GFJMR
July-December 2018
Vol. 17 Issue-2 (pp. 28-38)
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A Study on preference for adoption of E-wallet

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Abstract

E-Wallet is the digital revolution witnessed by the Indian Economy since few years. Digital payments are in huge demand with the radical increase in internet and smart phone users. According to TechSci Research's latest report, India's mobile wallet market could reach $6.6 billion by 2020. The physical wallet has been replaced with a digital wallet due to various reasons and hence is now integrated into an existing mobile device like a cell phone. The present study finds the impact of factors influencing the adoption of E-wallet. The study is descriptive is nature as it aspires to measure an interaction between the two independent variables (Gender & User) on the dependent variable (Preference to use E-wallet in future) A sample of 104 respondents are surveyed to prove the above stated hypothesis. Correlation, Regression and Two-way ANOVA shall be used to find the factors affecting the adoption of E-wallet amongst the respondents of Surat city. Promotion and Features are predominantly leading toward the Preference for the use of E-wallet, whereas Complexities and User Demographics are having negative role towards the use of E-wallet. This concludes that the system of E-wallet should be more simple and easy to use and Demographic factors like Youngsters and Educated people shall stand more responsible towards the use of E-wallet.

Keywords:

E-Wallet, E-commerce, Regression, Two-way ANOVA

Introduction:

E- Wallet is a new digital revolution witnessed in the current payment system of the economy. It refers to an electronic device that allows an individual to make electronic commerce transactions. This can include purchasing items on-line with a computer or using a smart phone to purchase something at a store. It is not only meant for the high value transactions but a game changer in small-value transactions too.

History of E-commerce & E-wallet in India

During 90s, ecommerce was integrating in the economy as no one at that time would have even thought that the buying and selling online or say the online trading will become a trend in the world and India will also share a good proportion of this success. At the initial phase, most of the user were B2B or Big corporate. Small and medium companies and retail customer were lacking in the arena of ecommerce. Matrimonial companies and Recruitment Portals were heading the race followed by travel companies. As researched by Statistica, the number of internet users shot up from 140 million 2012 to 213 million in 2013 and is projected to be 400 million in 2016. Of the total internet users in India, 60% visit e-retail sites and amongst these, the percentage of buyers as well as the number of orders per buyer has been steadily rising. The Indian e-commerce market has thus begun to mature and displays characteristics close to that of China, which traditionally has conversion rates of 3.5 %.

A legal recognized term PPI - **"Pre-paid Payment Instruments"** are defined in the RBI Guidelines issued under the Payment and Settlements Systems Act, 2005 as payment instruments that facilitate purchase of goods and services, including funds transfer, against the value stored on such instruments. The value stored on such instruments represents the value paid for by the holders by cash, by debit to a bank account, or by credit card. Unlike other pre-paid payment instruments, e-wallet is only an internet based online account, sans the existence of a physical card. Mobile wallet is an e-wallet where the mobile phone gets doubled up as an electronic wallet. Being a pre-paid payment instrument, digital / e-wallets are also subject to the regulations stipulated by RBI for such instruments

Advantages and Barriers

E-wallet as being driven by technology is more meant to be for a tech-savvy user. Today with more of internet use and smart phone users, applicability of such an innovative payment systems are a need of this time. It has various advantages and is also not free from certain limitations which are enumerated below.

Advantages:

1. E-wallet services on different websites are easily available and generally have the following few easy steps to get started.

2. User is not suppose to enter his / her credit or debit card details for every transaction

3. There is no minimum amount and you can deposit an amount as low as Rs 10.

4. You can pass on the benefits of your e-wallet to your friends and family as well.

5. There is no chance of a decline of payment since e-wallet is a prepaid account.

Barriers

1. Habituated to use cash

2. Complexity in its usage

3. Fraud or hidden charges

4. No cash refund

5. Apathy towards non cash methods of payment

Growth and Opportunity

At Present, more than 90% of transactions happen via cash. E-wallet providers are hence focusing to this large pie and want to convert it into digital transactions. With increased adoption of smartphones, payment patterns have seen a change, which has led to the launch of e-wallets. According to TechSci Research's latest report, India's mobile wallet market could reach $6.6 billion by 2020. This calls for a great opportunity for the E-wallets usage by mobile phones.

Post demonetization mobile wallet apps have been reporting astronomical growth in usage and download in India. RBI's decision to increase the limits on mobile wallets spend to Rs. 20,000 for users and to Rs. 50,000 for merchant bank transfers in view of the cash crunch following the demonetisation of high-value currency. Such a progressive step shall bring a boost in the use of e-wallet in India and shall ease the challenges face by the both buyers and sellers of small and medium segment of businesses.

Types of Mobile Wallets

As per RBI, mobile wallets (or e-wallets) are of 3 different types – closed wallets, semi-closed wallets and open wallets.

Closed mobile wallets can be used only for that particular company (or online merchant) goods and services. No redemption or cash withdrawal is possible with such wallets. Examples of closed wallets would be the ones offered by MakeMyTrip, Jabong, etc.

Semi-closed wallets also do not allow redemption or cash withdrawal. They can be used to transact for goods and services (inclusive of financial services) at several different merchant locations that have the required tie-up (contract) with the wallet issuing company to accept payments. For example, Paytm, MobiKwik, PayUMoney, Oxigen, etc.

Open Wallets are those that allow redemption as well as cash withdrawals (from automated teller machines / business correspondents) in addition to the other features offered by semi-closed ones. A perfect example is the Vodafone powered M-pesa wallet.

In India, banks, conglomerates, telecommunication and financial technology companies offer e-wallets. While banks are allowed to offer open wallets, others companies like Tele-com and Fin Tech can offer only semi-closed wallets and need to have a prepaid payment instrument license. Open e-wallets allow doing a cash withdrawal whereas semi-closed wallets don't. E-wallets didn't exist in our daily transaction space. But that's changing. “E-wallet is a financial payment product and has a genuine place in the financial system,” said Saurabh Tripathi, partner and director, Boston Consulting Group.

Digital wallets are quickly becoming mainstream mode of online payment. Shoppers are adopting digital wallets at an incredibly rapid pace, largely due to convenience and ease of use. The never ending list of e-wallet service providers includes Paytm, Mobikwik, Citrus, State Bank Buddy, Citi Master Press, ICICI Pockets, Lime, Jio Money, Vodafone M-Pesa, Airtel Money etc. The present paper is divided into 5 sections; where section 1 introduces E-wallet and details about E-wallet. Section 2 discusses past studies related to E-wallet, section 3 elaborates the methodology and data, section 4 envisages the analysis of data and section 5 concludes the study.

PAST STUDIES

Existing studies on E-wallet are very less in number and hence the present section not only gives review about the past studies on E-wallet but also discusses studies for the related topics of E-payment system.

Lee (2005) investigated the impact of perceptions of interactivity on consumer trust and transactions in mobile commerce and concluded that trust does in fact play a significant role in determining consumer transaction intentions. Balan et al., (2006) analysed the requirements and challenges of implementing a nationwide digital wallet solution in Singapore. they discussed why Singapore is ready for a digital wallet and identify the key challenges in building and deploying a digital wallet.

Chen (2008) examined which determinants affected consumer use of mobile payments (m-payments). Consumer acceptance was determined by four factors: perceived use, perceived ease of use, perceived risk, and compatibility. The strongest factor to sway consumer acceptance was compatibility. Compatibility refers to the extent to which m-payment is consistent with the prospective user's lifestyle and the way he or

she likes to shop

Au and Kauffman (2008); Ondrus et al., (2005) found that the contingency theory of technology adoption emphasizes the importance of environmental influences such as cultural, social and economic factors, which in turn impact consumer and merchant adoption. The contingency theory is useful for the classification of m-payment research as m-payment services differ in each country due to differences in payment technology infrastructure, regulation, laws, or habits

World Payment Report 2014 revealed that the global annual non-cash transactions being facilitated by e-payment and mobile payment (m-payment) had been on the increase over the years, except for 2012 where it decelerates from an annual growth rate of 8.6% in 2011 down to 7.7% in 2012

Premchand & Choudhry (2015) found that the world payments system is gradually changing from coins and paper based money to electronic forms that provide more convenient, fast and secured process of making payments among individual and organizations

Rathore (2016) investigated on various factors affecting a customer's decision to adopt digital wallet as a mode of online payment.150 smart phone users were surveyed using a structured questionnaire. Factors which were given importance were the choices and challenges faced by customers while using digital wallet. ANOVA was applied as a research methodology which concluded that customers are very rapidly adopting digital wallet as a mode of online payment and are looking for increased opportunity in this field.

Singh et al; (2016) studied the behavior of 204 North Indian Consumer to understand their adoption towards mobile Wallet. An integrated UTAUT model was applied which includes variables such as ease of use, trust, security, self-efficacy, etc., and an additional variable (hedonism) to test consumers' behavior. Analytical tools such as Regression analysis, ANOVA and descriptive analysis are applied to test the relationship among several dimensions such as perceptions, preferences, satisfaction and usage rate of mobile wallets in North India. The result reveals a significant association between consumers' perception, preference, usage and satisfaction. Security, trust and hedonism are few of the most influencing variables in the study. Demographic variables such as gender and age also influence consumer satisfaction and usage rate of mobile wallets in North India.

Rathore (2016) used a quantitative method to analyze the views of 132 respondents for their preference towards the online mode of payment and factors affecting their choice and challenges while using digital wallet. ANOVA has been applied to examine the statistical results for the data given by the selected respondents. Convenience and Ease of use are some of the factors which are found to be more significant in the present study.

DATA & METHODOLOGY

The present study attempts to analyze the impact of Perceived Factors responsible for the usage of E-wallet which are resultant from the Exploratory Factor Analysis. Factors derived from the study are; Promotion & Features, Trust & Privacy, User Demographics, Convenience and Security & User Friendly.

Objective of the study

The main objectives of this study envisage:

• To study the level of correlation between the derived factors

• To analyze the impact of all the factors on preference for the usage of E-wallet

• To compare the mean difference between the groups of Gender and User for the perceived factors towards the use of E-wallet.

Data and Methodology

The present study is descriptive is nature as it aspires to measure the impact of factors affecting the perception and preference of E-wallet for smart phone user of Surat City. Secondary and primary data both are involved in this study. As a secondary research, information news and reviews about E-wallet exhibited in different articles, blogs, interviews, literature etc; is collected. The main focus is on the primary data analysis which is collected from 104 respondents of Surat city by employing a non probability convenience and snowball sampling method. The respondents are approached by Gmail and Facebook using a structured questionnaire which is prepared in Google docs. A five point likert scale is used to capture the perception of respondents which is not inclined towards one direction.

Pearson Correlation has been applied to find the strength of relationship between the perceived Factors of E-Wallet. The hypothesis tested for the test of correlation is:

H0a: R = 0: There is no significant relationship between Promotion & Features, Trust & Privacy, User Demographics, Convenience and Security & User Friendly.

H1a: R ≠ 0: There is a significant relationship between Promotion & Features, Trust & Privacy, User Demographics, Convenience and Security & User Friendly.

Furthermore, a **multiple linear regression model** has been applied on the perceived factors of E-wallet and Preference to use E-Wallet. A stochastic model was implemented where X – the leading or the independent variables were *Promotion & Features, Trust & Privacy, User Demographics, Convenience and Security & User Friendly and* Y- the explained variable or dependent variable *is Preference to use E-Wallet***.**

The assumptions like, data type, Residual analysis, F statistics and Mulcollinearity were tested to fit the best possible regression model. The significance of all the independent variables were analyzed to find the impact on dependent variables. The Hypothesis tested for the same is:

H0b: b = 0 (b -Coefficients are not significant)

H1b: b ≠ 0 (b- Coefficients are significant)

Lastly, **two way ANOVA** has been applied to compare the mean differences between the groups of Gender and User – independent variable on preference to use E-wallet- dependent variable. An interaction effect, if any is found out between the Gender and User on Preference to use E-Wallet. The hypothesis tested for the tow way ANOVA is:

H0c: μ1 = μ2, Where the means of male and female are same

H1c: μ1 ≠ μ2, Where the means of male and female are not same

H0d: μA = μB = μC = μD = μE, Where the means of Students, Housewife, Businessman, Professionals, Retired are same

H1c: μA ≠ μB ≠ μC ≠ μD ≠ μE, Where the means of Students, Housewife, Businessman, Professionals, Retired are not same

H0e: There is no interaction effect between Gender and User on Preference to use E-wallet.

H1e: There is an interaction effect between Gender and User on Preference to use E-wallet.

Results and Discussion

***Descriptive Statistic*s**

Table 1: Results of Descriptive Statistics

Descriptive Statistics	Features & Promotion	Trust & Privacy	User Demographics & Complexities	Convenience	Security& user friendly	Preference to use E-Wallet
Mean	3.5	3.06	2.67	4.09	4.25	4.13
Median	3.57	3	2.5	4.25	4.5	4
Std. Deviation	0.8	0.84	0.96	0.68	0.71	1.01

The above table describes the general descriptive statistics for all the independent and dependent variables as mentioned in Methodology. It is observed that User Demographics is deviating from other variables with lowest mean and highest standard deviation.

Pearson Correlation

Table 2: Results of Pearson Correlation

Factors	Features & Promotion	Trust & Privacy	User Demographics & Complexities	Convenience	Security& user friendly	Preference to use E-Wallet
Features & Promotion	1.00					
Trus t & Privacy	0.27*	1.00				
User Demographics & Complexities	0.28*	0.49*	1.00			
Convenience	0.20*	-0.12*	-0.01*	1.00		
Security& U ser friendly	0.21*	-0.02	-0.10	*0.58**	1.00	
Preference to use E-Wallet	0.56*	0.01	-0.04	0.34*	0.32*	1

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2 elucidates the results of Correlations between all the independent and dependent variables. Excepting the pairs of (1) Trust & Privacy with Security and Preference to Use E-Wallet and (2) User Demographics & Complexities with Security and Preference to use E-wallet; all other pairs of correction are significant at 95% confidence level. But as seen the correlation values are very less and hence the strength of correlations between Promotion & Features with Preference to use E-Wallet and Convenience with Security are found to be more robust as they are greater than 0.05. All other pairs of Correlation are very weak in their magnitude. Therefore a null hypothesis is accepted where all the pairs of variables are not significantly related with each other.

Multiple Linear Regressions

A multiple linear regression model has been applied where the dependent variables are *Preference to use E-Wallet* and independent variables are *Promotion & Features, Trust & Privacy, User Demographics, Convenience and Security & User Friendly.* The data is of interval order and hence the first assumption to

apply Regression has been met.

Table 3: R-Square Statistics

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.63	0.41	0.37	0.79

Above tables describes R and R *square* values, where R represents the simple correlation which is 0.63. This indicates a high magnitude of correlation. The R *square* Value is 0.40; indicating the variation in dependent variable explained by independent variable. The results indicate that 40.62% variation Preference to use E-wallet can be explained by Features & Promotion and User Demographics & Complexities (Refer Table 3).

Table 4: F- Statistics

ANOVA						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	42.37	5	8.47	13.45	**0***

F- Statistics explains the statistical significance of the model. As the value extracted from the ANOVA table of Regression model is < 0.05, it indicates the model to be statistically significant.

Table 5: Results of Linear Regression Model

Linear Regression Model				
Independent Variables	**Standardized Coefficients**	**t**	**Sig.**	**VIF**
	Beta			
(Constant)	0.78	1.2	0.22	
Features & Promotion	0.56	6.65	**0***	1.21
Trust & Privacy	-0.04	-0.48	0.62	1.42
User Demographics & Complexities	-0.16	-1.81	**0.07***	1.41
Convenience	0.15	1.59	0.11	1.61
Security& User friendly	0.09	0.92	0.35	1.60

The results of Linear Regression model are described in table 5. It indicates that only Features and Promotion – 0.00 and User Demographics & Complexities – 0.07 are statistically significant at 5% and 10% significant level. Hence only these 2 factors are capable of explaining the Preference to use E-Wallet. All other variable are statistically insignificant and hence holds no power to explain Preference to use E-

Wallet.

Preference to use E-Wallet = 0.78 + 0.56 (Features & Promotion) – 0.16 (User Demographics & Complexities)

The above mentioned equation explains that Features and Promotion are the most important and positively significant factors affecting the preference towardsE-Wallet, whereas Complexities are negatively and very less significant inaffecting the preference towards E-Wallet accepting rejecting thenull hypothesis $b \neq 0$.

The Variance Inflation Factor (VIF) measures the impact of collinearity among the variables in the model. It is observed that all the VIF values are less than 5 indicating an absence of multicollinearity between the variables in the Regression model.

Table 6: Normality test for Residuals of the model

Tests of Normality		
	Shapiro-Wilk	
	Statistic	Sig.
Standardized Residual	**0.977281**	**0.0706044**

The residuals of the regression model should be normally distributed for the better model fit. Table 6 indicates a significance value of 0.07 which is more than 0.05 at 95% confidence level and hence the null hypothesis of Residuals being normal is accepted and Model fitness is more robust.

Two Way ANOVA

Table 7: Descriptive Statistics for Two way ANOVA

Descriptive Statistics			
Dependent Variable: Preference to use E-wallet in Future			
Gender	**User**	**Mean**	**Std. Deviation**
Male	Student	4.27	0.91
	Businessman	4.25	0.96
	Professional	3.60	0.55
	Retired	4.35	1.22
	Total	4.23	0.99
Female	Student	3.53	1.17
	Housewife	3.25	1.26
	Businessman	4.50	0.71
	Professional	4.43	0.53
	Retired	4.56	0.51
	Total	4.02	1.02
Total	Student	3.98	1.07
	Housewife	3.25	1.26
	Businessman	4.33	0.82
	Professional	4.08	0.67
	Retired	4.45	0.94
	Total	4.13	1.01

Table 8: Results of Levene's Test of Equality of Variances

Levene's Test of Equality of Error Variances			
Dependent Variable:Preference to use E-wallet in Future			
F	df1	df2	Sig.
1.696	8	95	**0.109**
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.			

The above table reveals the results of Levene's Test which explains the homogeneity of variance. The null hypothesis is tested; F sig ≠ 0, the variances are homoskedastic. The test for homogeneity of variance was not significant, Levene F (8, 95) = 1.69, p = .109, indicating that this assumption underlying the application of the two-way ANOVA was met and the null hypothesis of homogeneity is retained.

Table 9: Results of Tests of Between Gender and User Group

Tests of Between-Subjects Effects						
Dependent Variable: Preference to use E-wallet in Future						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	16.77773719	8	2.10	2.28	0.03	0.16
Intercept	815.6321777	1	815.63	887.19	0.00	0.90
Gender	0.230791265	1	0.23	0.25	0.62	0.00
User	9.644957626	4	2.41	2.62	**0.04**	0.10
Gender * User	8.115039687	3	2.71	2.94	**0.04**	0.09

The rows which are important to analyze are Gender, User and Gender*User. These rows helps to examine the statistical significant impact of independent variables; Gender, User and Gender*User on dependent variable; Preference to use E-wallet.

The results for the two-way ANOVA indicated an insignificant main effect for gender, F (1, 47) = 0.25, p = 0.62 retaining the null hypothesis of Gender having no impact on Preference to use E-wallet. However a significant main effect was found for the User category, F (4, 100) = 2.62, p = 0.04 rejecting the null hypothesis with user having significant impact on Preference to use E-wallet. Additionally, the results show a significant interaction between gender and User, F (3, 101) = 2.71, p = 0.04 (see Table 9), indicating that any differences between the user groups were dependent upon which gender the respondents were and that any differences between females and males were dependent upon which User group they were in (see table 10).

Table 10: Mean results of Gender and User

Gender * User			
Dependent Variable: Preference to use E-wallet in Future			
Gender	**User**	**Mean**	**Std. Error**
Male	Student	4.27	0.18
	Housewife	0.00	0.00
	Businessman	4.36	0.48
	Professional	4.25	0.43
	Retired	3.60	0.23
Female	Student	4.50	0.22
	Housewife	3.25	0.48
	Businessman	3.36	0.68
	Professional	4.56	0.36
	Retired	4.53	0.24

Because the interaction between gender and user group was significant, the two main effects can be ignored and instead first examined the gender simple main effects, that is, the differences between females and males for each of the User groups. The males in the Businessman category (Mean = 4.36) had significantly higher flexibility levels compared to the females Business Category (Mean = 3.25) and the females in the Professional category (Mean = 4.56) is higher as compared to Male Professionals (Mean = 4.25).

Conclusion

E-wallet has been a need of an hour for every Indian. Factors such as Promotion & Features, Trust & Privacy, User Demographics, Convenience and Security & User Friendly are affecting are leading to the rapid use of E-wallet. Preference to use E-wallet is more driven by the factors such as Features & Promotion and Convenience to use. Marketers and Developer associated with E-wallet, therefore can focus on these factors to make E-wallet usage more efficient and effective.

Promotion and Features are predominantly leading toward the Preference for the use of E-wallet, whereas Complexities and User Demographics are having negative role towards the use of E-wallet. This concludes that the system of E-wallet should be more simple and easy to use and Demographic factors like Youngsters, Educated people shall stand more responsible towards the use of E-wallet.

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