

“A Study on Factors influencing on Customers to adopt E-Payment Services Evidence from Bellary District”

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Abstract

The rapid expansion of electronic payment (e-payment) systems in India, driven by demonetization, government digital initiatives, and increased internet penetration, has significantly transformed consumer payment behavior. However, adoption remains uneven across regions, particularly in semi-urban districts such as Bellary in Karnataka. This study examines the key factors influencing customers' perception toward adopting e-payment services in Bellary District, focusing on perceived usefulness, ease of use, security, trust, and risk. Primary data were collected through a structured questionnaire from 150 valid respondents using a convenience sampling technique during April–May 2025. Reliability and validity of the instrument were established using Cronbach's alpha and KMO measures. Correlation and multiple regression analyses were employed to test the proposed hypotheses. The results indicate that perceived usefulness, ease of use, and security have a significant positive influence on consumers' perception toward e-payment adoption, with usefulness emerging as the strongest predictor. Conversely, trust and perceived risk were found to have no significant impact. The regression model explains 61.5% of the variance in consumer perception. The findings highlight the importance of enhancing functional benefits, usability, and security features of e-payment platforms to promote wider adoption in semi-urban regions. The study offers practical insights for policymakers, financial institutions, and fintech service providers aiming to strengthen digital financial inclusion. Future research is recommended with larger samples and additional behavioral variables to improve generalizability.

Keywords: E-payment, Consumer Perception, Usefulness, Ease of Use, Security, Bellary District, Digital Payments.

1. INTRODUCTION

Electronic payment (e-payment) has quickly gained popularity as a method for online transactions. Following demonetization, numerous e-payment platforms experienced a surge in user traffic. The Indian government's decision to demonetize significantly accelerated the shift towards digital payment solutions for consumers who were previously reliant on cash, leading them to download payment applications and top up their digital wallets. After demonetization, the country faced an unexpected shortage of cash.

Consumers, startled by this situation, quickly sought alternative payment methods. With no choice but to adopt cashless options, various e-payment service providers noted a sharp increase in transaction volumes. Millions of consumers, who initially hesitated and doubted the reliability of digital transactions, are rapidly embracing digital payment methods.

In a remarkably brief period, electronic payment systems attracted a significant number of consumers and became a commonly utilized method for various payments. The rapid increase in internet users in India is also driving this trend. One of the key reasons for the rise in popularity of this payment method is the expanding number of internet users in India. As of March 2016, there were 342.65 million internet users in the country. This figure is expected to surpass 500 million by the end of the year. Inexpensive data services introduced by Reliance JIO further contributed to this trend. The increasing number of internet users encouraged telecommunications companies and banks to make effective arrangements and motivated them to launch electronic payment platforms. Numerous e-payment platforms have appeared to accommodate the growing demand. Baddeley maintained that the development of efficient e-payment systems is a prerequisite for the expansion of e-commerce. Millions of individuals worldwide have their lives completely transformed by the adoption of these new technology. The primary drivers of information technology adoption are factors like utility and convenience of use. While Teoh, Chong, Lin, and Chua defined e-payment as the transfer of an electronic value of payment from a payer to payee through an electronic mechanism that enables customers to remotely access and manage their bank accounts and transactions, Lim, Lee, and Kurnia defined e-payment as a payment mechanism that expedites e-commerce transactions between organizations or individuals in a secure environment. E-payment methods range from straightforward transactions using magnetic-stripe cards to more intricate ones that allow online buyers to debit their current bank accounts and sellers to credit theirs. Electronic currency, electronic checks, credit cards, stored value cards, mart cards, and micropayment systems like Pay Pal are all considered forms of e-payment.

The drawbacks of conventional payment methods are another element that supports e-payment systems. The primary drawbacks of traditional payment systems are perceived danger, high transaction costs, usability issues, security flaws, and lack of trust. The primary advantages of electronic payments for consumers are their ease of use and minimal transaction costs. The two main issues with e-payments that are highlighted by many academics are security and trust. According to Haqueetal, the main challenges facing the banking industry's growth are privacy and security of consumer data and transactions. The absence of physical interaction, which raises the possibility of losing personal data and credit card information hacking, is another significant factor that erodes customer trust in electronic payments.

Given the explanation above, the study's primary goal was to examine the crucial elements influencing how customers evaluate electronic payment systems. It was anticipated that the study's findings would shed important light on Indian customers' adoption patterns of e-payments. Additional research would make it possible to identify a number of crucial elements for developing rules that support electronic

payments in India. It is suggested that the approach and results would support further studies on the adoption patterns of e-payments in countries like India. This is how the rest of the article is organized. The following part discusses the conceptual framework and testable hypothesis after providing a quick overview of previous research material. The study's methodology is explained next. Prior to the final debates and consequences, the obtained data was evaluated and interpreted. The findings and their implications for further study and application are finally covered.

2. REVIEW OF LITERATURE

Chitra., (2023) In her article determined the customer preference for digital banking in Bhagalpur. Descriptive research was done on data that demonstrates customer preference for online banking. The goal of the study is to understand the impact of digital banking. Both a qualitative and a quantitative methodology are used in the study to determine the impact of customer preference for digital banking. Our data collection tool was a questionnaire. According to the research, the majority of respondents cited payments and fund transfers as their top reasons for utilizing digital banking services.

S. Kavitha and B. Mathivanan (2020) In their article highlighted the Customers leverage traditional banking to transact money in the past. The primary benefit of traditional banking is that customers can ask questions and get answers from bank employees right away. Following a significant boom in the banking sector, banks understood that consumers were increasingly accessing the Internet to access their bank accounts and conduct financial transactions. According to the bank, the online banking platform offers a low-cost conduit for both transactions and relationship-building.

(Ali, Ali, Ahmed,&Ali,2019)The study main aims to investigate the factors that may hinder or facilitate consumers' adoption of mobile commerce [mobile commerce is one of the parts of e-payment systems] activities in Oman. 530 data collected with adopted mobile commerce Omani citizens. This study used the UTAUT model theory. This study discussed 12 hypotheses and factors influenced, after the discussion, the result showed that price value has a main factor to affect the adoption of mobile commerce, so m-commerce should more attention to the monetary aspects.

(Mohamed Asmy, Anwar, Hassanudin, & MdFouad,2019) This research paper's main aims to test the factors that influence the adoption of Islamic mobile banking services in Malaysia. 250 users provided their own opinions about their intention to adopt that service. Various models and theories analysis by the researcher and five hypotheses were tested based on the final results, only two hypotheses were supported, risk and perceived usefulness. Risk is negatively affected, and perceived usefulness is positively affected to adopt mobile banking.

(Barkhordari, Nourollah, Mashayekhi, Mashayekhi, & Ahangar, 2017) This study's objective is to assess the factors related to trust and security affecting the adoption of Internet banking; In a study conducted in Iran, a total of 246 samples of data were collected. TAM theory issued by researchers to analyse the adoption of e-payment systems. Total 9 hypotheses were formulated, and after analysis found that security and trust directly impact the adoption and usage of e-payment systems, and found the factors of technical and transaction procedures, security statements, and access to security guidelines, influential on perceived security.

(Anna, Yen, & Siti, 2016) Stated that Convenience, Social influence, and trust are the main factors to adopt e-payment systems, the study on the e-BR1M [Bantuan Rakyat 1 Malaysia], is an e-government application. This is in focus of this research study was on developing trust in government constructs. The study was conducted on Malaysian 102 citizens, those who have income less than RM 4000. The research shows that a trust-justice model is important in understanding e-government services with users who are particularly sensitive to their interactions and exchanges with the government.

(Awani, 2015) Perceived usefulness and perceived ease of use these both main factors to indirectly influence the adoption of internet banking, the researcher used a TAM theory to identify the adoption of internet banking in Jordan and 298 collected data on accountants. [E-payment systems are also known as Online payment systems, and Online banking, also known as internet banking, web banking, or home banking, any customer enables e-payment systems by doing that work via a bank or any financial institutes.

(Chun, 2015) The research paper mainly focused on the user adoption behavior of smart card-based e-payment systems, this study was conducted in Hong Kong, and also included Octopus payment popularity in the city and this research adopted a TAM, and IDT models used to identify the adoption rate in the city. The study's major findings are that Octopus added the value service, reader/writer connect with point-of-sale, leisure facility providers, flexible payment, in schools for benefits for collecting fees and using school's canteen for the attendance, also for the rewards.

(Lin & Nguyen, 2011) This research paper's main aim was to analyse how related factors influence customers' e-payment adoption in Vietnam and Taiwan. In the study total of 692 samples were collected [323 for Taiwanese and 353 for Vietnamese]. The research added mainly four factors, Motivation [Perceived ease of use, Perceived Usefulness], Uncertainty [Perceived risk, Information on E-payment], Personal Innovativeness, and E-payment use, after analyzing the factors in both cities found that perceived ease of use and perceived usefulness both impacted the adoption of e-payment systems.

3. Statement of the Problem

Government programs like Digital India, the proliferation of smart phones and internet connectivity, and developments in digital technology have all contributed to the recent explosive growth in the use of electronic payment (e-payment) systems throughout India. However, there are notable regional differences in the use of e-payments, especially in semi-urban and rural districts like Bellary in Karnataka. While digital literacy and improved infrastructure in urban areas lead to higher adoption rates, regions like Bellary confront particular opportunities and difficulties that influence consumer behavior. Many Bellary consumers still favor conventional cash-based purchases even with the widespread use of e-payment platforms like UPI, mobile wallets, internet banking, and card-based transactions. This suggests a lack of knowledge about the main elements influencing or impeding the uptake of electronic payment systems in these areas. Socioeconomic circumstances, technological trust, awareness, perceived usability, government influence, digital infrastructure, and security concerns are a few examples of these variables.

To create policies that successfully advance digital financial inclusion, policymakers, service providers, and financial institutions need to have a solid grasp of these components. Therefore, research on the behavioral, technological, and socioeconomic elements influencing Bellary District customers' use of electronic payment methods is required.

4. Objectives of the Study

1. To examine the impact of perceived usefulness on consumers' perception towards adopting e-payment systems In Bellary District.

1. Usefulness:

Customers mostly benefited from e-payments due to their convenience and reduced transaction costs. Özkanetal. Insisted that e-payment usage reduces the need of paperwork and bills can be paid anytime and anywhere. Usefulness increases when the systems are widely available and additional benefits such as, localization or loyalties are offered. The only reason that deferred the slow diffusion of the e-payment is the lack of communication of benefits to the potential user's . Easy currency convertibility and peer to peer payment are some other benefits of e-payment . We follow the above results by considering that the adoption of e-payment increases when benefits increase in comparison to costs. Based on above studies, the following hypothesis was stated for this study:

H1: There is significant relationship between usefulness and consumers' perception towards e- payment

2. To analyze the relationship between perceived ease of use and consumers' perception towards e-payment systems In Bellary District.

2. Ease of use

One of the biggest obstacles that customers have while using electronic payments is their complexity. According to Zmijewska et al., customers are more inclined to adopt electronic payment methods when they believe they are simpler to use. The primary factors that contribute to ease of use and, in turn, affect how customers see electronic payments are content, design, and speed. Among the main characteristics that make e-payment systems easier to use are clear symbols and function keys, straightforward payment process steps, graphic presentation, and assistance services. Chouetal .said that usefulness increases when users spend, store, and transport a currency easily. We followed the above studies and considered that the more intuitive and easier e-payment services, the more positive attitude of customers towards e-payment. Based on the above studies, the following hypothesis was stated:

H2: There is significant relationship between ease of use and perception of consumers towards e-payment.

3. To examine the impact of perceived security on consumers' perception towards e-payment systems In Bellary District.

3. Security

Security is a collection of policies and initiatives designed to shield consumer information and transaction details from both internal and external fraud. Security is the most significant factor influencing electronic payments, according to Haque et al. One of the main factors impeding customer confidence in electronic payments and influencing the development of these systems is a lack of security. The main security concerns are safeguarding consumer identity, spending habits, revenue streams, system security, and transaction-related data. Furthermore, since virtual money carries a bigger risk than traditional money, it need additional attention. In order to ascertain whether security has a significant role in influencing how customers view electronic payments, the following hypothesis can be stated:

H3: There is significant relationship between security and perception of consumers towards e-payment.

4. To investigate the influence of trust on consumers' perception towards e-payment systems In Bellary District.

4. Trust

Consumers who have faith that their money and personal information won't be misused are said to be trustworthy. Customers' propensity to engage in e-commerce transactions is now significantly influenced by trust. Customers quit utilizing the dangerous e-payment systems, according to Abrazhevich's research. Improving e-payment protocols for online transactions can increase customer trust. Insisted that trust is more meaningful than security. To achieve wide spread usage of e-payment, trustworthy systems must be established. To confirm that trust is a crucial determinant of consumers' perception about e-payment, the following hypothesis can be stated:

H4: There is significant relationship between trust and perception of consumers towards e-payment.

5. To analyze the effect of perceived risk on consumers' perception towards e-payment systems In Bellary District.

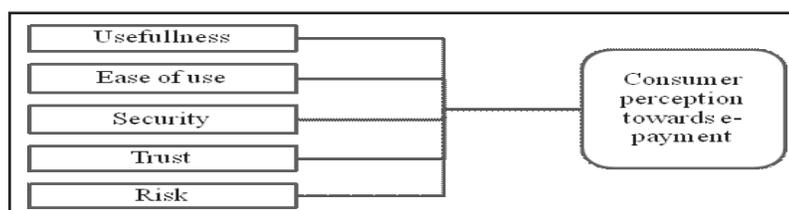
5. Risk

When buyers are uncertain about the ramifications of their choices, risk occurs. When consumers divulge personal information, there is an economic and privacy risk. One of the main challenges in implementing an electronic payment system is risk. When consumers use electronic payments, they are shackled by the risk of fraud or theft, hacking, and password theft. According to Haqueetal, risk can be decreased by implementing suitable measures, enhancing technology, and making ID and passwords more sensitive. According to Lichtenstein and Williamson, threats can be controlled by adopting a personal protection approach that involves being watchful and assuming some responsibility for information security. Considering the findings mentioned above, the following hypothesis was stated:

H5: There is significant relationship between risk and perception of consumers' towards e-payment.

The research frame work used in the study is shown in fig.1.The five independent variables are posited to have significant impact on dependent variables. The next section describes the research methodology adopted in the study.

Fig.1.ConceptualFramework



I. RESEARCH METHODOLOGY

A. Sampling Method and Respondents' Demographic Information

The convenience sample technique was used to recruit 200 respondents for the investigation. The survey was completed by 170 people. In April and May of 2025, the answers were collected. For the final analysis, 150 replies were deemed full and valid after 20 invalid responses were removed to guarantee accurate results. Version 18 of the Statistical Package for Social Sciences (SPSS) was used to analyze the data. The respondents' demographic profile is displayed in Table I. It suggests that there is nearly equal representation of each gender. The majority of responders are between the ages of 19 and 30. Thirty percent of the responders have post-graduation qualifications, while nearly half are undergraduates.

TABLE I. DEMOGRAPHIC PROFILE OF RESPONDENTS

	Descriptor	Distribution	Percentile
Age	Less than 18 years	18	12
	19 to 24 years	35	23.33
	25 to 30 years	32	21.33
	31 to 36 years	28	18.67
	37 to 42 years	22	14.67
	43 years or older	15	10
	Gender	Male	78
Female		72	48
Education	High School	22	14.67
	Under graduate	69	46
	Post graduate	45	30
	Doctorate, Professional	14	9.33
Occupation	Student	42	28
	Employed	92	61.33
	Unemployed	16	10.67

B. Survey Instrument

To answer the research questions, primary data was gathered via a self-administered questionnaire. A questionnaire based on a research model was developed and used in the study. The questionnaire was divided into two pieces. The first section's primary focus was on the respondents' demographic data, such as age, gender, occupation, and educational attainment. The study's main constructs—usefulness,

convenience of use, security, trust, risk, and consumers' opinions of electronic payments—were measured in the second half using 18 five-point Likert Scale-style questions, ranging from "Strongly Disagree" (1) to "Strongly agree" (5). The following factors were taken from different research and adjusted: consumers' opinions of e-payments, simplicity of use, security, trust, and usefulness. Table II shows the average and standard deviation scores for each measurement item under various constructions. Most respondents concurred that the main justifications for using electronic payments are their usefulness, which is followed by ease of use, security, trust, and risk. This suggests that, when considering all independent variables, customer perception of e-payments is high. Standard deviations for the majority of statements are less than 1.00, indicating that respondents' answers are generally consistent.

C. Reliability and Validity Analysis

The questionnaire was piloted with 20 respondents to guarantee its validity. Some questions were removed, and others had their phrasing altered. Using the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy, the construct validity of the questionnaire was examined. Table III's results reveal that all of the variables' sample adequacy is greater than 0.60, which qualifies them for component analysis. In addition, reliability was assessed by using the most common test of measuring the internal consistency of a scale i.e. Cronbach α . A value of 0.70 or greater is considered to be an indicator of high scale reliability.

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II. DATA ANALYSIS AND INTERPRETATION

Table II shows Pearson correlation coefficient results between all independent variables and dependent variable. Table IV shows moderate correlation between the independent variables (0.118to0.578). Further, all

TABLE II.

MEASUREMENT ITEMS SHOWING MEAN AND STANDARD DEVIATION SCORE

Construct	Items	Mean	S.D.
Usefulness	Electronic payment system is a useful mode of payment.	4.33	0.890
	Electronic payment system saves my time and cost.	4.45	0.890
	Speed of electronic payment system is faster than traditional payment system.	4.43	0.932
Security	I am concerned about my security when using an electronic payment system.	3.76	1.125
	I will stop using electronic payment system if I come to know about any breach in security.	3.79	1.082
	Matters of security have significant influence on me while using an electronic payment system	4.11	0.879
Trust	I trust the ability of an electronic payment system to protect my privacy.	3.83	0.906
	I trust that an electronic payment system that It will not lead to transaction fraud	3.60	1.053
Ease of Use	Electronic payment system is easy to understand.	3.79	1.119
	I prefer using electronic payment system because it is easier to use.	4.05	0.884
	The electronic payment system is easy to navigate and is user friendly.	3.88	0.900
Risk	Risk associated with the electronic payment is higher than traditional payment system.	3.68	1.164
	Others can know/hack/steal information concerning my electronic payment transactions.	3.52	0.950
	The risk of fraud/theft, hacking, password stealing is high in electronic payment.	3.79	0.949
Consumers' Perception	An electronic payment system is better than traditional payment system.	4.20	0.805
Towards e-payment	Electronic payments system is much more efficient than traditional payment system	4.08	0.955
	Using electronic payment services is interesting	4.07	0.827
	Given the opportunity, I will use electronic payment in the near future	4.19	0.881

TABLE III.**VARIABILITY AND RELIABILITY RATES FOR DEPENDENT AND INDEPENDENT VARIABLES**

Measure	Ite ms	Factor Loadings	KMO	Eigen Value	Variance Explained (%)	Cronbac h's (α)
<i>In dependent Variables</i>						
Usefulness	3	0.805-0.837	0.832	6.049	43.204	0.898
Ease of use	3	0.769-0.796		1.813	12.951	0.844
Risk	3	0.706-0.860		1.244	8.886	0.759
Security	3	0.697-0.723		0.915	6.535	0.710
Trust	2	0.700-0.764		0.840	5.999	0.782
<i>Dependent Variables</i>						
Consumers' Perception	4	0.782-0.903	0.810	2.973	74.324	0.882

TABLE IV
CORRELATION BETWEEN VARIABLES

	Perception towards e-payment	Useful	Risk	Security	Trust
Perception towards e-payment	1				
Useful	0.736**	1			
Ease of use	0.506**	0.457**	1		
Risk	0.309**	0.285*	0.118	1	
Security	0.603**	0.594**	0.409**	0.272	1
Trust	0.529**	0.578**	0.499**	0.249	0.559*

Five in dependent variables are positively correlated with dependent variable at 0.01 significance level. With the highest coefficient score well below 0.90, the problem of multi colinearity is deemed to be minimized. This shows high statistical significance among all independent variables.

Table V shows the multiple regression analysis, performed to explore the causal relationship between the variables. Similar to the results of correlation analysis, multi-collinearity problem seems to be reduced as the variation inflation factor (VIF) for all the independent variables are well below 10, indicating that the variables can be used for regression analysis.

TABLE V

MULTIPLE REGRESSION RESULTS BETWEEN INDEPENDENT VARIABLES AND CUSTOMERS PERCEPTION TOWARDS E-PAYMENT

Model	UN standardized		standardized		Collinearity	
	Co efficient		coefficients			
	β	SE	β	t		p
	<i>Tolerance VIF</i>					
Constant	0.184	0.399	0.462	0.646		
Useful	0.496	0.102	0.502	4.887	0.530	1.885
Ease of use	0.172	0.088	0.176	1.968	0.699	1.431
Risk	0.066	0.060	0.087	1.101	0.895	1.118
Security	0.199	0.100	0.198	1.994	0.565	1.769
Trust	0.016	0.084	0.019	0.189	0.544	1.840

Regression analysis was used to find out which independent variables affect dependent variable. The dependent variable in the study is consumers' perception towards e-payment and independent variables are usefulness, ease of use, trust, security, and risk. The value of r^2 is 61.5% of the variances, and significance values indicate that usefulness, ease of use, and security are significantly associated with consumers' perception towards e-payment. As such, H₁, H₂, and H₄ are accepted. However, risk and trust are not significantly associated with the consumer's perception towards e-payment. Therefore, H₃ and H₅ are not accepted.

5. DISCUSSION

The purpose of the study was to diagnose the factors influencing consumers' perception towards e-payment in India. Results reveal that e-payment is quite popular among Indian consumers and adoption rate is rising at a lightning speed. Reasons behind this exponential growth includes government initiatives towards digitalization, strong security measures taken by banks and various campaigns to encourage consumer towards digital ways to connect to the world. Usefulness, ease of use and security emerge as major

components that encourage consumers towards adoption of a faster and more efficient method of payments. The results seem to be consistent with correlation and regression analysis. It has been found out that trust and risk are not significantly associated with consumers' perception towards e- payment. Overall, with the highest mean, correlation and β values, usefulness was found to be the most important factor affecting consumers' perception towards e-payment. The findings substantiate some previous studies where consumers prefer these systems due to structured transaction process, and speedy nature helps in saving time and cost. Similarly, ease of use is also found to be significantly associated with consumers' perception towards e-payment. User-friendly interfaces, easy accessibility, short and easy steps to complete a transaction are some factors that highlight ease of use among consumers towards e-payment. The results are consistent with prior studies. Installation of internet kiosks and video presentations by some leading banks enhances user friendliness towards e-payment. Similar to usefulness and ease of use, security has been found to be associated with consumers' perception towards e-payment. High means cores, correlation, and regression analysis validates the findings. The results are consistent with previous studies. Risk adverse nature of Indian consumers makes it imperative to pay adequate attention towards security issues. Banking institutions must regularly check their firewall systems and update to the latest technology. Risk is one of the main factors found to be important from consumers' point of view. However, the current study proved no significant relationship between risk and consumers' perception towards e-payment. Risk generates the lowest mean among all factors. The findings are consistent with prior studies. To enhance security, merchants must use secure transaction technologies, clear navigation sites, and shopping carts . Similar to security, trust is found to be the least influencing factor. Results are in agreement with those of previous studies. Findings reveal that consumers trust the efficiency of e-payment providers that they will protect them from frauds. Due to various technological advancements, frauds are significantly reducing in the present scenario.

6. CONCLUSION

In this study, an attempt has been made to identify key factors influencing perception of Indian consumers towards e-payment. Factors identified from past literature were empirically tested in the study. Multiple regression results indicate that usefulness, ease of use, and security are significantly associated with consumers' perception towards e-payment. It has been found that growth in internet usage and e-commerce significantly influence e-payment. Interestingly, trust and risk are not found to be associated with consumers' perception towards e-payment. The study achieved a significant milestone by limiting the existing gaps in the literature by studying the variables in a single setting. However, usefulness, security, and ease of use are monumental factors that need to be studied independently.

It is concluded that all the factors included in the study are the most important and influence consumers' perception towards e-payment. The study provides an insight into customers' needs which may be essential for policy makers in providing better services. This study can be used for further research in

exploring other determinants of customer behavior towards e-payment.

Current research is to study few critical factors affecting consumer perception towards e-payment. However, several others important factors as cited by previous studies need to be probed. Future studies ought to consider additional meaningful factors such as anonymity, reliability convertibility, efficiency, traceability, and applicability that affect consumers' perception towards e-payment. Another limitation of the study is that it is based on a small sample size.

To enhance the ability to generalize the findings, a large sample size consisting of respondents of various age groups, educational, and social backgrounds need to be considered in future studies. Further, incorporation of demographic variables with findings might reveal some fascinating facts. Some additional statistical tools and techniques can be used to analyze the impact of consumers' adoption behavior relating to e-payment. Another area which can be investigated includes problems and hurdles faced by consumers while using e-payment. Frequency and type of problems faced by consumers can also be examined. Studies examining the difference between level of consumers' expectations and service provided by e-payment solutions are the need of the hour.

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