

CONSUMER ACCEPTANCE OF E-WALLETS AS A MODE OF MICRO-PAYMENT

Mary Metilda Jayaraj, Christ University
Raghav Kapoor, BBA (Honors) Christ University

ABSTRACT

E-wallets, in simple terms, can be referred to as the digital version of a physical wallet that can be used to carry out monetary transactions. Owing to the smartphone usage and the pivotal growth of the internet, the consumers are now shifting toward a cashless economy, with e-wallets becoming one of the pioneers and leading fintech products bringing about this change. The paper aims to study the consumer acceptance of e-wallets as a mode of micropayment. To understand and measure the consumer acceptance, this paper examines the satisfaction that the consumer is able to derive by using e-wallets in order to make payments of small denomination value. In order to measure the satisfaction derived, the study considers three independent variables, which include the perceived usefulness, the perceived ease of use, and the perceived security and protection. Accordingly, a structured questionnaire was prepared and the data was collected from 140 respondents on the basis of which ANOVA, correlation and regression analysis were carried out to draw statistical inferences from the data collected. The findings of the study showed that each of the independent variables, i.e., the perceived usefulness, the perceived ease of use as well as the perceived security and protection had a positive and a significant impact with the satisfaction derived by the consumers in using e-wallets to carry out micro-payments. Further research findings also revealed that there was a significant impact of each of these three independent variables on the satisfaction derived.

Keywords: E-wallets, Micro-payments, Financial Technology, Acceptance, Satisfaction, Usefulness, Ease of Use, Security and Protection.

INTRODUCTION

The twenty-first century brought along with it a great wave of a digital revolution. Be it in the form of the internet, smartphones, artificial intelligence, or any other advancement on that front, technology has played a crucial role in defining the latter half of the twenty-first century. Digitalization, in that sense, has helped in shaping the lives of several thousands of people across the world.

When referring to digitalisation, it can be said that several sectors/industries have evolved and grown over the years owing to the changes which were brought along with it. The financial industry is one such industry that has experienced continuous evolution in service delivery owing to digitalization. Particularly in the light of this context, the increased smartphone accessibility and internet penetration have gone ahead to have a deep impact and have paved the way ahead for several sectors to emerge in the field of digital finance. One such area which has emerged and gained huge traction over the recent years is that of e-wallets.

E-wallets stands for electronic wallet. An e-wallet is a software/online service which enables an individual to make transactions online either through a computer or a smartphone. The utility of an e-wallet is the same as that of a debit or a credit card, i.e., essentially, it is a digital service primarily used to carry out transactions. E-wallets have drastically evolved over the years and have become an upcoming way of carrying out monetary transactions

without any physical movement of cash involved whatsoever. The major objective of an e-wallet is to make quick, hassle-free transactions, thereby replacing or eliminating the whole idea of carrying or using a physical wallet. E-wallet companies around the globe are continuously innovating and evolving in order to attract users along with providing a hassle-free experience to them. Besides just being a simple payment transaction app, e-wallet companies have gone ahead to provide additional value-added services such as allowing users to make multiple payments for example, mobile phone recharges, paying electricity bills, etc. with the help of their e-wallet.

Globally there has been a constant increase in the number of users opting for e-wallets as the preferred mode of payment. The global mobile payment technology has grown to be a multi-billion-dollar industry, with global e-wallet transactions increasing at an unparalleled pace. A report by Global Market Insight (GMI,2022), the mobile wallet market is expected to be over USD 970 by 2030.

In light of this ever-growing popularity of e-wallets, a major trend that has been noticed in the recent past is the fact that a majority of the payments which are being carried out using e-wallets are actually micro-payments. Micro-payment, refers to a transaction involving a very small sum of money, usually made online using a digital mode of payment. Though there is no specific definition defining micro-payment, in a general sense, it can be understood as any transaction whose value falls in the range of \$1 to \$20. The concept of micro-payment done using mobile wallets has been gaining considerable momentum in India, and there has been a noticeable shift in the preference of users choosing to go with using e-wallets in order to carry out these micro-transactions. A report by BCG and Google also highlights the fact that going into the future, micro-transactions will form a substantial part of the digital payment industry. When looking at this from the industry viewpoint, i.e., analysing the micro-transactions with regards to the e-wallet segment, it can be concluded that the whole segment is still an emerging and upcoming one wherein a majority of the Indian users are still trying to understand and get hold of its adoption as a mean to carry out frequent transactions. In the current scenario, we can see that the e-wallet segment still cannot be classified as a matured sector but rather an evolving one.

In the case of this study, we found that the best way to map the future growth path for this industry was to understand the consumer acceptance of e-wallets as a mode of micro-transaction in the current scenario, i.e., the present state. By understanding the present consumer acceptability and usage of e-wallets as an instrument to carry out micro-transactions, we can definitely be able to get a sense of understanding of the future growth path for the industry. When analysing the existing research work in the field of e-wallets, there were several papers that sought to understand the usage of e-wallets in India or its diffusion and adoption in the Indian economy. However, there always remained a research gap in terms of understanding and analysing the actual consumer acceptability of e-wallets as a mode of micro-payment in the Indian market. This research paper, therefore, aims to fill this research gap by getting a grass-root and an in-depth understanding of the acceptance of e-wallets as a mode of micro-payment. In order to do so, the paper majorly uses four variables to help define and measure consumer acceptance. Usefulness, ease of use, security and protection, and the satisfaction derived are therefore the variables considered based on which this study is carried out.

LITERATURE REVIEW

A summary of the papers reviewed giving the background to the study is presented in the following paragraphs. The paper explores the various factors which determine the overall consumer acceptance of e-wallets as a mode of micro-payment.

A study by Hiteshi Ajmera and Viral Bhatt (2020) on the demographic variables such as gender, age, occupation, education, qualification, income etc., affecting the adoption of e-wallets found a significant affect the adoption of e-wallets and also four independent variables, all of which directly affect the intention of a consumer to adopt E-wallet. These four factors are the perceived service quality, perceived trust, the perceived satisfaction, and perceived benefit.

Davis (1989) introduced the Technology Acceptance Model (TAM). The Technology Acceptance Model is a theory of information system that essentially describes how consumers accept and use technology. The model primarily considers two major factors which tend to have an influence on a person's intention to use and adopt new technology. Based on the model, perceived usefulness and perceived ease of use were considered the two major factors which have a bearing on the consumer's acceptance of information system. Fred Davis defined the factor of perceived usefulness (PU) as – “the degree to which a person believes that using a particular system would enhance their job performance.” The model iterates the fact that the behavioural intention determines the usage of an information system and that the behavioural intention itself is determined by the person's/consumers attitude towards the information system along with his/her sense of utility.

Jaruwachrathanakul (2005) in his paper, aimed to determine the factors that motivate the Thai consumers to adopt and use the internet banking services. Perceived usefulness was identified as a major factor that encouraged the adoption of internet banking in Thailand. Anggit Anggoro (2019), in his paper titled- “Effects of perceived usefulness, ease of use and perceived value on behavioral intention to use digital wallet” conducted a study to identify and examine the factors which influenced the behavioral intention to use OVO digital wallet as an alternative payment option in Indonesia. It was found that the perceived usefulness had a positive influence on the Behavioral Intention to Use Mobile wallets.

Davis (1989) also defines the perceived ease of use (PEOU) as – “the degree to which a person believes that using a particular system would be free from effort.” The model designed by Davis explains the fact that if the technology is easy and simple to use, then in that case, the hurdles faced when accepting the technology will be overcome. Effendy, Hurriyati and Hendrayati (2021), in their paper, aimed to combine two theoretical models: - the Technology Acceptance Model (TAM) and the Unified theories of Acceptance and Use of Technology (UTAUT) model and understand the effect of factors such as perceived usefulness, perceived ease of use and social influence on the usage intentions of e-wallets. The study concluded that variables including perceived usefulness and perceived ease of use had a significant influence on the intention to use e-wallets. Tandon (2017) conducted a study to identify and analyze the factors/key determinants which influence the customer satisfaction towards online shopping in India. The author suggested that the ease of use include the free of effort user experience with the product in the initial stage, the speed with which the required features can be identified, the simplicity of the required actions along with the rapidity in navigating, the controllability that the user has when using the particular technology product and the technology product's user-friendly structure and interface.

Undale, Kulkarni and Patil (2020) in their paper titled- “Perceived e-wallet Security: Impact of covid-19 pandemic,” aimed to study two factors – “security concern” and “comfortability” and also the demographics with regards to using e-wallets during the Covid-19 pandemic. The findings of the study showed that female users were more concerned about e-wallet security as compared to male users. The research also found that regardless of the forceful adoption of e-wallets during the pandemic, the security concerns with regard to e-wallet were a prevailing and a major factor which is on the rise. Sarika and Vasantha (2018) considers trust to be a very important factor that directly affects the satisfaction derived by the users. The authors states that the most important factor determining the trust of the user is

the component of security and privacy and that it plays a major role in the consumer adoption of mobile wallets. Singh and Gupta (2017) conducted a study in Kurali, Punjab, to determine the factors which have an influence on the customer's adoption of mobile wallet payments. The findings suggested that mobile wallets would continue to grow in future. Jung and Jang (2014) stated in their paper that the e-wallet applications must be more secure and dependable. The author suggested an alternative safe way of making e-wallet payments using a smart solid-state drive (SSD) which is both secure as well as reliable. P C Lai (2016) conducted an explorative study of the design and security impact on the consumer's intention to use e-payment. The study stated that the intention to use e-payment system was influenced by factors such as "security," "design," "perceived usefulness" and the "perceived ease of use." The author stated that security as a factor had a positive influence on the user's intention to use the e-payment system.

METHODOLOGY

In this backdrop, this paper has identified three important variables influencing consumer acceptability of e-wallets as a mode of micro-payment. As such the three factors taken up for the study include, the perceived usefulness, perceived ease of use, and security and protection. The paper aims to study the consumer acceptance of e-wallets as a mode of micropayment. To understand and measure the consumer acceptance, this paper examines the satisfaction that the consumer is able to derive by using e-wallets in order to make payments of small denomination value. In order to measure the satisfaction derived, the study considers three independent variables, which include the perceived usefulness, the perceived ease of use, and the perceived security and protection. The major objective of this study is to understand the consumer acceptability of e-wallets as a mode of micro-payment. We wanted to analyse the impact of perceived usefulness, ease of use, and security and protection on the satisfaction derived by the customer and also find if the gender of the consumers has any impact on the perceived usefulness, perceived ease of use, and security and protection. The following are the hypothesis that was tested.

H1- The gender of the consumers has an impact on the perceived usefulness, perceived ease of use, perceived security and protection and the satisfaction derived from using e-wallets as a mode of micro-payment.

H2- There is a significant relationship between the perceived usefulness and satisfaction derived from using e-wallets as a mode of micro-transaction.

H3- There is a significant relationship between the perceived ease of use and the satisfaction derived from using e-wallets as a mode of micro-transaction.

H4- There is a significant relationship between the perceived security and protection and the satisfaction derived from using e-wallets as a mode of micro-transaction.

H5- There is a significant impact of e-wallet variables such as - perceived usefulness, perceived ease of use and perceived security and protection on the satisfaction derived from using e-wallets as a mode of micro-payment.

Four dimensions of customer satisfaction i.e., perceived usefulness, perceived ease of use and perceived security and protection were chosen for the study to identify and measure the level of satisfaction in each of these dimensions. A questionnaire was prepared with questions (using interval scales) on these dimensions and circulated to potential respondents who use e-wallets. 140 filled in questionnaires were received in useable form. The respondents were chosen through convenient sampling technique. The collected data was analysed and the above-mentioned hypothesis was tested using the basic statistical tools like

ANOVA (H1), Correlation analysis (H2, H3, H4) and Regression Analysis (H5). Based on the above analysis, the hypothesis for this study were tested, and accordingly, the findings were reported.

DATA ANALYSIS AND RESULTS

Hypothesis 1

The gender of the consumers has an impact on the perceived usefulness, perceived ease of use, perceived security and protection and the satisfaction derived from using e-wallets as a mode of micro-payment Tables 1-5.

Variables	Gender	N	Mean	F Value	Significance Value
Gender and Usefulness	Male	93	3.7473	0.228	0.634
	Female	47	3.6702		
	Total	140	3.7214		
Gender and Ease of Use	Male	93	4.0903	1.698	.195
	Female	47	3.9106		
	Total	140	4.0300		
Gender and Security and Protection	Male	93	3.4516	.164	.686
	Female	47	3.5191		
	Total	140	3.4743		
Gender and Satisfaction derived	Male	93	4.0129	.018	.895
	Female	47	4.0298		
	Total	140	4.0186		

Out of the total sample population of 140 respondents, 93 respondents (66.4%) were male, while 47 respondents (33.6%) were female respondents, respectively. An ANOVA test with gender as the independent variable, and the perceived usefulness, perceived ease of use, perceived security and protection and the satisfaction derived as the dependent variable was used to study the impact.

As the level of significance is greater than 0.05 for all dimensions compared to gender (male and female), the null hypothesis has been accepted implying that there is no significant difference between the means of gender and the e-wallet variables such as perceived usefulness, perceived ease of use, perceived security and protection and the satisfaction derived.

Hypothesis 2

There is a significant relationship between the perceived usefulness and satisfaction derived from using e-wallets as a mode of micro-transaction.

		PU_MEAN	SD_MEAN
PU_MEAN	Pearson Correlation	1	.683**
	Sig. (2-tailed)		.000

	N	140	140
SD_MEAN	Pearson Correlation	.683**	1
	Sig. (2-tailed)	.000	
	N	140	140

*Correlation is significant at the 0.01 level (2-tailed).

Correlation, which is a measure of the strength of the linear relationship between two variables, was used to measure the relationship between the acceptance/ satisfaction (dependant variable) of e-wallets as a mode of micro-payment amongst the consumers, with the three variables, i.e., perceived usefulness (PU), perceived ease of use (EOU), and security and protection (SP) (independent variables) .

Based on the results show that there is a statistically significant relationship (p-value = 0.000 < 0.05, r=0.683) between the perceived usefulness (PU) and the satisfaction derived from using e-wallets as a mode of micro-payment. It can be inferred that there is a significant positive relationship between the perceived usefulness and the satisfaction derived from using e-wallets as a mode of micro-payment.

Perceived Ease of Use and Satisfaction Derived

Hypothesis 3

There is a significant relationship between the perceived ease of use and the satisfaction derived from using e-wallets as a mode of micro-transaction.

Table 3
PERCEIVED EASE OF USE AND SATISFACTION DERIVED

		EOU_MEAN	SD_MEAN
EOU_MEAN	Pearson Correlation	1	.739**
	Sig. (2-tailed)		.000
	N	140	140
SD_MEAN	Pearson Correlation	.739**	1
	Sig. (2-tailed)	.000	
	N	140	140

**Correlation is significant at the 0.01 level (2-tailed).

The results show that there is a statistically significant positive relationship(p-value = 0.000 < 0.05, r=0.739) between the perceived ease of use and the satisfaction derived from using e-wallets as a mode of micro-payment. Therefore an increase in the perceived ease of use will lead to an increase in the satisfaction derived.

Security and Protection and Satisfaction Derived

Hypothesis 4

There is a significant relationship between the perceived security and protection and the satisfaction derived from using e-wallets as a mode of micro-transaction

Table 4
RELATIONSHIP BETWEEN THE PERCEIVED SECURITY AND PROTECTION

		SP_MEAN	SD_MEAN
SP_MEAN	Pearson Correlation	1	.550**
	Sig. (2-tailed)		.000
	N	140	140
SD_MEAN	Pearson Correlation	.550**	1
	Sig. (2-tailed)	.000	
	N	140	140

**Correlation is significant at the 0.01 level (2-tailed).

The results show that there is a statistically significant relationship (p-value = 0.000 < 0.05, r= 0.550) between the security and protection and the satisfaction derived from using e-wallets as a mode of micro-payment. An increase in the perceived security and protection will lead to an increase in the satisfaction derived.

A regression analysis is carried out to find out the impact on e-wallet variables- perceived usefulness, perceived ease of use and perceived security and protection on the satisfaction derived from using e-wallets as a mode of micro-payment.

Hypothesis 5

There is a significant impact of e-wallet variables such as - perceived usefulness, perceived ease of use and perceived security and protection on the satisfaction derived from using e-wallets as a mode of micro-payment.

Table 5
IMPACT OF VARIABLES ON THE SATISFACTION DERIVED FROM USING E-WALLETS

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.901	.200		4.514	.000
	Perceived Usefulness Mean	.235	.053	.297	4.410	.000
	Perceived Ease of Use Mean	.417	.062	.454	6.729	.000
	Perceived Security and Protection Mean	.162	.045	.212	3.642	.000

a. Dependent Variable: Satisfaction Derived_Mean

Satisfaction derived is taken as the dependent variable, whereas the perceived usefulness, perceived ease of use and perceived security and protection is taken as the independent variable.

The formula for calculating regression is as follows: - $y = mx_1 + mx_2 + mx_3 + b$ wherein: - y= dependent variable of the regression, m= slope of the regression x_1, x_2 & x_3 are independent variables and b , the constant.

It both the unstandardized and standardized beta coefficient between independent and dependent variables. Unstandardized beta is used to estimate the regression equation.

Perceived Usefulness- The estimated equation is $Y = 0.901 + 0.235 * X_1 + e$. This indicates

that for every one unit increase in the perceived usefulness, there is an increase in the satisfaction derived by .235units

Perceived Ease of Use- The estimated equation is $Y = 0.901 + 0.417 * X_1 + e$. This means that for every one unit increase in the perceived ease of use, there is an increase in the satisfaction derived by .417units.

Perceived Security and Protection -The estimated equation is $Y = 0.901 + 0.162 * X_1 + e$. This means that for every one unit increase in the perceived security and protection, there is an increase in the satisfaction derived by .162 units.

Therefore, the null hypothesis is rejected , and the research hypothesis that there is a significant impact of perceived usefulness, perceived ease of use and perceived security and protection on the satisfaction derived from using e-wallets as a mode of micro-payment is accepted.

DISCUSSION AND CONCLUSION

The consumer acceptance in the case of this study is understood in the context of the satisfaction which the consumers are actually able to derive by using e-wallet as a mean to make micro-payments. The four key variables for the study the perceived usefulness, the perceived ease of use, the perceived security and protection as well as the satisfaction derived were based on the Technology Acceptance Model (TAM) introduced by Davis (1989).

Earlier studies have shown conflicting outcomes in case of demographic variables and its impact on consumer acceptance (Hiteshi Ajmera and Viral Bhatt, 2020). However, this study found that the gender of the consumers who were using e-wallets had no impact on any of the independent variables which actually affect the acceptance of e-wallets. Secondly and most importantly, the study found a positive correlation relation between each of the independent variables, i.e., the perceived usefulness, the perceived ease of use, the perceived security and protection with the satisfaction derived, which is indicative of the fact that there is a significant relation between the two. Further analysis also revealed that each of these factors also had a significant impact on the satisfaction derived which leads us to ultimately draw a conclusion that each of the variables taken in this study does have a bearing on the consumer acceptability of e-wallets as a mode of micro-payment and that the consumers are actually satisfied with using e-wallets in order to carry out transactions of small denomination value. Therefore, in conclusion, based on the findings from this study, it can be said that consumers are actually satisfied with using e-wallets as a mode of micro-payment, and in the future, e-wallets will continue to experience a phenomenal growth in terms of its functionality, customer reach as well as its user base. The paper concludes that each of these four independent factors have a significant impact on the overall customer satisfaction, which ultimately goes on to determine their adoption of E-wallets. This study had focussed on a small sample of respondents through convenient sampling and used basic statistical techniques to understand the relationship of the variables taken up for the study indicating consumer acceptance. Going forward, the study can be expanded to include the influence of other variables especially in the area of security and protection using a broader representation of respondents.

REFERENCES

- Ajmera, H., & Bhatt, V. (2020). Factors affecting the consumer's adoption of E-wallets in India: An empirical study. *Alochana Chakra J*, 9(6), 1081-1093.
- Anggoro, A. (2019). *Effects Of Perceived Usefulness, Perceived Ease Of Use, And Perceived Value On Behavioral Intention To Use Digital Wallet (A Case Study Of Ovo User In Malang)* (Doctoral dissertation, Universitas Brawijaya).

- Chau, P. Y. (1996). An empirical assessment of a modified technology acceptance model. *Journal of management information systems*, 13(2), 185-204.
- Davis, F. D. (1985). *A technology acceptance model for empirically testing new end-user information systems: Theory and results* (Doctoral dissertation, Massachusetts Institute of Technology).
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management science*, 35(8), 982-1003.
- Effendy, F., Hurriyati, R., & Hendrayati, H. (2021). Perceived usefulness, perceived ease of use, and social influence: intention to use e-wallet. In *5th Global Conference on Business, Management and Entrepreneurship (GCBME 2020)* (pp. 311-315). Atlantis Press.
- Gupta, V. (2017). A study on consumer adoption of mobile wallet. *International Journal of Trade & Commerce-IIARTC*.
- Jaruwachirathanakul, B., & Fink, D. (2005). Internet banking adoption strategies for a developing country: the case of Thailand. *Internet research*, 15(3), 295-311.
- Jayawardhena, C., & Foley, P. (2000). Changes in the banking sector—the case of Internet banking in the UK. *Internet research*, 10(1), 19-31.
- Jung, I. Y., & Jang, G. J. (2014). A secure and reliable e-Wallet using a smart SSD. *Life Science Journal*, 11(7), 117-121.
- Lonare, A., Yadav, A., & Sindhu, S. (2018). E-wallets: Diffusion and adoption in Indian economy. *Indian Journal of Commerce and Management Studies*, 9(2), 09-16.
- Pachpande, B. R., & Kamble, A. A. (2018). Study of E-wallet Awareness and its Usage in Mumbai. *Journal of Commerce and Management Thought*, 9(1), 33-45.
- Sarika, P., & Vasantha, S. (2018). Review on influence of trust on mobile wallet adoption and its effect on users' satisfaction. *International Journal of Management, Technology and Engineering*, 8(12), 1731-1744.
- Tandon, U., Kiran, R., & Sah, A. (2017). Analyzing customer satisfaction: users perspective towards online shopping. *Nankai Business Review International*, 8(3), 266-288.
- Undale, S., Kulkarni, A., & Patil, H. (2021). Perceived eWallet security: impact of COVID-19 pandemic. *Vilakshan-XIMB Journal of Management*, 18(1), 89-104.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, 46(2), 186-204.

Received: 14-Jul-2023, Manuscript No. AMSJ-23-13783; **Editor assigned:** 17-Jul-2023, PreQC No. AMSJ-23-13783(PQ); **Reviewed:** 28-Oct-2023, QC No. AMSJ-23-13783; **Revised:** 06-Nov-2023, Manuscript No. AMSJ-23-13783(R); **Published:** 03-Dec-2023