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RESEARCH PAPER

Barriers toward Adoption of Mobile Payment in Pakistan

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ABSTRACT

The main aim of this work is find out main barriers toward adoption of mobile Payment in Pakistan. For this innovative resistance model is adopted with some changes. Adoption intention is used as dependent variable whereas Usage barrier, value barrier, Risk barrier, traditional barrier and image barrier are used as independent variables. The primary data were collected through close-ended questionnaire based on five-point Likert-type scale. Responses of 738 people were taken through online survey with the help of Google document from the cities of Hyderabad and Karachi (Pakistan). Initially to overview the data, respondents profile and descriptive analysis are stated. Furthermore, that normality (Skewness and Kurtosis) and reliability (Cronbach's Alpha) tests are employed to check the quality and usability of data. Test of VIF is conducted to check the problem of multicollinearity. Finally multiple regression analyses are employed. The result of this study showed that there is negative and significance relation of risk barrier and traditional barrier with adoption intention of consumers in Pakistan where as other three barriers usage, value and image found insignificant. Therefore, the service providers and other related authorities must cope with these barriers in order to increase the mobile payment services in Pakistan.

Keywords: Adoption Barriers, Innovative Resistance, Mobile Payment Barriers, Pakistani Smartphone Consumer

Introduction

Modern Technologies have touched and changed all sectors of life. Its changes the entire scenario of globe and provide solutions to impossibilities. Smart phone technology is one of them. Now smart phone is not only considering a device for communication but it seems as all-rounder which can perform multiple tasks including the financial services. The option to employ Smartphone or moveable devices for payments, offers a substitute to cash or credit/debit cards. Mobile payment provides variety of benefits to customer i.e. fast, simple, secure transaction as compare to cash. This innovation in mobile technology opened many doors and permitted more than 3 billion people around the world to access financial services more easily(Jenkins, 2008).The mobile payment transactions are increasing very hastily, if same pace will continue then it is expected that it will cross milestone of $3.4 billion dollars by 2022. Pakistan is developing country but has highest mobile phone users i.e. ranked 8th in the world. According to Pakistan telecommunication authority (PTA) there are 178 million cellular subscribers in Pakistan (83.09% of population). Currently Mobile payment option is given by many banks and other organization in Pakistan but yet, there is major portion of people that prefer traditional ways of payment (Islam, Abid, Salman, & Ahmer, 2020). Cash circulation in the country is stood at 40 % in 2020 as compare to less than 15 % in regional countries like India and Bangladesh. There are many barriers that confine Pakistani consumers to accept such innovative technologies. Very little work has been done yet to explore the doubt of Pakistani consumers about mobile payments.

Literature review

Mobile Payment is defined as by taking advantage of mobile devices and other wireless technology the amount paid for obtaining goods and services to begin, permit, and validate the financial transaction. Theoretically, m-payment is shape of worth transmission, like other payment tools that customers can employ, but distinguished features of mobile devices creates difference. Other researchers like (Grigoleit-Richter, 2017) defined Mobile payment as the amount transfer through mobile network. Basically there are three parties i.e. Customers, merchants, and banks are involve in this process (Ghezzi, Renga, Balocco, & Pescetto, 2010) Remote and proximity are two kinds of mobile payment systems available .There is no direct interaction between customer and trader in the remote mobile payments. In this system, with the help of mobile device and internet connection customer can pay for digital content or online purchase without any physical interference. Where as in proximity mobile payments system, there is some sort of interaction (Shen & Yazdanifard, 2015). Traditional way of in-store payment with cash and credit/debit card can be replaced with proximity mobile payments (Dahlberg, Mallat, Ondrus, & Zmijewska, 2008) In this payment system, there is close interaction needed between sender (customer) and receiver (seller). The amount of transaction is either transferred with QR code or with or Bluetooth or near field communication equipped Smartphone (Slade, Williams, & Dwivedi, 2013). Worldwide, the amount of transaction paid through mobile devices increases dramatically. Many new applications and apps are developed and installed in customer mobile devices in order to search, produce, compare, transfer, and finally paid for financial transaction. Some big companies in smart phones like Samsung, apple and others initiate their own system to amalgamate mobile payment services with their devices (Strogatz, Manganello, Gerstner, Pergolino, & Graham, 2016).

Consumer resistance to innovation

In the world of competition, the firms need innovation in its product and services to stay in market. The achievement or collapse of an innovation based on the level of adoption by consumers (Venkatesh, Morris, Davis, & Davis, 2003) consumer decision to adopt or not to adopt any innovation depend upon series of processes. Initially consumer collects information and knowledge about innovation and then combines it with their priorities, which finally develop their behavior. This behavior is not always positive toward innovation. Some barriers confine consumers to accept innovative technologies. Many theories and models have been given by researchers on resistance. For this study we adopted the model of Innovative Resistance Theory (IRT) given by (Ram & Sheth, 1989). In general, innovative resistance is reaction that is result of rational choice and it shows conflict with consumer's belief structure. There is need arises to study the innovative resistance because most of the new and innovative products fail to win the consumer hearts. For this (Ram & Sheth, 1989) develop model to explicate why consumer are against the innovation. They divided barriers into two parts i.e. functional and psychological barriers. Usage, value and risk barriers are included in function barriers where as traditional and image barriers into psychological barriers. The theoretical model of (Ram & Sheth, 1989) has been tested by many researchers (Kuisma, Laukkanen, & Hiltunen, 2007), (P. Laukkanen, Sinkkonen, & Laukkanen, 2008), (Lian & Yen, 2013) (T. Laukkanen, Sinkkonen, Kivijärvi, & Laukkanen, 2007) , (Dotzauer & Haiss, 2017), (Moorthy et al., 2017)

Usage Barrier

To change the existing habits to latest one, new skills and modifications is required .Particularly in the commencement; innovation required some attempt from consumers which can outcome in innovative resistance (Ram & Sheth, 1989)The condition seems even worse when consumers are satisfied with their existing situation and have no motivation to change. Usage barrier can be explained as resistance faced by innovation due to its usage. (P. Laukkanen et al., 2008) described two parts of usage barrier. I.e. whether new product is

easy or difficult to use and how much current habits are required to change in order to use innovative product.

H1. There is negative association between UB and AI of mobile payment in Pakistan

Value Barrier

When consumer compare innovative product's performance with it price to it substitute (Kuisma et al., 2007) while explaining the advantage of internet banking is not suitable for non users because they thought that obtaining computer and internet cost them more than its benefits. For this reason many new products and services are failed.((T. Laukkanen & Lauronen, 2005) argued that some individuals found that mobile banking services are expensive but at the same time functions like instant balance check may increase their feeling of financial control.

H2. There is negative association between VB and AI of mobile payment in Pakistan

Risk Barrier

Innovative products and services bring some risks. Most of consumers are aware about such risks and resist innovation. (Costanza et al., 1997) pointed that risk is somewhat perception of individual rather than feature of product. (T. Laukkanen & Lauronen, 2005) have viewed that some consumers have fear to make mistakes while conducting their financial affairs through mobile devices. (Ram & Sheth, 1989) explained four types of risk i.e. Physical risks, economic risks, functional risks and social risks. Physical risks can hurt consumer's property, privacy, and individual information. Economic risks associated with incorrect judgment to accept change rather to waiting for improved or low cost version. While Functional risks are associated with consumer's fear that innovative product and service do not function properly. Fear of losing internet connection or fear of hacking is the examples of functional risks. Finally social risks are concerned with the society that what will other people thinks when individual adopt innovative product and service.

H3. There is negative association between RB and AI of mobile payment in Pakistan

Traditional Barrier

The impact of this barrier could be high for those consumers who love their daily routine. The traditional barrier refers to change in daily routine of consumer due to innovation. Some time innovation may contrary to individual's family and social values which may cause barrier (Ram & Sheth, 1989).

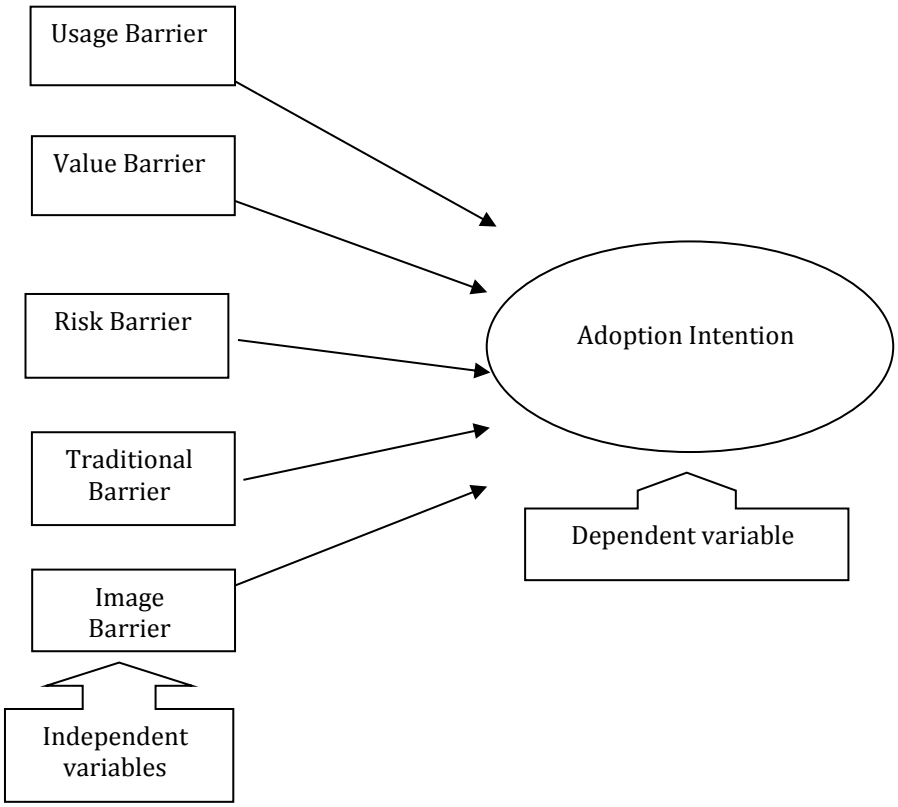
H4. There is negative association between TB and AI of mobile payment in Pakistan.

Image Barrier

Image barrier is associated with negative thoughts of consumer toward innovation and perceived difficulty of usage. If the consumer has negative image of company brand or country then the innovation initiated by them is also perceived negatively by consumer due to their image (Ram & Sheth, 1989). (Fain & Roberts, 1997) discussed that E-banking has negative image due to usage of computer in general and internet in particular.

H5 There is negative association between IB and AI of mobile payment in Pakistan.

Conceptual Framework



Material and Methods

This study employed quantitative and secondary data to find out the main barriers that restrict customers to adopt mobile banking payment. For this, Adoption intention is used as dependent variable whereas UB, VB, RB, TB and IB are used as independent variables.

Sample and data collection

Data were collected through online survey with the help of Google document. Target population was all the people who are smart phone user in the city of Hyderabad and Karachi (Pakistan). For this initially convenient sampling was used and then ask the respondent to further forward it to their references (snow ball sampling). Total 738 responses were received.

Survey instrument and Procedure

The primary data were collected for this study through close-ended questionnaire based on five-point Likert-type scale stating no 1 showing strongly disagree and no 5 strongly agree. These questionnaires were adopted from the (Dotzauer & Haiss, 2017) with little bit modification. The questionnaire comprised of 20 items. 4 items each for UB, VB, and RB, where as 3 items each for TB and IB and finally 2 items for AI.

Data Analysis and Results

Initially to overview the data, respondents profile and descriptive analysis are stated. Furthermore, that normality and reliability (Cronbach's alpha) tests are employed to check the quality and usability of data. Finally multiple regression analyses are employed.

Respondent's Profile

Table 1 showed demographic & smart-phone usage information of respondent's of this study. It showed that 450 (60.98%) Male and 288 (39.02%) female participated in this study. Most of the respondent belong to less than 25 and 25 to 35 age groups to i.e. 289(39.16%) and 280 (37.94%) respectively. Majority of respondents are Post graduate 301(40.79%) followed by graduates 221 (29.95%) and less than graduates 184 (24.93%).The teachers and students are leading respondents with 194(26.29%) and 177 (23.98%). When the question asked about how much hours the respondents use smart-phone? 51.90 % answered more than 4 hours chased by 24.93 % answered 4 hours. When the question ask have they ever paid with their smart phone? Expectedly 473(64.09%) said **"No"** whereas 265 (35.91%) respondents said **"Yes".**

Table 1
Demographic & smart-phone usage information of respondent's

Demographic variable		Frequency	Percentage
Gender	Male	450	60.98%
	Female	288	39.02%
	Total	**738**	**100%**
Age	less than 25	289	39.16%
	25 to 35	280	37.94%
	35 to 45	125	16.94%
	More than 45	44	5.96%
	Total	**738**	**100%**
Qualification	Less than Graduate	184	24.93%
	Graduate	221	29.95%
	Post Graduate	301	40.79%
	Doctorate	32	4.34%
	Total	**738**	**100%**
Occupation	Student	177	23.98%
	teacher	194	26.29%
	Doctor/Engineer	118	15.99%
	Banker	88	11.92%
	Management Related Jobs	95	12.87%
	others	66	8.94%
	Total	**738**	**100%**
Smart-Phone Usage every day	Up to 2 hours	147	19.92%
	4 hours	184	24.93%
	More than 4 hours	383	51.90%
	Rarely	24	3.25%
	Total	**738**	**100%**
Have you ever paid with your smart phone	Yes	265	35.91%
	No	473	64.09%
	Total	**738**	**100%**

Descriptive Statistics

The table 2 showed the mean and standard deviation of all constraints of dependent and independent variables. While analyzing the means, it should be keep in mind that here low means indicating strong barrier as per Likert-scale applied. Taken as a whole, the mean varies from 2.18 (RB3) and 3.89 (UB3). When we closely observed the mean of given constraint it has been noted that UB has highest mean ranging from 3.42 to 3.89 followed by IB ranging from 3.44 to 3.76. These values showed that UB and IB are lower barriers as compare to others. Whereas mean values' of other variables have wide range i.e. TB (2.23 to 3.17), RB (2.18 to 2.76), VB (2.38 t0 2.97), AI (2.60 to 2.93). These values indicate that question of same barriers are answered with different tendencies. The values' of standard deviation shows that how much data is deviated from mean. UB1 (1.798), VB3 (1.791), IB3 (1.602) have highest deviation values.

Table 2
Descriptive Statistics

	N	Mean	Standard Deviation
AI1	738	2.6	0.648
AI2	738	2.93	0.766
IB1	738	3.44	0.783
IB2	738	3.76	1.004
IB3	738	3.51	1.602
TB1	738	3.17	1.353
TB2	738	2.61	1.373
TB3	738	2.23	1.432
RB1	738	2.39	1.265
RB2	738	2.56	0.969
RB3	738	2.18	1.356
RB4	738	2.76	0.662
VB1	738	2.38	0.789
VB2	738	2.52	1.338
VB3	738	2.45	1.791
VB4	738	2.97	1.112
UB1	738	3.78	1.798
UB2	738	3.66	1.679
UB3	738	3.89	0.635
UB4	738	3.42	1.004

Normality of Data

To check the normality of data skewness and kurtosis are employed. The guideline for skewness and kurtosis is that skewness indices more than 3.0 kurtosis index more than 10.0 may cause risk. The result of table 3 showed that all values of skewness and kurtosis are in acceptable range. In this regard it can be said that model is good fit (Chou & Bentler, 1995)

Table 3
Skewness and Kurtosis

	Statistics					
	Adoption Intention	**Usage Barrier**	**Value Barrier**	**Risk Barrier**	**Traditional Barrier**	**Image Barrier**
Skewness	.693	.807	.162	.751	.132	.185
Kurtosis	.468	.251	-.218	.384	.040	-.215

Reliability Statistics

To check the reliability of data Cronbach's Alpha is used. The guideline is that Cronbach's Alpha value should be 0.75 or greater (Ling, Fern, Boon, & Huat, 2015).Table 4 showed the combine Cronbach's value of all 20 items i.e. 0.882. This showed that high internal consistency is observed among all variables. All individual values of Cronbach's Alpha are also higher than 0.75 that are also in acceptable range.

Table 4
Reliability Statistics

	Cronbach's Alpha	N of Items
Combine	0.882	20
AI	0.771	2
UB	0.803	4
VB	0.861	4
RB	0.894	4
TB	0.901	3
IB	0.793	3

Multiple Regression

Table 5 showed model summary that indicated the good fit model. Higher the value of R2 better the model would be. The value of R2 is 0.728 in table which reflects that 72.8% of the total variation of Adoption Intention can be explained by the 5 barriers i.e. UB, VB, RB,TB and IB which is good (Pallant, 2005)

Table 5
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.845[a]	.728	.673	.59250

a. Predictors: (Constant), IB, VB, UB, RB, TB

Test of Multicollinearity

To check the multicollinearity problem variance inflation factor (VIF) is used. If the Value of VIF is less than 10 it is acceptable otherwise it is assumed that there is problem of multicollinearity. Table.6 showed values of VIF. All VIFs are within the accepted range.

Coefficients of Regression

Table.6 showed coefficients of regression. The result showed that RB (p=0.000 <0.05) and TB (p=0.000 <0.05) are statistically significant and other all independent variables i.e. UB, VB and IB are statistically non significant. B-coefficient showed that RB (-.629) has strongest and negative influence on AI chased by TB (-.469) whereas other variables have not any significant influence on AI.

Table 6
Coefficients[a]

Model	Unstandardized Coefficients		Sig.	Collinearity Statistics	
	B	Std. Error		Tolerance	VIF
(Constant)	3.950	.404	.000		
UB	-.118	.060	.064	.782	1.279
VB	-.079	.092	.389	.942	1.062
RB	-.629	.077	.000	.858	1.165
TB	-.469	.079	.000	.751	1.331

IB	-.124	.078	.112	.816	1.226

a. Dependent Variable: AI

Table 7
Hypotheses Decision

No	Hypotheses	P-Value	Significant/Non-Significant	Accepted/Rejected
H1	There is negative association between UB and AI of mobile payment in Pakistan	0.064	Non-Significant	Rejected
H2	There is negative association between VB and AI of mobile payment in Pakistan	0.389	Non-Significant	Rejected
H3	There is negative association between RB and AI of mobile payment in Pakistan.	0.000	Significant	Accepted
H4	There is negative association between TB and AI of mobile payment in Pakistan.	0.000	Significant	Accepted
H5	There is negative association between IB and AI of mobile payment in Pakistan.	0.112	Non-Significant	Rejected

Discussion

In this Paper we have tested five barriers adopted from (Ram & Sheth, 1989) model in the context of mobile payment. For this, here we discussed result of each barrier in detail.

Usage Barrier

The result of UB showed that there is negative but non- significance relation with adoption intention of consumers in Pakistan. It means that complexity and inconvenience in service design, and the effort of acquiring new skills in context to mobile payment usage do not hamper Pakistani consumer. The result of this study is in line with (Chemingui, 2013); (Kuisma et al., 2007); (Lian & Yen, 2013), (Dotzauer & Haiss, 2017)

Value Barrier

The Result of VB showed that there is negative and non-significance relation with adoption intention of consumers in Pakistan. It means that value barrier is not a hurdle and Pakistani consumers are aware about the value addition of mobile payment and feel ease to make payments through it. The result of this paper is contradiction with prior studies (Antioco & Kleijnen, 2010); (Kuisma et al., 2007), (T. Laukkanen et al., 2007), (T. Laukkanen, 2016); (Lian & Yen, 2013),(Dotzauer & Haiss, 2017)

Risk Barrier

The result of RB showed that there is strongest, negative and significance relation with adoption intention of consumers in Pakistan. It means that Pakistani consumers have fear of losing internet connection, low battery, abusing, in securing of personal data, and fraud. For this, services provider must focus this barriers and ensure the security aspect of mobile payment in order to win the trust of consumer in Pakistan. The result is in line with

(Khodawandi, Pousttchi, & Wiedemann, 2003) (Linck, Pousttchi, & Wiedemann, 2006) (Pinchot, Mishra, Paullet, & Kohun, 2016), (Dotzauer & Haiss, 2017)

Traditional Barrier

The result of TB showed that it is second strongest, negative and significance barrier. It means that Pakistani consumer like to pay through traditional/ routine base method like cash and they feel resistance in adopting new payment methods. The result in line with (Antioco & Kleijnen, 2010), (Chemingui, 2013),(T. Laukkanen, 2016); (Lian & Yen, 2013) (Dotzauer & Haiss, 2017). State bank of Pakistan (SBP) already highlighted issue that there is 40 % cash circulation in country as compare to 15 % in regional countries. This is very serious and challenging barrier which need to be solved. For this, the SBP and service providers must start the awareness and promotion campaigns through seminars, electronic/social media and others to motivate people to adopt this innovative technology.

Image Barrier

The result of IB showed that there is negative but non-significance relation with adoption intention. It means that it is also not a barrier in Pakistan. The result is in line with (Chemingui, 2013), (Lian & Yen, 2013),(Dotzauer & Haiss, 2017)

Conclusion

Technology has completely changed way of living. It made complex things easier than ever. Mobile payment makes payment easier. Mobile Payment services are increasing worldwide but the adoption ratio in Pakistan is not remarkable, even though more than 83 % of country population is using mobile phones. Therefore, question arises what are the main barriers restrict consumers to adopt mobile payment services in Pakistan. For this, the innovative resistance model of Ram and Sheth 1989 was adopted. Five Barriers i.e. UB, VB, RB, TB, IB were tested. The result of this paper showed that RB and TB are main barriers which restrict Pakistani consumers to adopt the mobile payment. It means that Pakistani consumers have fear of security and fraud and they prefer traditional mode of payment like cash. The other three barriers found insignificant. It is therefore, need of the time to solve risk and traditional barrier on priority basis to increase the mobile payment in Pakistan

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