Adaptation of e-Wallet Payment: An Empirical Study on Consumers' Adoption Behavior in Central India

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Abstract

On 8th November 2017, the Government of India announced the demonetization of Rs. 500 &Rs. 1000 currency notes, to control black money, corruption and terrorism. After initial havoc and suffering among citizens regarding their own note exchanges and squeezed payment options, the commercial markets witnessed the rise of digital payment system in India. The study emphases on 'e-Wallets', one of the prominent mode of digital payment, which is now being adopted and used by many of the consumers. An attempt is made to understand various factors having effect on the adaptation and diffusion of e-wallet system. The study incorporates the opinions from 115 respondents from Raipur, the capital city of Chhattisgarh State in Central India. Evident from the outcomes, the e-wallet or digital wallet is surely a secured and convenient mode of payment now-a-days.

Keywords:*e-Wallet, TAM, Consumer Behavior, Adoption.*

1. Introduction:

In today's techno-crazed world, devises like smartphones, tablets, laptops have become an inseparable part of our daily life. These devises, when being connected to an internet, becomes a jinni that makes a life more convenient and stress free for a user. With the help of internet and supporting apps/software, a person can perform many tasks like, calling, texting, shopping, booking tickets, buy/sell goods, etc. These utilities generate the perpetual scope for digital or online payment system. Now, mobile users use their smartphones to make money transaction or payment by using applications installed in the phone.

A digital wallet or e-wallet refers to an electronic payment instrument that allows an individual to make electronic transactions. This can include purchasing items on-line with a computer or using a smartphone to purchase something at a store. An individual's bank account can also be linked to the digital wallet. Amoroso & Watanabe (2012), cited in their study that - digital payment instruments fall under the category of electronic money, which "includes all non-cash and

non-paper payments instruments such as plastic cards and direct transfer and all money transactions via electronic channels"

Digital wallets are generally in the form of a *card with embedded micro-chip* or a *mobileapplication (Apps)*, whose memory is connected to a bank deposited with enabled permissions for debit and credit, known as a 'Float Account'. This float account is debited at each purchase with no involvement from the issuer. The e-wallet offers many advantages: transactions are secure, it is adapted to make micro payments, it is easy to use, universal. They might also have their driver's license, health care, loyalty card(s) and other ID documents stored on the phone.

Despite the strong and consistent increase in the use of electronic payment methods worldwide, the diffusion of electronic wallets is still far from widespread. But with the increased user of smartphones, the diffusion and utilization of e-wallet or digital wallet has increased. As mentioned in a research done by Rathore H. M.(2016), the number of smartphone users has increased radically. "India will exceed 200 million smartphone users, topping the US as the world's second largest smartphone market by the end of 2016 due to increasing penetration of affordable smart mobile devices in the country," the US-based research firm said in a report. According to TechSci Research's latest report, India's mobile wallet market could reach $6.6 billion by 2020.

A. Commonly used digital wallets in India:

Globally, the digital wallets are making economies transit from currency based transactions to cash-less transactions. Many business giants looked it as an opportunity and came up with many e-wallets to serve and retain consumers. Some of the popular wallets in India are:

- **Paytm:**Paytm started out with mobile recharges, DTH plans, and bill payments, and then launched an ecommerce marketplace in February 2014. Its wallet partners include Uber, Book-my-show, and Make My Trip, along with others in categories such as shopping, travel, entertainment, and food.It has a license from RBI to set up a payments bank, enabling it to offer current and savings account deposits, issuing debit cards and offering Internet banking services.
- **FreeCharge:**FreeCharge lets one recharge any prepaid mobile phone, postpaid mobile, electricity bill payments, DTH and data card in India. It recently added metro card recharging as a feature of its platform. The wallet can be topped up with debit cards, credit cards and net banking, and can be managed via an app or from the Web browser.
- **MobiKwik:**MobiKwik can also be used to recharge mobiles and pay bills, but it's also accepted across merchants such as Book-My-Show, Make-My-Trip, Domino's Pizza, eBay, among others.MobiKwik has also tied up with *Big Bazaar* and *SagarRatn*a franchises enabling mobile payments. It has a section with cash backs offers listed on its website with include both online and offline players. Top ups can be done using net banking, debit cards, and credit cards, the app can be used to send and request money between friends and family members as well, using a mobile number or email ID. There is no additional charge for such remittances.

2. Review of Literature:

Digital wallet appears to be beneficial in generating real revenue stream to all the stakeholders of mobile ecosystem like- customers, banks, mobile-operators, financial institutions. The research conducted by Rathore H. M. (2016), explains many benefits to different parties simultaneously. For Consumers, it provides benefits of anytime payment, balance and transaction check options, security, reduced transaction time, offers & discounts, and convenience. On the other hand, banks get benefit in the form of Additional Income in form of transaction cost, Enhanced Brand Image, extended Value-Added services to customers.

A. Perceived Value:

Perceived value is defined as the trade-off between what customers receive, such as quality, benefits, and utilities, and what they sacrifice, such as price, opportunity cost, transaction cost, time, and efforts(2000). Amoroso D.L. et.al. (2012) sited in their work that there exists positive relationship between the perceived value and perceived usefulness, attitude, and behavioral intention to use. In case of e-wallet usage, consumers need to pay no or minimal amount of money and in return they get the convenience and flexibility in making payments. Moreover, the gen-next tends to keep less cash and utilize more of these e-wallets as they consider it the smart and easy way of payments. Thus,

H_1: Perceived Value has significant effect on consumer's Adoption Behavior, is formed.

B. Perceived Usefulness:

Davis (1989) defined perceived usefulness as a belief that, using a peculiar system would enhance his/her performance. Davis(1989), Jean-Michel (2008) found that perceived usefulness hassignificant effect on intention to use.Amoroso and Watanabe (2012) cited an outcome form the study of Davis(1989) that the relationship between perceived usefulness and usage is stout and consistent than in case of other relevant variables reported in prior studies. Individuals evaluated the consequences of their behavior in terms of perceived usefulness and based their choice of behavior on the desirability of the usefulness. Digital Payment System should beindependent of time and place, so individuals could perceive it useful. Thus, hypothesis,

H_2: Perceived Usefulness has significant effect on consumer's Adoption Behavior, is formed.

C. Perceived Security:

Zandi M. (2017) in his report mentioned, trust in electronic transactions influences the usage of digital wallet system. With electronic payment modes, consumers now are more defended from fraudulent transactions. Further, merchants feel secure with guaranteed payment, thus, persuades consumers to adopt, who feel more comfortable making purchases when they can pay with a card and with the offers they get in return. Amoroso and Watanabe (2012)examined the factors for consumer adoption of electronic payment systems and found that mostof the respondents were willing toadopt the e-payments with the primary consideration of risk beingassociated with making online payments. So, to quantify the same, hypothesis

H_3: Perceived Security has significant effect on consumer's Adoption Behavior, is formed.

D. Privacy:

Privacy concerns in the usage of e-wallet system relates with collection of information by service provider, unauthorized access to personal information, errors-free entry of personal information in the database and use of information other than the ones the consumer authorized for. This revolves around the term 'Information Privacy' that suggests the rights of the consumers whose information is being shared and can be described as "the claim of individuals, to determine for themselves when, how, and to what extent information about them is communicated to others". Previous studies show the positive association with intention to use and attitude.

H_4: Privacy has significant effect on consumer's Adoption Behavior, is formed.

E. Attractiveness:

Amoroso D.L. et.al. (2012) cited in his work that "Attractiveness of alternatives is defined as the extent to which [customers perceive] alternatives are available in the marketplace. In the context of mobile wallet, perceptions regarding reputation, image and service quality determine the attractiveness of alternatives. Because mobile payment solutions are still in there. Au and Zafar (2008) have proposed that mobile payment adoption is affected by the alternative, thus, giving positive relationship among the presence of alternative technologies. Park and Hwang (2004) however, found a negative relationship between attractiveness of alternatives and behavioral intention to use. Thus, hypothesis

H_5: Attractiveness has significant effect on consumer's Adoption Behavior, is formed.

F. Intention to Use:

Dastan I. &Gurler C. (2016) in their study suggested that intention to use has positive effect on consumer adoption. Rigopoulos &Askounis(2007)in their study concluded that intention to use is being positively associated with consumers' adaptation behavior. Another research by Luo, Zhang & Shim (2010)displayed that behavioral intention to use was negatively related to perceived risk.

H_6: Intention to use has significant effect on consumer's Adoption Behavior, is formed.

3. Research Methodology:

A. Sample Selection & Measures:

The study was conducted at Raipur, the capital city of the Chhattisgarh State in Central India. The sample population consists of the walk-in consumers coming out of any outlets in a popular shopping mall of the city. A pre-tested structured questionnaire was distributed among 115 respondents, chosen based on judgement, out of which 100 comebacks were completed in all facets and consequently, considered for the study (Table 1). The questionnaire covered various sections seeking demographic info and opinion of the respondents concerning various factors influencing and their impact on consumer's preference. The responses were measured on 5-Point Likert Scale, where, 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neutral*, 4 = *Agree* and 5 = *Strongly Agree*.

B. Research Design:

To fulfil the research objective, the *Descriptive Research* has been directed. The major predictor variables (causes) well-thought-out for this study are – *Economic Value, Perceived Usefulness, Perceived Security, Privacy, Technical Know-How, Intention to Use*. The effect of these factors was measured on the criterion variable (effect) *consumer adaptation.*

C. Data Analysis:

For testing reliability, *Chronbach's Alpha coefficient* is used as the measurement value to check whether the data is near to normal distribution or not. *Correlation Analysis* was conducted to measure the strength and linear relationship among the variables. *Factor Analysis* through Principal Component Method has been applied to identify the loading and reloading of components. Finally, the *Linear Regression Analysis* is used to determine how well the entire bundle of predictor predicts the outcome.

4. Data Analysis & Interpretation:

The SPSS Statistical Tool (Ver. 20) was utilized for data analysis. Various techniques were applied such as scale reliability analysis, descriptive statistics, factor analysis, regression analysis, etc. and the results obtained are discussed below.

A. Demographic Profile of Respondents:

As presented in the demographic profile of respondents (Table 1), the bulk of the respondents belong to the age group 26 to 40 years (55.2%). 86.3 % of the participants were the male and they majorly belong to the service class (49.4%). The respondents were having the income level between 1.5 lakhs to 3.0 lakhs (49.8%).

Table 1: Demographic Profile of Respondents

Item	Description	Frequency	Per Cent (%)
Age (in Years)	Below 25	14	5.8
	26 to 40	133	55.2
	41 to 55	79	32.8
	55 and above	15	6.2
	Total	241	100
Gender	Male	208	86.3
	Female	33	13.7
	Total	241	100
Occupation	Business Man	79	32.8
	Service Class	119	49.4
	Professional	32	13.3
	Household	11	4.6
	Total	241	100
Annual Income (In Lakhs)	below 1.5	0	0
	1.5 to 3.0	120	49.8
	3.0 to 4.5	98	40.7
	4.5 and above	23	9.5
	Total	241	100

B. Tests for Reliability:

Hair et al. (2010) considered and sustained the fact given by Flynn et al. (1994) that the Chronbach's Alpha value of 0.6 and above shows effective reliability for judging the scale. For the instrument employed in present study, Chronbach's Alpha Coefficient was found to be 0.929 (Table 2), which demonstrates that the constructs of the research instrument are highly reliable.

Table 2: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.928	0.929	21

C. Correlation Analysis:

The correlation analysis was conducted to check the association between the sales performance and the competencies of the salesman and the results obtained shows the positive significant relationship among each other.

Table 3: Correlations

		Y	X_1	X_2	X_3	X_4	X_5	X_6
Pearson Correlation	Y	1						
	X_1	.400**	1					
	X_2	.381**	.348**	1				

	X_3	.467**	.272**	.388**	1			
	X_4	.354**	.261**	.390**	.320**	1		
	X_5	.440**	.389**	.362**	.340**	.247**	1	
	X_6	.396**	.430**	.338**	.258**	.292**	.350**	1
**. Correlation is significant at the 0.01 level (2-tailed).								

D. Factor Analysis:

The Factor Analysis (through principal component analysis) outcomes on the rotated component matrix show that all the components are valid, as they have been properly loaded on identified factors and thus, reflect that all the factors and their components are valid and can be tested further.

Table 4: Factor Analysis

Rotated Component Matrix

	Component						
	1	2	3	4	5	6	7
Y_1							0.797
Y_2							0.825
Y_3							0.778
X_{11}	0.872						
X_{12}	0.878						
X_{13}	0.852						
X_{21}					0.811		
X_{22}					0.856		
X_{23}					0.864		
X_{31}			0.827				
X_{32}			0.863				
X_{33}			0.874				
X_{41}						0.812	
X_{42}						0.872	
X_{43}						0.868	
X_{51}				0.828			
X_{52}				0.857			
X_{53}				0.835			
X_{61}		0.864					
X_{62}		0.869					
X_{63}		0.881					

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

E. Regression Analysis:

This analysis was conducted stepwise to study the most contributory explanatory factor among the competencies that best predict salesman's sales performance. All the obtained models are statistically significant at 5% level of significance, out of which the model containing the factors X1 (*Economic Value*), X3 (*Perceived Security*), X4 (*Privacy*), X5

(*Attractiveness*) & X6 (*Intention to Use*) found to be the best fit (Table 6) in the study. All the factors successfully established statistical relationship with consumer's preference.

The model summary (Table 4) explains the coefficient of determination value ($R^2 = 0.384$) shows that the factors were a good fit for this statistical model and around 39% of variance can be explained by this relationship.

Table 5: Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.619	0.384	0.371	0.729	2.02
Predictors: (Constant), X_3, X_5, X_6, X_1, X_4					
Dependent Variable: Y					

Durbin–Watson test (Table 4) was performed to check the model autocorrelation. The value obtained **(*d = 2.020*)** suggests that there is no autocorrelation problem in the study model as the obtained value is nearly equal to the ideal value of **2** (Panda S., 2014). The ANOVA for significance test (Table 5) displays the constructive implication of the model with the F-Stats of **29.26**.

Table 6: ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	77.692	5	15.538	29.257	0
	Residual	124.806	235	0.531		
	Total	202.498	240			
Dependent Variable: Y						
Predictors: (Constant), X_3, X_5, X_6, X_1, X_4						

The Coefficients form linear regression analysis (Table 6) shows that the competencies like *Economic Value, Perceived Security, Privacy, Technicality, and intention to use* are showing positive relationship and thus, have significant association and impact on the consumer's preference. Furthermore, the unstandardized and standardized coefficients show the direct relationship with dependent performance. One of the left variable viz. *usefulness* considered in the conceptual model for the current study was found to be unfit and reveal negative association with preference of a consumer.

Table 7: Linear Regression Analysis						
Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.975	0.263		3.708	0
	Per. Security (X_3)	0.216	0.044	0.276	4.852	0
	Tech. know-how (X_5)	0.185	0.054	0.203	3.448	0.001
	Intention to Use (X_6)	0.119	0.046	0.152	2.571	0.011
	Economic Value (X_1)	0.116	0.048	0.146	2.439	0.015
	Privacy (X_4)	0.127	0.053	0.133	2.373	0.018
Dependent Variable: Consumer's Adoption Behaviour (Y)						

5. Hypothesis Testing:

Based on the outcomes form the statistical analysis conducted of predictor and criterion variables, the following hypothesis were accepted or rejected. Thus, the significant associations are established between the variables.

Table 8: Hypothesis Testing

Hypothesis	Statements	Outcome
H_1	Economic Value has Significant Impact on Consumer's Adoption Behaviour	Accepted
H_2	Perceived Usefulness has Significant Impact on Consumer's Adoption Behaviour	Rejected
H_3	Perceived Security has Significant Impact on Consumer's Adoption Behaviour.	Accepted
H_4	Privacy has Significant Impact on Consumer's Adoption Behaviour.	Accepted
H_5	Attractiveness has Significant Impact on Consumer's Adoption Behaviour	Accepted
H_6	Intention to Use has Significant Impact on Consumer's Adoption Behaviour	Accepted

6. Conclusion & Limitations:

Presence of smartphones and other hand-held devices and extensive accessibility of internet had resulted in a remarkable change in our life. It had made life more convenient and every information and processes seems to be on fingertips. With the ease of online shopping and easy payment option through e-wallet, consumers are now experiencing peace of mind. The objective of this study was to find the factors affecting the adoption and Adoption Behavior of digital payment and to find out how these factors affected the Adoption Behavior towards use payment systems.Because of the analyses, it was revealed that Economic Value, Perceived Security, privacy, technical know-how and intention to use have positive effect on the adoption and Adoption Behavior of digital payment system. Moreover, this study did not detect any significant evidence of affect for Perceived Usefulness factor. The study also revealed that respondents are kind of positive and hopeful towards adopting and making payments through e-wallets like Paytm, FreeCharge, MobiKwik, etc. while doing shopping.

The outcomes of the study signify the work of Rathore H. M. (2012). As concluded, 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. Tech-savvy shoppers are increasingly demanding seamless, omni-channel retail experiences and looking for solutions that deliver this.

The analysis outcome also suggest that perceived security is the biggest factor affecting the consumer's Adoption Behavior followed by technical know-how and intention to use. The security becomes the most considered factor because consumer's experienced transparency in the payment process that entrusted their safety. However, the other factors, intention to use again depends on how tech-savvy a person is. Technical know-how is considered significantly important before usage of digital payment system as it is easy for youths to understand and adopt but becomes a Hercules's task for old age consumers.

The generalizability of these results is subject to certain limitations. For instance, in the literature, there are plenty of antecedents of Adoption Behavior towards digital payment, but in this study only few of the factors were analyzed. Other factors affecting Adoption Behavior towards digital payment can be added to future research models. In addition, the effects of several mediator variables could also be analyzed within the scope of those models. The second limitation of this research is that since it would be a challenge to reach the entire population, the judgement sampling method was selected. A sample cannot possibly represent the entire population completely. Consequently, it is not feasible to generalize the results obtained from this research. Another limitation is that, due to limited budget the research was failed to encompass a wider territory.

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