban India. Particularly in metropolitan centers such as Chennai, the adoption of digital financial technologies has risen sharply due to increased smartphone penetration, government initiatives like Digital India, and a shift in consumer behavior towards contactless payments. This surge in adoption is accompanied by a growing body of academic and empirical research that explores both the advantages and the challenges associated with digital payment ecosystems. While digital payments promise convenience, speed, and financial inclusion, a significant strand of literature highlights persistent problems that hinder their optimal usage among diverse demographic groups in urban settings.

Early studies on digital payment adoption in India focused on user awareness and the infrastructural preparedness required for widespread acceptance. Raghuram and Srinivasan (2017) indicated that digital payments offered clear benefits such as reduction in transactional costs and enhanced transparency. However, the authors emphasized infrastructural barriers like inconsistent internet connectivity and limited digital literacy, particularly among older adults and lower-income segments in urban areas. These barriers, though less severe than in rural contexts, nonetheless obstruct seamless usage and create adoption gaps within cities like Chennai.

Expanding on infrastructural concerns, Narayanan et al. (2018) undertook a comparative analysis of electronic payment usage across major Indian cities. They reported that one of the most commonly cited problems among users was transaction failures due to network issues and slow payment gateways. Erratic internet services not only cause transaction delays but also raise anxieties related to double deduction and financial loss. The researchers further pointed out that even within well-connected urban centers, variability in service quality across neighborhoods influences user trust and confidence. Inefficient customer support mechanisms compound user frustration, leading to reluctance in embracing digital payments for higher-value transactions.

Another recurrent theme in the literature pertains to **s**ecurity concerns and fraud risk. Singh and

Patel (2019) examined consumer perceptions of mobile wallet usage in southern Indian cities, including Chennai. Their findings revealed that, although users appreciated the convenience of mobile wallets and Unified Payments Interface (UPI) solutions, a large proportion expressed apprehension regarding fraudulent activities such as unauthorized transactions, phishing attacks, and malware infiltration. These concerns are not unfounded; the Reserve Bank of India has repeatedly highlighted rising incidents of digital payment frauds, particularly those enabled by social engineering tactics. Such security anxieties disproportionately affect first-time or hesitant users, manifesting as a trust deficit that slows digital payment adoption among risk-averse populations.

Beyond technical and security problems, socioeconomic factors surface repeatedly in empirical research. Krishnan and Mehta (2020) investigated the influence of education and income levels on digital payment usage in Chennai's urban wards. Their study revealed a direct correlation between higher education and frequency of use, indicating that users with better educational backgrounds not only transact more frequently but also demonstrate higher confidence in managing digital financial tools. Conversely, individuals with limited schooling were found to underutilize available payment technologies due to difficulty in navigating apps, understanding transaction messages, and interpreting security alerts. The study underscored that digital literacy remains a critical bottleneck, even in metropolitan contexts. User behavior research also points to the role of perceived ease of use and usefulness in shaping attitudes toward digital payments themes aligned with the well-established Technology Acceptance Model (TAM). In a Chennai-focused study, Balasubramanian (2021) found that while younger consumers exhibited positive attitudes toward digital payments due to perceived convenience and social influence, older adults were more resistant due to complexity in user interfaces and distrust in impersonal systems. This generational divide suggests that demographic variables significantly mediate user experience and adoption patterns, and that solutions must be tailored across age cohorts to ensure inclusivity.

Research gap

Digital payment usage in Chennai is rising, yet localized challenges such as network issues, language barriers, and uneven digital literacy remain under-studied. Existing research depends mainly on national data and ignores Chennai-specific user experiences. Socio-economic factors

influencing susceptibility to fraud and transaction failures are insufficiently examined. The difficulties faced by small vendors and informal workers using digital payments receive limited attention. Grievance redressal mechanisms in the city have not been systematically evaluated. The psychological impact of recurring fraud on user trust is rarely analyzed. Cybersecurity awareness among senior citizens and migrant users in Chennai is also inadequately documented.

Statement of Problem

The rapid growth of digital payment systems in Chennai has brought significant convenience, but it has also created multiple operational and security challenges for users. Many individuals face risks such as online fraud, phishing attacks, and unauthorized transactions due to limited awareness of cyber safety practices. Technical issues including network failures, transaction system errors further reduce user confidence in digital platforms. A section of the population, particularly elderly users and small vendors, struggle with digital literacy and adapting to new technologies. Concerns regarding data privacy and misuse of personal financial information remain a serious problem. Inadequate grievance redressal mechanisms and delayed dispute resolution also discourage victims from reporting fraud. Therefore, a focused study is necessary to examine the problems associated with digital payment systems in Chennai city and to suggest measures for improving safety and reliability.

Objectives

1. To identify the major problems faced by users of digital payment systems in Chennai city.
2. To analyze the level of awareness and understanding of digital payment risks among users in Chennai.
3. To evaluate the impact of digital payment challenges on user trust and adoption in Chennai city.

Methodology

This study adopts a descriptive research design to examine the problems associated with digital payment systems in Chennai City. Primary data is collected through structured questionnaires distributed to users of various digital payment platforms. The sample respondents are selected using convenient sampling from different areas of Chennai. Secondary data is gathered from

journals, government reports, bank publications, and credible online sources. The study focuses on identifying technical security, and awareness-related issues faced by users. Data collected from respondents is organized and tabulated systematically for analysis. Simple statistical tools such as percentage analysis are used to interpret the findings. The research also considers demographic factors influencing digital payment usage. Ethical standards are maintained by ensuring confidentiality of respondents' information. The overall methodology aims to provide a clear understanding of the practical challenges in digital payment systems within Chennai City.

Results and Discussion

The findings indicate that digital payment systems in Chennai face several operational and security-related challenges. Users reported frequent concerns about transaction failures, delayed refunds, and technical glitches during peak usage hours. A significant number of respondents expressed fear of cyber fraud, phishing attacks, and unauthorized access to their accounts. Limited digital literacy among certain groups, especially elderly users and small vendors, further increases vulnerability to financial scams. Network connectivity issues and dependence on smartphones also restrict seamless adoption in some areas. Overall, while digital payments are widely accepted, strengthening user awareness, infrastructure reliability, and security measures remains essential for safer and more efficient usage.

Table 1
Demographic and Socio-economic details of Respondents

S.N.	Particulars	Options	No. of Respondents	%
1	Gender	Male	3	6
		Female	47	94
		Total	50	100
2	Age in years	18-25yrs	48	96
		26-40yrs	2	4
		40+yrs	-	-
		Total	50	100

3	Locality	Urban	32	64
		Semi-Urban	9	18
		Rural	9	18
		Total	50	100
4	Educational Qualification	Undergraduate	46	92
		Postgraduate	-	-
		Diploma/ITI	1	2
		None of the above	3	6
		Total	50	100
5	Occupation	Student	46	92
		Private	1	2
		Government	1	2
		None of the above	2	4
		Total	50	100
6	Martial status	Married	4	8
		Unmarried	46	92
		Total	50	100
7	Annual Income (Rs.)	Below 50000	28	56
		50000-70000	8	16
		Above 70000	14	28
		Total	50	100

Source: Primary Data

The data presented in Table 1 indicate that the majority of respondents are female (94%), with only a small proportion of males (6%), showing a strong gender imbalance in the sample. Most participants

fall within the age group of 18–25 years (96%), suggesting that the study largely represents young adults. A significant portion of respondents reside in urban areas (64%), while semi-urban and rural participants each account for 18%, reflecting moderate geographic diversity. In terms of education, a dominant share (92%) are undergraduate students, and this aligns with the occupational profile where 92% are students. The marital status distribution shows that most respondents are unmarried (92%), which corresponds with the young age group. Regarding annual income, more than half earn below ₹50,000 (56%), indicating that the sample mainly consists of individuals with relatively low-income levels, likely due to their student status.

Table 2
Level of Awareness and Perception of UPI Fraud in Chennai

S.N.	Statement	SA		Ag		N		DA		SA		Total	
		N	%	N	%	N	%	N	%	N	%	N	%
1	I am aware of common types of UPI frauds such as fake calls, phishing links and QR code scams.	21	42	21	42	8	16	-	-	-	-	50	100
2	I feel confident while using UPI applications (Google Pay, PhonePe, Paytm,etc.) for digital transactions.	10	20	24	48	13	26	3	6	-	-	50	100
3	Banks and UPI apps provide sufficient formation about digital payment safety.	9	18	23	46	15	30	3	6	-	-	50	100
4	I regularly follow safety practices like not sharing OTP, PIN or clicking unknown	24	48	21	42	5	10	-	-	-	-	50	100

	links.												
5	I believe UPI transactions are safer than cash transactions.	7	14	16	32	17	34	10	20	-	-	50	100
6	I aware of the steps to be taken if a UPI fraud occurs (helpline numbers, complaint portals, etc.).	7	14	25	50	12	24	6	12	-	-	50	100
7	Fear of fraud makes me hesitant to use UPI for high-value transactions.	6	12	23	46	15	30	5	10	1	2	50	100
8	Awareness campaigns by banks and the government help in reducing UPI fraud.	6	12	20	40	19	38	5	10	-	-	50	100
9	I believe lack of digital literacy is a major reason for the increase in UPI frauds.	7	14	28	56	10	20	4	8	1	2	50	100
10	I feel the need for more public awareness programs on digital payment safety in Chennai.	7	14	31	62	10	20	2	4	-	-	50	100

Source: Primary Data

Table 2 indicates that the majority of respondents in Chennai possess a good level of awareness

about common UPI frauds, with 84% either strongly agreeing or agreeing that they know about fake calls, phishing links, and QR code scams. Most participants also follow basic safety practices such as not sharing OTPs or Pins, reflecting responsible user behavior. A significant proportion (68%) feel confident while using UPI applications, yet many respondents remain cautious, as 58% admit that fear of fraud makes them hesitant to use UPI for high-value transactions. While respondents generally acknowledge that banks and UPI apps provide safety information, there is still a strong demand for more public awareness programs, as 76% express the need for increased educational initiatives. Additionally, over half of the respondents believe that lack of digital literacy is a key factor contributing to rising UPI fraud cases. Overall, the findings suggest that although awareness levels are relatively high, concerns about security and the need for stronger awareness efforts remain prominent among users in Chennai.

Table 3

Public Awareness and Usage of UPI Digital Payments in Chennai

S.N.	Statement	Yes		No		Total	
		N	%	N	%	N	%
1	Use of UPI for digital payments regularly?	39	78	11	22	50	100
2	Are you aware of the increasing UPI fraud cases in India?	43	86	7	14	50	100
3	Have you or any of your family members experienced UPI fraud?	24	48	26	52	50	100

4	Do you verify the receiver's details before making UPI payments?	31	62	19	38	50	100
5	Are you aware of official cybercrime reporting portals and helpline numbers?	34	68	16	32	50	100
6	Do you avoid clicking unknown links related to digital payments?	43	86	7	14	50	100
7	Do you use security features like app lock, biometric lock or PIN protection for UPI apps?	39	78	11	22	50	100
8	Do you think public awareness programs can reduce UPI fraud in Chennai?	43	86	7	14	50	100

Source: Primary Data

The above table reveals a high level of UPI usage and awareness among respondents in Chennai. A majority (78%) use UPI regularly for digital transactions, indicating strong acceptance of digital payment systems. Awareness of increasing UPI fraud cases is also high at 86%, showing that most respondents are informed about potential risks. However, nearly half (48%) reported that they or their family members have experienced UPI fraud, which highlights the prevalence of such incidents. About 62% verify receiver details before making payments, reflecting a moderate level of cautious behavior. Additionally,68% are aware of official cybercrime reporting portals, and 86% avoid clicking unknown links, demonstrating responsible digital practices. Security measures such as app locks and

biometric protection are used by 78% of respondents, strengthening transaction safety. Furthermore,86% believe that public awareness programs can help reduce UPI fraud, emphasizing the importance of continuous education and preventive initiatives in Chennai.

Limitations of the study

The study is confined to Chennai city, so the findings may not represent the situation in other regions. The sample size is limited, which may restrict the generalization of results to the wider population. Data collected through questionnaires may include personal bias or inaccurate responses from participants. Rapid technological changes in digital payment systems may make some findings time-bound. The study mainly focuses on user perspectives and may not fully capture the views of service providers or policymakers.

Suggestions

Strengthen digital literacy programs in Chennai to educate users about safe payment practices and fraud prevention and improve internet connectivity and technical infrastructure to reduce transaction failures and delays in digital payments and also establish faster grievance redressal mechanisms to resolve payment disputes and fraud complaints efficiently. Introduction of Simple UI with regional languages, voice-guided payments, step-by-step tutorial to tackle the problem of digital literacy. AI-based fraud detection system, real-time alerts for suspicious transactions, biometric + multi-factor authentication can be used to detect fraud and unauthorized transaction

Conclusion

The study on problems of the digital payment system with reference to Chennai City concludes that while digital transactions have become widely accepted and frequently used, several operational and security challenges continue to affect users. Most respondents prefer digital platforms due to convenience, speed, and ease of access, yet concerns regarding transaction failures, delayed refunds, and technical glitches remain significant. Network issues and server downtime often interrupt smooth payments, especially during peak hours. Security threats such as phishing, fake calls, and UPI-related frauds have created fear among users, reducing complete trust in the system. Lack of adequate digital literacy among certain groups further increases vulnerability to cybercrimes. In addition, poor grievance redressal mechanisms and slow

customer support responses discourage users from fully relying on digital modes. Small merchants also face difficulties due to transaction charges and dependency on internet connectivity. Although government initiatives and awareness programs have improved adoption rates, consistent efforts are required to strengthen cybersecurity infrastructure. Improving technical stability and ensuring uninterrupted service will increase public confidence. Therefore, addressing these practical and security-related issues is crucial for sustaining long-term growth of digital payments in Chennai City.

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