

Mobile Banking Adoption: Prospects of Financial Behaviourism

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Abstract

Technology and digitization is given tremendous publicity in recent years. Banks seem to be really concerned with systems providing better services and increasing their customers. Nevertheless, the success of mobile banking depends on the degree to which customers are aware of its perceived attributes. In fact, in Pakistan, mobile banking adoption is low and rare studies have investigated matters relating mobile banking adoption. This study explores the links of awareness with its antecedents (i.e. communication channels) and outcomes (i.e. core predictors and consumers' behavioural intentions towards adoption of mobile banking). The data for this study were gathered through a survey of 169 bank account holders in Pakistan. Results suggest that communication channels have a positive impact on awareness, which, in turn, affect core predictors (i.e. attitude, trust and performance expectancy) and appear to have no effect on perceived risk. Attitude, trust and performance expectancy are significantly and positively associated with behavioural intentions to adopt mobile banking while perceived risk was found to have no significant effect. On the practical front, findings of the study provide guidelines for banks to focus on awareness towards key factors affecting adoption in order to improve operational competencies and fineness of services for grasping more customers.

Keywords: Digitization; Communication channels; Awareness; core predictors; behavioural intentions.

Introduction

Technological advancement and digitization challenged the providers of financial services, altered the very nature of these services and transaction modes of financial instruments (Singh & Srivastava, 2018), (Suoranta, & Mattila 2004). Communication technologies are expanding at rapid rate with considerable impact on every aspect of human life. For the diffusion of new financial services, communication channels play a critical role (Amin, 2009), (Dara, 2019), (Zolait, & Sulaiman, 2009). Compatible with Innovation diffusion theory (Rogers, 2003), the diffusion of an innovation depends upon the speed of information transmission via various communication channels that exhibit the quality to reach a large audience promptly to spread awareness. The means for communication include external influences and interpersonal networks (Rogers, 2003). It has been found via digitization and merging of communication technologies that the major obstacle towards adoption of an innovation such as mobile banking or online banking is awareness (Laforet, & Li, 2005), (Singh, & Srivastava, 2020). Communication channels spread awareness by providing information and guidance, which has a considerable impact on perceived functional usability of an innovation (Laukkanen, & Kiviniemi, 2010). Lack of awareness about real measures for judgement is a major constraint (Kumar & Ravindran, 2012) and for the diffusion of mobile

banking, awareness is utmost important (Luo, et al,2010), (Sharma & Sharma,2019). Despite the quick increase in wireless commercial services, the usage of mobile banking services is much lower than expected (Cruz, P. et al 2010) and is still underused (Huili, & Zhong, 2011), and the market for mobile banking remains very small when compared to the whole banking operations (Alkhowaiter,2020), (Laukkanen et al 2007),(Luarn, & Lin,2005), (Yang,2009). Similarly regardless of the arguments stated above, only few studies have explored the way communication channels create awareness towards consumer's perceptions of mobile banking adoption.

With regard to various endogenous variables, prior studies (Akturan, & Tezcan,2012) ; (Chen,2013), (Tran & Corner,2016) (Yu,2012), have focused on investigating consumer's intentions to use mobile banking in order to discover core factors affecting consumer's decisions towards adoption or continuous usage. Recent empirical studies have identified that awareness reduces perceived risk, (Hanafizadeh, & Khedmatgozar, 2012). ; (Obaid, 2021). While other studies (Ali, et al 2022); (Mohammadi, 2015), found that awareness improves perceived ease of use and usefulness of using mobile banking. (Agarwal & Prasad, 1998), found that communication channels facilitate awareness which is a vital prerequisite to develop positive perceptions towards determinants, which in turn lead towards adoption of an innovation. In this way there is a research requisite to develop more association between awareness spread through communication channels and factors affecting mobile banking adoption (Sharma et al, 2022). Accordingly, the present research complements and extends the existing research by investigating, examining and exploring the relationship between awareness and four key predictors of intention to use mobile banking namely perceived risk, attitude, initial trust and performance expectancy, identified as core predictors of intention to use mobile banking by recent weight and meta-analytical studies (Baptista, & Oliveira, 2016).

Banks are recommended to focus on developing essential competencies that help to create enduring mobile banking adoption (Baptista, & Oliveira,2016); (Lin,2011); (Zhou et al 2010). Although numerous empirical studies have concluded positive association between factors affecting mobile banking adoption and behavioural intentions to adopt mobile banking (Zhou, et al 2010), still others' offer inclusive and inconsistent results (Alkhowaiter,2020); (Al-Jabri, & Sohail,2012); (Gu, et al 2009); (Wu, & Wang, 2005). Moreover, there are few studies that have simultaneously explored the effect of awareness spread via various communication channels on core predictors and behavioural intentions to adopt mobile banking. With regard to the above argument, this study is an attempt to address the dire need of obtaining a holistic understanding of relationship between communication channels, awareness, core predictors and mobile banking adoption.

Subsequently the present study adds to the mobile banking adoption literature by responding to the following three interrelated research questions. (1) How well can communication channels increase awareness? (2) To what extent does awareness associate with predictors of mobile banking adoption? (3) To what extent does these core predictors affect consumers' behavioural intentions towards mobile banking adoption? The answer to the above mentioned questions will definitely contribute to the existing research by investigating the role of communication channels on awareness towards core predictors of mobile banking adoption. Furthermore this study will also contribute to the literature on Innovation diffusion theory (Bharadwaj, & Deka, 2021); (Rogers, 2003). Finally, through investigating core determinants, this research will enable us to identify the potentially diverse effects that awareness can conceive.

Literature Review And Hypothesis

Innovation diffusion theory, Communication channels and awareness

Innovation refers to an idea perceived as new, while diffusion of innovation refers to the way through which new ideas are communicated to target audience (Gottwald & Goodman,2012); (Zhu, et al 2022). Diffusion of innovation theory suggests that communication channels create awareness, which in turn diffuse an innovation and have a considerable impact on innovation's rate of adoption (Rogers,2003) Further, concluded that this theory views interpersonal channel more effective in urging individuals to accept new ideas as it can reach almost all people in a social system. Literature describes various categorizations for primary communication channels that are directly involved and essential for creating awareness including, external influences in form of mass media, secondly, interpersonal networks like word of mouth (Rogers, 2003) and finally, online word of mouth via social media Cheung, (Lee et al 2008); (Shankar, et al 2020), (Tran & Corner, 2016).

H1: Communication channels have a positive impact on awareness

Awareness and core predictors

Awareness about an innovation is essential in early stages of adoption (Owusu, et al 2021), (Rogers, 2003) Lack of awareness is the main obstacle to non-adoption (Sathye, 1999); (Singh, & Srivastava, 2020). Awareness reduces perceived risk which in turn reduces internet banking adoption (Hanafizadeh, et al, 2012). Rapid challenges in financial service environment have increased competition in financial sector resulting in enhanced interest of service providers in understanding consumer's behaviour pattern (Suoranta & Mattila, 2004).The literature suggests that perceived risk, attitude, initial trust and performance expectancy are the basic and most viable determinants which can be investigated in case of mobile banking adoption (Baptista & Oliveira, 2016).

H2a: Awareness have a negative impact on perceived risk

H2b: Awareness have a positive impact on attitude

H2c: Awareness have a positive impact on initial trust

H2d: Awareness have a positive impact on performance expectancy

Core predictors and mobile banking adoption

By facilitating customers, banks can accomplish a high rate of mobile banking adoption (Abbas, et al 2018). According to (Baptista and Oliveira, 2016), mobile banking adoption is a reflection of core predictors or operational elements that are related to reduced risk, positive attitude, initial trust and performance expectancy. At present, it is a conventional wisdom in banking industry that provision of better facilities enhances mobile banking adoption rate and traditional banking is in danger of becoming a financial dinosaur as more people turn to smartphones to conduct banking transactions.; (Mensah et al, 2020).

Numerous studies have empirically linked core predictors to mobile banking adoption (Farah et al, 2018). These studies suggest that core predictors are the factors that increase or reduce adoption rate. Specifically with regard to risk, (Laukkanen, 2017).; (Olaleye, et al, 2022), identified perceived risk as an important predictor of mobile banking adoption. With regard to attitude, (Alalwan, et al 2016) identified a positive relationship between attitude and mobile banking adoption. While considering trust, (Abbas et al, 2018), found that improvement in trust yield higher level of mobile banking adoption. (Abbas et al, 2018) concluded that performance expectancy has a positive association with mobile banking adoption.

H3a: Perceived risk have a negative impact on behavioural intentions to adopt mobile banking

H3b: Attitude have a positive impact on behavioural intentions to adopt mobile banking

H3c: Initial trust have a positive impact on behavioural intentions to adopt mobile banking

H3d: Performance expectancy have a positive impact on behavioural intentions to adopt mobile banking

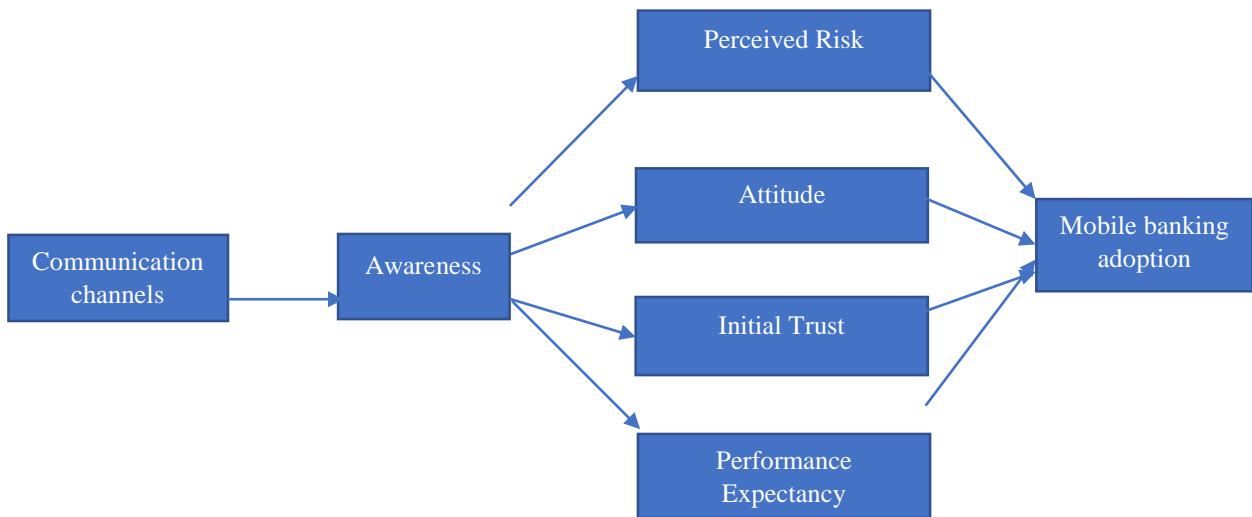


Figure 1: Research Model

Research Methodology

Sampling and data collection

Banking industry of Pakistan is the main focus of this study that constitutes a total of 31 banks, of which five are public sector, four are foreign while there are twenty two local private banks. Theoretical model was tested using a survey on awareness towards core factors affecting mobile banking adoption due to many reasons. First, mobile banking is one of the recent mobile technological wonders. It is one of the latest delivery channels established by banks (Jebarajakirthy & Shankar 2021); (Safeena et al, 2012), that has adds mobility to service consumption (Oliveira et al., 2014). Secondly, the demand for mobile banking services have been increased due to the expanded use of mobile phones devices, encouraging

many more banks, microfinance institutions etc. to offer this innovative service in order to extend their client reach (Shaikh, 2013). Additionally, despite being beneficial, the use of smart phones to conduct banking transactions or to access desired financial information is not as common and widespread as might be expected; (Purohit & Arora 2021); (Shih et al,2010), and approximately half of mobile subscribers remain unbanked (International Telecommunication union, 2011). Juniper Research (2018) revealed, that mobile banking is growing 14% y-o-y, compared to 6% for online banking and over two billion people are expected to use mobile banking via mobile devices globally by the end of 2018. Juniper expects that the number global mobile banking users will overtake online users in 2018. For the above mentioned reasons, banking industry offers a good example of how communication channels create awareness towards core predictors that will increase mobile banking adoption, which is the rationale for this study.

Data for the research was collected through a survey sent to 384 bank account holders. Sample size for this research was identified through formula proposed by (Krej & Morgan 1970). Geographically, survey respondents comprise bank account holders residing in twin cities Rawalpindi and Islamabad of Pakistan. Our respondents typically held a bank account, majority were well educated, having bank account from several years, using banking services many times a month for diverse purposes. Various methods were applied to increase response rate (Zahl-Thanem et al, 2021); (Zhao, et al , 2006). To let respondents know about the purpose of conducting this research and subsequently the contributions that it may make every questionnaire was accompanied with a cover letter. The letter guaranteed complete privacy of respondents. To encourage completion, return of the questionnaires and to clear any potentially arisen question follow up calls were made (Zhao et al, 2006). A total of 169 complete questionnaires were returned, that indicated a valid response rate of 44.01%. Respondents' profile is reported in table 1.

Non Response bias and common method bias

T-test was conducted to examine non-response bias (Armstrong & Overton 1977); (Vogel & Jacobsen 2021).

Table 1: Demographics of respondents

Demographic factors		Frequency	Percentage
1. Age	18 – 23 years	26	15.4
	24 – 29 years	108	63.9
	30 – 35 years	21	12.4
	36 years and above	14	8.3
2. Gender	Male	92	54.5
	Female	77	45.5
3. Educational Background	Matriculation	4	2.4
	Intermediate	21	12.4
	Graduate	103	60.9
	Postgraduate	35	20.7
	Any other	6	3.6

Results specify no significant difference, indicating that non response bias is not a major concern of this research. As data was obtained using self-reported questionnaire, there is a possibility for occurrence of common method bias (Podsakoff, et al 2003). Confirmatory factor analysis (CFA) was performed to investigate whether this bias affected the data. Here each set of measurement items were loaded on their common latent factor and also onto common factor. The single factor model explained only 33.07% of the variance in dataset, which is not the majority of total variance. The fit statistics for single factor model are χ^2/df (2107.106/350) = 6.020; RMSEA = 0.173; CFI = 0.445; IFI = 0.450; SRMR = 0.1281. In addition chi-square test exhibited for seven factor model converged well as its fit statistics were better than those of single factor one χ^2/df (639.759/341) = 1.876; RMSEA = 0.072; CFI = 0.906; IFI = 0.907; SRMR = 0.0892. Thus it was confirmed that common method bias was not prevalent, and that the discriminant validity of the seven-factor model was high.

Table 2: Information related Mobile banking of bank account holders

Bank details	Frequency	Percentage
1. Time spent being an account holder		
Less than 1 year	14	8.2
1 – 3 years	52	30.7
4 – 6 years	54	31.9
7 – 9 years	33	19.5
10 years and above	16	9.4
2. Frequency of using mobile banking		
Daily	37	21.8
Once a week	47	27.8
Once a month	20	11.8
Many times, a month	60	35.5
Once a year	5	2.9
3. Purpose of using mobile banking		
Pay bills	32	18.9
Check account balance	43	25.4
Transfer funds	38	22.5
Cash withdrawal	34	20.1
Cash deposit	22	13.0

Measures and Questionnaire design

Literature was surveyed to identify valid and authentic measures for communication channels (Ratten, 2013); (Tran & Corner,2016), (Zolait & Sulaiman, 2009),awareness (Sathye ,1999) ; (Pikkarainen, 2004). (Al-Somali et al, 2009),the four core predictors including Perceived risk (Akturan & Tezcan, 2012).

Table 3: Construct reliability and validity analysis

Construct	Factors loading (t-values)	Reliability and Validity
Communication channels (Rattan, 2011; Zohait and sulaiman, 2009; Tran and Corner, 2016)		$\alpha=0.882$; AVE=0.646; CR= 0.883
Mass media recommend mobile banking for managing accounts.	0.856 (-)	
Social media platforms report mobile banking a good way to manage bank account.	0.859 (13.06)	
Peers/colleagues suggest mobile banking usage.	0.747 (10.89)	
Advertisements regarding mobile banking on media are interesting and appealing.	0.747 (11.35)	
Awareness (Al-Somali et al., 2009);(Pikkarainen et al., 2004); (Sathye,1999).)		$\alpha =0.771$; AVE=0.486; CR= 0.786
Awareness about services of mobile banking	0.781 (-)	
Information about advantages of mobile banking	0.831 (8.69)	
Knowledge about ways to open account and using mobile banking	0.558 (6.642)	
Understanding about mobile banking	0.578 (6.885)	
Perceived risk (Akturan & Tezcan,2012)		$\alpha=0.842$; AVE=0.57; CR= 0.844
Security concern.	0.740 (-)	
Fear of hacking/ misuse of personal information.	0.811 (9.42)	
Fear of loss of money.	0.741 (8.78)	
Fear of unauthorized access.	0.739 (8.77)	
Attitude (Cheng et al., 2006); (Wu and Chen, 2005)		$\alpha=0.843$; AVE=0.57; CR= 0.84
Using mobile banking will save my time	0.791 (-)	
Using mobile banking will be secure	0.758 (9.44)	
Using mobile banking will save me money	0.756 (9.41)	
Using mobile banking will be good for me	0.724 (9.03)	
Trust (Gefen et al., 2003)		$\alpha=0.937$; AVE=0.79; CR= 0.939
Trustworthy	0.992 (-)	
Safe and sound	0.815 (17.86)	
Reliable	0.997 (76.50)	
Goodwill	0.737 (13.96)	
Performance expectancy (Foon and Fah, 2011);(Luarn, & Lin 2005).; (Venkatesh and Zhang, 2010)		$\alpha=0.852$; AVE=0.59; CR= 0.85
Improve performance	0.818 (-)	
Save time	0.825 (10.89)	
Anywhere access	0.750 (9.95)	
Useful	0.679 (8.89)	
Mobile banking adoption (Luarn, & Lin,2005).; (Venkatesh et al, 2003); (Wang et al., 2003)		$\alpha=0.869$; AVE=0.67; CR= 0.865
Intention to manage accounts	0.884 (-)	
Intention of mobile banking usage rather than any alternative	0.887 (13.82)	
Intention to use it regularly in future	0.670 (9.66)	
Intend to make money transfer via mobile banking	0.680 (9.87)	

Attitude (Cheng et al, 2006); (Wu & Chen, 2005), Trust and performance expectancy (Foon & Fah,2011); (Venkatesh, & Zhang 2010), and Behavioural intentions to adopt mobile banking (Luarn & Lin, 2005).; (Wang et al 2003).

The measures used and their references are elaborated in table 2. All items pertaining to variables were adopted and measured on a five point Likert scale ranging from strongly disagree to strongly agree.

Table 4: Descriptive statistics

	Mean	S.D.	1	2	3	4	5	6	7
Communication channels	5.36	1.12	1						
Awareness	5.39	0.96	.479**	1					
Perceived risk	4.09	0.67	-.099	-.156*	1				
Attitude	4.98	1.14	.546**	.364**	.001	1			
Trust	4.72	1.34	.300**	.416**	-.027	.604**	1		
Performance expectancy	4.96	1.06	.553**	.454**	-.073	.602**	.470**	1	
Mobile banking adoption	4.68	1.33	.318**	.516**	-.045	.413**	.473**	.395**	1

Data Analysis And Results

We used structural equation model (SEM) to test hypothetical relationships in our conceptual framework. AMOS 21 was used and the results extracted for structural model are reported in table 5. The overall fit indices of structural model (χ^2/df (639.759/341) = 1.876; RMSEA = 0.072; CFI = 0.906; IFI = 0.907; SRMR = 0.0892) are good (Kline, 2005). (Hair et al ,2006) .

Table 5 shows significant positive paths from communication channels to awareness and from awareness to attitude, trust and performance expectancy which supports H1, H2b, H2c, H2d, while results for perceived risk i.e. H2a are not significant.

The structural model also show that attitude, trust and performance expectancy are significantly and positively associated with behavioural intentions to adopt mobile banking. Hence H3b, H3c and H3d are supported.

On the other hand, there is no statistically significant relationship between perceived risk and behavioural intentions to adopt mobile banking as depicted in table 5. Hence, there is not sufficient evidence to support H3a.

Table 5: Results of hypothesis 1-3 tests using SEM

Structural paths	Standardized coefficient	t-value	Hypothesis test
Communication channels → Awareness (H1)	0.702	7.465	Supported
Awareness → Perceived risk (H2a)	-0.161	-1.753	Not supported
Awareness → Attitude (H2b)	0.694	6.852	supported
Awareness → Trust (H2c)	0.532	5.731	supported
Awareness → Performance expectancy (H2d)	0.753	7.616	supported
Perceived risk → Mobile banking adoption (H3a)	-0.068	-0.878	Not supported
Attitude → Mobile banking adoption (H3b)	0.194	2.000	supported
Trust → Mobile banking adoption (H3c)	0.221	2.700	supported
Performance expectancy → Mobile banking adoption (H3d)	0.259	2.619	supported

Model fit indices: χ^2/df (639.759/341) = 1.876; RMSEA = 0.072; CFI = 0.906; IFI = 0.907; SRMR = 0.0892.

Discussion And Implication

This research makes numerous contributions to the literature on factors reducing or increasing mobile banking adoption. This study associates awareness via communication channel with core predictors and mobile banking adoption in a context of developing country, specifically in banking industry. This study also recognizes the core predictors affecting that prompt awareness. Based on a survey results, it is suggested that communication channels have a significant effect on awareness, which, in turn, affect core predictors (i.e. attitude, trust and performance expectancy) and these core predictors were found to have a significant impact on mobile banking adoption. But awareness was found to have no significant effect on perceived risk which, in turn, has no effect on mobile banking adoption. These contributions are quiet significant and are discussed in the following sections.

Theoretical Implication

An Understanding about core factors that affect mobile banking adoption is still limited. Prior studies have depicted that an inadequate supply of relevant information is likely to discourage adoption of an innovation. In case of banks it is necessary that customers should be communicated and made aware of available innovative technologies and value can added due to their adoption (Jebarajakirthy & Shankar, 2021), (Laukkanen & Kiviniemi, 2010), (Wilton & Pessemier, 1981). This paper addressed the role of communication channels and awareness spread through them that affect core predictors which in turn increase or decrease customer's adoption of innovative technologies like mobile banking. Accordingly,

we believe that communication channels are significantly and positively associated with awareness (full support to H1). This result is in line with the work of (Agarwal & Prasad, 1998), who found that communication channels are positively associated with awareness. Communication channels are thus important antecedent factors that drives and motivates awareness. Further, our finding is consistent with diffusion innovation theory, which explains how communication channels create awareness and helps in diffusion of an innovation (Laukkanen & Kiviniemi,2010), (Picoto & Pinto 2021), (Rogers, 2003) According to innovation diffusion theory, communication channels play a dominant role in spreading awareness towards an innovation. Accordingly, results of this study reinforce the innovation diffusion view and prior studies (Shankar et al, 2020), and (Tran & Corner, 2016), (Yu, 2012), highlight the important role of communication channels towards spreading awareness.

In the specific context of Pakistan, the progress of mobile banking is important for banks and other financial institutions to collaborate closely with their customers. The basic purpose for introducing mobile banking is the demand for customers and the required efficiency for global competition. Additionally, as per Pakistan economic survey 2017-2018 the country suffers a high illiteracy rate of 42% which makes the adoption of such innovative technologies difficult. Banks are attempting to boost such adoption rate.

While investigating empirically the relationship between awareness and core predictors produced mixed results have been produced (Hanafizadeh & Khedmatgozar, 2012) ;(Khechine et al, 2020). This study compliments its work through identifying different relationships between awareness and core predictors, and also demonstrate that awareness is associated with attitude, trust and performance expectancy (full support H2b-d). Banks that offer mobile banking services can improve positive attitude, create trustworthy relation and better performance. Further the positive association between awareness and three core predictors (attitude, trust and performance expectancy) adds support to growing body of literature (Mazhar et al, 2014)This research thus provide empirical support to the proposition that awareness spread via communication channels create a positive attitude, trust and improve performance of banking transactions (Tran & Corner, 2016).

Another noteworthy contribution of this study is the association between factors and behavioural intentions to adopt mobile banking. Specifically, our study suggest that improvement in core predictors such as attitude, trust and performance expectancy yield higher level of customer adoption (H3b-H3d), which is in line with the work of and (Abbas et al, 2018), (Alalwan et al, 2016) found that a positive attitude is a key driver towards adoption of mobile banking and having a positive attitude in long run enrich adoption. Findings of the study strengthen too the argument in support for trust as a generative mean to create loyalty and customer satisfaction (Abbas et al., 2018). According to (Alalwan et al, 2016) performance expectancy motivate the customers to use and accept new technology and believe that using this technology will enable him or her to attain desired gains in job performance.

With regard to risk, our findings suggest that this predictor is not associated with behavioural intentions to adopt mobile banking. A possible reason for the lack of significance in the relationship between perceived risk and mobile banking adoption is that consumers are risk tolerant and perceive mobile banking safe. They believe that mobile banking is secure and protects their personal information. They have no concern with hackers, call or data interception and exposure of bank information. The lack of association between risk and adoption is surprising; however (Cope et al, 2013),found the similar results. The rationale for the cumulative model is that in this era of automization , it is necessary for banks to excel in understanding

core predictors of mobile banking adoption focussing on attitude, trust, performance expectancy and finally perceived risk (Baptista & Oliveira, 2016), (Tamilmani, 2021).

Conclusion And Future Direction

This study presented a holistic perspective of communication channels by examining the effect of awareness on core predictors and consumers' behavioural intentions to adopt mobile banking using innovation diffusion theory. Taking into account the poor mobile banking adoption rate by Pakistani bank customers, this research realised the necessity of examining the core predictors that could shape the Pakistani bank customers' intentions to adopt mobile banking. Structural equation modelling was used to analyse data collected from banking industry in Pakistan. Due to Pakistan's fast growing banking industry, research findings provide fruitful implications for banks, researchers and social scientists. On the theoretical front, this study provides a noteworthy contribution to mobile banking adoption literature by systematically investigating the links of awareness with its antecedent factors communication channels and consequent core predictors and finally mobile banking adoption. Our results significantly suggest that communication channels affect awareness which in turn positively associate with attitude, trust and performance expectancy. Attitude, trust and performance expectancy are significantly and positively associated with consumer behavioural intentions to adopt mobile banking. On the practical front, these research findings provide guidelines for banks to focus on key factors affecting adoption in order to improve operational competencies and fineness of services for grasping more customers.

Although this research contributes to theory and practice, yet there are few limitations that should be considered. Data for this study was obtained using a simple random sampling of Pakistani bank customers in twin cities (Rawalpindi and Islamabad). This could adversely affect generalizability of these results in other cities. The sample description exhibited a majority of population to be young, well-educated. So concerns regarding the applicability of results may be raised for population with other characteristics (e.g. age and education). This research covered one channel for online banking i.e. mobile banking. This might diminish its' applicability to numerous other types of electronic channels. Results of the current research are based on cross-sectional data, therefore, questions may be raised regarding their applicability in long term.

The present study used cross-sectional data, thus future studies may focus on longitudinal data. Moreover, as this research collected data from twin cities (Rawalpindi and Islamabad) of Pakistan, future studies should expand the whole of the geographical coverage by including other cities covering both rural and urban areas.

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