

Antecedents of Mobile Banking Adoption - its relation with User Demographics and Usage Pattern

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Abstract: Technological advances and service availability do not automatically lead to widespread adoption and use (Baldi and Thaung, 2003; Constantin et.al, 2003; Wang et al, 2008). Mobile banking is a critical service in the banking industry therefore adoption of the same by customers is also vital for the banking industry. It is the subset of electronic banking that enables customers to access banking services from anywhere and everywhere using a mobile device. Internet banking users and mobile banking users vary in their channel attributes, preferences, as well as their value perceptions about their banking activities (Laukkanen, 2007a; Laukkanen, 2007b). Taking into consideration its distinctiveness over other banking channels, a research into the motivators and inhibitors of customer usage of M-banking is worth undertaking. As such, there have been repeated calls for the investigation of factors that predict or explain the adoption, acceptance and use of M-banking (Kim et al, 2007; Laforet and Li, 2005; Luarn and Lin, 2005). The present study is an attempt to identify the factors contributing towards the adoption of mobile banking from the customers perspective. As the customers vary in their demographics and usage of banking service it is essential to probe whether there is any similarity or difference in their perception depending upon these differences since providing customised services and fulfilling the customer needs is the main objective of this innovation.

Keywords: Mobile Banking, Adoption, Demographics, Trust, Perceived Usefulness, Social Influence, Self-Efficacy, Perceived Cost, Perceived Risk and Perceived Ease of Use.

Introduction

Technology has improved the quality of life both at home and work place. It has increased the efficiency, reduced cost and enriched customer service. Technological developments have even reshaped the business environment. Usage of technologies result in new opportunities, choices and possibilities in the field of product /service design and delivery. Financial service sector is the most affected in this regard and therefore financial service delivery and consumption have undergone major changes in the past few years. Banking industry is the worst affected industry in the financial service sector that it has become impossible for the banks to survive and compete without adopting and utilising the latest technology. Internet and mobile technology usage in the banking industry has brought new products/services to the consumers with added values through various electronic channels. It is noticeable that the new technologies particularly in ICT, enabled banks to service customers not only in branches and other dedicated servicing sites, but also in domiciles, work places, and stop and shop stores, as well as in a myriad of other channels (Al-Hawari et al, 2005). Mobile banking, which emerged as a wireless service delivery channel is the outcome of internet and mobile technology usage of banks providing increased value for customers banking transactions. It serves the banking needs of both mobile and immobile customers irrespective of place and time. Goswami and Raghavendra (2009) debate the general goal of m-banking is to ensure the presence of a financial institution on a mobile phone. This view was further supported by Crosman P (2011) who stated that m-banking facilitates for users to have a bank branch in their pocket at any convenient time and place. The superiority of mobile banking over internet banking lies in its spatial and temporal features.

Mobile banking is a revolution that is driven by the world's one of the fastest growing sectors mobile communication technology. Mobile banking is defined as an interaction in which a customer is connected to a bank via a mobile device such as cell phone, smart phone or personal digital assistant (PDA) (Laukkanen T, Kiviniemi V 2010). Mobile banking can also be considered as the convergence of mobile technology and financial services (Chung N, Kwon SJ 2009). M-banking is a subset of banking as it allows everyone easy access to their banking activities via mobile handsets (Yu TK, Fang K, 2009). In short, mobile banking provides a new opportunity to banks to extend their services to customer and improve their competitiveness (Kohli K, 2004) includes value added mobile services (Lee MSY, Goldrick PF, Keeling KA, Doherty J, 2003) offers an interactive banking transaction (Suoranta M, Mattila M, 2004) and helps the bank in cost saving in its operations.

Adoption is fundamental aspect of mobile banking without it no other aspect – usability, ubiquity, awareness or service quality can be studied. Understanding the acceptance of mobile banking requires the study of a wide range of parameters. It is necessary to investigate the factors that influence the adoption and acceptance of mobile banking among customers. It is noticed that Mobile banking has not gained acceptance in both developed and developing countries in spite of the widespread usage of mobile devices. Despite the rapid rollout of mobile services over the past decade, mobile transactions, including mobile banking and payments, have not been used as much as expected (Kleijnen M, Wetzels M, Ruyter K D 2004) and the services are marginally adopted (Laukkanen T, Pasanen M 2008). It is essential to identify the most important factors responsible for motivating and/or deterring potential consumers from adopting and using M-technology services (Khasawneh Mha 2015).

Demographic characteristics such as residing area, educational qualification, age and gender exert an influence on mobile banking acceptance and adoption. In addition, prior internet experience and duration of usage affect customer acceptance of mobile banking. The demographic factors, age, education, gender and income are expected to influence consumers attitudes, which in turn influences their intentions to use Internet Banking services (Shaza.W. Ezzi, 2014). India has a fast-growing mobile phone market. TRAI (Telecom Regulatory Authority of India) has been providing good quality services at reasonable price in order to compete with the private parties in this field. This has made usage of mobile phones affordable to all groups of the society. Increase in income of the consumers and rapid urbanisation have further contributed to this growth. It soon became a convenient mode of communication and networking even for the urban and rural poor. Non adoption of mobile banking by customers present a great challenge to banks as they have invested large funds in infrastructure for providing mobile banking services. Moreover, there are other financial transaction systems competing with the banks in providing financial services at the convenience of customers at affordable rates.

It is essential to understand the demographic and personal (demand -side) attributes in shaping the adoption of mobile banking and other allied services due to the more private and personal nature of its usage. The unique nature of mobile banking in addition to the various aspects of customer expectations in it namely experience factor, customer control and situation specific personalisation necessitates a study on the individual differences or similarities on its adoption. Moreover, an individual's demographic characteristics are predetermining factors in his/her attitude towards adoption of mobile banking.

Adoption factors

The factors determining adoption of mobile banking were identified after an extensive literature review. Studies both inside and outside the country related to mobile and online banking were reviewed. The Technology Acceptance Model (TAM) is the most popular and widely accepted model of technology adoption. The two main adoption factors namely Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) of TAM were initially selected. In addition to PU and PEOU all the adoption factors were selected from various models of adoption namely TRA, TPB, IDT, UTAUT, TTF, SCT, ITT, etc. taking into consideration not only its contribution towards adoption but also in the continued

usage of the service. It is identified that customer satisfaction is also related with proper adoption and usage of modern banking services. The other adoption factors selected are Trust (TR), Social Influence (SI), Self-Efficacy (SE), Perceived Cost (PC) and Perceived Risk (PR).

Trust (TR) - Trust beliefs can be defined as the confident trustor perception that the trustee has attributes that are beneficial to the trustor (McKnight, Choudhury and Kacmar, 2002). It is difficult to build trust in mobile banking as it involves no face to face contact and customers' level of trust in this situation is dynamic rather than static. It is an important factor not only in mobile banking adoption, but also in the continued usage behaviour of mobile banking (Zhou, 2011).

Table 1. Descriptive Statistics of Trust

Sl.No.	Items	Item Code	Mean	SD	CV
1.	This smartphone banking offers access to sincere and genuine banking services	TR1	4.23	.629	14.87
2.	The banks mobile banking application and services should have good reputation	TR2	4.23	.630	14.89
3.	Mobile banking service providers keeps user interests in mind	TR3	4.09	.709	17.33
4.	Mobile banking system keeps its promises and commitments	TR4	3.95	.766	19.39
5.	Mobile banking facility offers secure personal privacy	TR5	4.07	.764	18.77
6.	Mobile banking seems dependable	TR6	4.03	.749	18.59
7.	Mobile banking service provider is trustworthy	TR7	4.07	.731	17.96
8.	The security devices of the mobile banking system protect the data that are sent by me	TR8	4.02	.744	18.51

Source: Primary data

Perceived Usefulness (PU) - According to Davis perceived usefulness is the degree to which a person believes that using a particular system would enhance his/her job performance. It is argued that adoption will not take place unless customers perceive the service to be useful (Ali & Bharadwaj, 2010). The Perceived Usefulness is relevant both at the initial adoption stage as well as at the post adoption stage in usage of mobile banking. It is a main factor of Technology Adoption Model (TAM).

Table 2. Descriptive Statistics of Perceived Usefulness

Sl.No.	Items	Item Code	Mean	SD	CV
1.	Mobile banking services enhances the productivity of my banking activities	PU1	4.15	.736	17.73
2.	Using mobile banking enhances my effectiveness on doing banking transactions	PU2	4.20	.731	17.40
3.	The mobile banking allows me to manage my finance accounts and operations more efficiently	PU3	4.14	.766	18.50
4.	I find mobile banking useful in my banking needs	PU4	4.30	.633	14.72
5.	Using smartphone banking enables me to access banking services more quickly	PU5	4.38	.657	15.00
6.	Mobile banking is an easier way to solve banking needs	PU6	4.07	.781	19.19

Source: Primary data

Social Influence (SI) - Social influence in this study refers to perceived influence from social networks and important others for/against a certain behaviour (Ali Reza Montazemi and Hamed Qahri Saremi, 2013). It is a person’s perception that most people who are important to him think he should or should not perform the behaviour in question (Fishbein & Ajzen, 1975). It is one of the main factors in Rogers Innovation Diffusion Theory (IDT) and UTAUT model, and it plays a major role in determining the adoption of innovations.

Table 3. Descriptive Statistics of Social Influence

Sl.No.	Items	Item Code	Mean	SD	CV
1.	My friends and family value the use of mobile banking	SI1	3.67	.873	23.79
2.	People who are important to me think that I should use mobile banking	SI2	3.58	.967	27.01
3.	People who influence my behaviour think that I should use mobile banking	SI3	3.45	1.000	28.99
4.	People whose opinions I value prefer that I use mobile banking	SI4	3.49	1.006	28.83
5.	Using mobile banking applications brings me social approval	SI5	3.22	1.083	33.63

Source: Primary data

Self-Efficacy (SE) - Campeau et.al, (1999) in their research observed that new technology adoption is influenced by technology self-efficacy. According to (Taylor & Todd, 1995) it is an individual’s self-confidence in his or her ability to perform a behaviour. Wang et.al, (2003) indicated that the individual differences in computer self-efficacy formed significant positive effects on the behavioural intention to adopt internet banking through perceived usefulness and ease of use. It is relevant both at the time of initial adoption as well as continued usage of mobile banking.

Table 4. Descriptive Statistics of Self-Efficacy

Sl. No	Items	Item Code	Mean	SD	CV
1.	I can perform my banking needs using smartphone banking even if there is no one around to help me	SE1	4.47	.608	13.60
2.	I can perform my banking needs using smartphone banking if I have adequate time to complete them	SE2	4.35	.696	16.00
3.	I can perform my banking need using smart phone banking using only a simple manual or online help for reference	SE3	4.11	.918	22.34
4.	I am confident in my capability to search information in mobile banking applications	SE4	4.28	.706	16.50
5.	I am confident enough in my ability to perform my banking needs using smart phone banking	SE5	4.30	.712	16.56

Source: Primary data

Perceived Cost (PC) - According to (Rothwell and Gardiner 1984), “Price is one of the single most important factors that influenced the customer adoption of innovation. Perceived cost is defined as the extent to which a person believes that using mobile banking will cost money (Luarn & Lin, 2005). It includes price, fee, charges-i.e. commission for fund transfer, bill collection and payments’, transaction charges, charges taken by Telecommunication company, device designer company, internet service providers (Vijay M Kumbhar, 2012).

Table 5. Descriptive Statistics of Perceived Cost

Sl.No.	Items	Item Code	Mean	SD	CV
1.	The cost of making a financial transfer with mobile banking is reasonable	PC1	3.86	.947	24.53
2.	I am happy with the price charges for performing mobile banking	PC2	3.49	1.083	31.03
3.	There are no hidden charges in the services offered by the bank	PC3	3.48	1.035	29.74
4.	Bank keeps customers informed of any change in prices	PC4	3.40	1.066	31.35
5.	Mobile banking transactions are economical	PC5	3.71	.892	24.04

Source: Primary data

Perceived Risk (PR) - The perceived risk is defined as the consumers’s subjective belief of suffering a loss in pursuit of a desired outcome (Samuel Henrique Silva Bidarra, 2013). Customers’ perception of risk in mobile banking involves security system of banks, authentication procedure and privacy guarantee provided by the bank (H.Kalaiarasi and Dr.V. Sridivya). Perceived Risk of mobile banking channel negatively influence their attitude, intention, adoption and usage of online and mobile banking services (Sathye, 1999; Zhao et.al, 2008; Safeena et.al, 2011, Wessels and Drennan, 2010; Brown et.al, 2003; Grabner Krauter and Faullant, 2008).

Table 6. Descriptive Statistics of Perceived Risk

Sl.No.	Items	Item Code	Mean	SD	CV
1.	I think other people can find information about my bank online transactions if I make it through mobile applications	PR1	3.29	1.134	34.47
2.	My mobile banking information can be tampered	PR2	3.10	1.077	34.74
3.	Mobile banking is prone to signal failures and network congestion	PR3	2.45	1.017	41.51
4.	Conducting banking transactions on mobile phones is risky because one can easily lose or misplace the mobile phone.	PR4	2.79	1.089	39.03
5.	A mistake when using the mobile banking service may cause financial damage.	PR5	2.47	.998	40.40

Source: Primary data

Perceived Ease of Use (PEOU) - Perceived Ease of Use is the degree to which a person believes that using a particular technology would be free of effort (Davis, 1989). It is one of the main user perceptions on which the most widely accepted model of adoption, Technology Acceptance Model (TAM) is based. Ease of use includes ease of navigation, clarity in instructions, clear display, proper design of user interface and less complications.

Table 7. Descriptive Statistics of Perceived Ease of Use

Sl.No.	Items	Item Code	Mean	SD	CV
1.	Navigating through mobile banking application is easy	PEOU1	4.30	.711	16.53

2.	It is easy for me to learn how to utilise the mobile banking services	PEOU2	4.28	.638	14.91
3.	Using mobile banking does not require a lot of mental effort	PEOU3	4.20	.780	18.57
4.	It is easy to become skilful at using mobile banking	PEOU4	4.15	.715	17.23
5.	The interaction with mobile financial service is clear and understandable	PEOU5	4.03	.737	18.29

Source: Primary data

Relation of Adoption Factors with User Demographics and Usage Pattern

Customers differ in their demographic characteristics such as gender, age, education, occupation, income, geographical area, etc. and these factors are crucial in the context of adoption, usage and continuance intention of banking technology. The frequency, duration and purpose of usage of mobile banking also differs across various age groups and income levels. Moreover, difference is identified in customer perception depending upon the banking sectors and also the awareness level of customers. Attitude towards new technologies may be linked to a set of personal characteristics (Michal Polasik and Tomasz Piotr Wisniewski, 2008). Therefore, these adoption factors identified through extensive literature review and were related to the user demographics and usage pattern.

About 400 mobile banking customers of Kerala were selected for the study. Data was collected using a well-structured questionnaire from the three districts Kozhikode, Thiruvananthapuram and Ernakulam representing North, South and Central Kerala. Mobile banking users were selected using convenience sampling, the data collected were analysed and the result of same is summarised.

Table 8. Adoption Factors * Geographical Factors

Adoption Factors	Geographical factors	Groups	T/F value	Sig. (P-value)	Sig/Not Sig.	Post Hoc	
Trust (TR)	Region	North Kerala	2.957	.053	Not Sig.	---	
Perceived Usefulness (PU)			1.286	.278	Not Sig.	---	
Social Influence (SI)			South Kerala	1.958	.143	Not Sig.	---
Self-Efficacy (SE)		Central Kerala		2.251	.107	Not Sig.	---
Perceived Cost (PC)				1.162	.314	Not Sig.	---
Perceived Risk (PR)				1.879	.154	Not Sig.	---
Perceived Ease of Use (PEOU)			1.044	.353	Not Sig.	---	
Trust (TR)	Area	Urban	1.253	.287	Not Sig.	---	
Perceived Usefulness (PU)			.171	.843	Not Sig.	---	
Social Influence (SI)		Semi urban	1.519	.220	Not Sig.	---	
Self-Efficacy (SE)			Rural	.828	.438	Not Sig.	---
Perceived Cost (PC)		.919		.400	Not Sig.	---	
Perceived Risk (PR)		.213		.808	Not Sig.	---	
Perceived Ease of Use (PEOU)		.602		.548	Not Sig.	---	

The adoption factors considered for this study were Trust (TR), Perceived Usefulness (PU), Social Influence (SI), Self-Efficacy (SE), Perceived Cost (PC), Perceived Risk (PR) and Perceived Ease of Use (PEOU). The adoption factors were selected after extensive literature review giving due consideration to the adoption factors in all the models and theories of technology adoption. The above ANOVA table results clearly indicate that there is no significant difference in the perception of customers on any of the adoption factors of mobile banking depending upon their region or residing

area. In other words, the perception of customers on the adoption factors in the North, South and Central Kerala does not differ significantly. Similarly, there is no significant difference in the perception of customers residing the urban, semi urban or rural areas of Kerala with respect to the adoption factors of mobile banking. This leads to the conclusion that findings relating to the adoption factors can be generalised across different regions and areas of Kerala. The p-values of all adoption factors are above 0.05, which proves that there is no significant difference in the customer perception of adoption factors. The extent of agreement or disagreement of customers regarding the adoption factors does not vary significantly across their region or residing area. Stavins (2001) argued that geographical location matters for the usage of electronic payments and Gan et al., (2006) provided evidence that online banking usage depends on the urbanisation of the residence area, both these findings were in contrast to the findings of this study.

Table 9. Adoption Factors.* Demographic Factors.

Adoption Factors	Demographic Factors	Groups	T/F value	Sig. (P-value)	Sig/Not Sig.	Post Hoc
Trust (TR)	Gender	Male	2.221	.027	Sig	---
Perceived Usefulness (PU)		Female	3.088	.002	Sig	---
Social Influence (SI)			1.108	.268	Not Sig	---
Self-Efficacy (SE)			3.148	.002	Sig	---
Perceived Cost (PC)			1.497	.135	Not Sig	---
Perceived Risk (PR)			1.731	.084	Not Sig	---
Perceived Ease of Use (PEOU)			2.726	.007	Sig	---
Trust (TR)	Age	Up to 30	.270	.763	Not Sig	---
Perceived Usefulness (PU)		31-50	1.983	.139	Not Sig	---
Social Influence (SI)		Above 50	1.158	.315	Not Sig	---
Self-Efficacy (SE)			3.571	.029	Sig	Above 50 with both groups
Perceived Cost (PC)			4.179	.016	Sig	Above 50 with 31-50
Perceived Risk (PR)			.519	.596	Not Sig	---
Perceived Ease of Use (PEOU)			.777	.460	Not Sig	---
Trust (TR)	Education	Below - Graduation	1.274	.283	Not Sig	---
Perceived Usefulness (PU)		Graduation	1.753	.156	Not Sig	---
Social Influence (SI)		Post- Graduation	.619	.603	Not Sig	---
Self-Efficacy (SE)		Professional-Degree	1.381	.248	Not Sig	---
Perceived Cost (PC)			1.182	.316	Not Sig	---
Perceived Risk (PR)			.063	.979	Not Sig	---
Perceived Ease of Use (PEOU)			1.608	.187	Not Sig	---
Trust (TR)	Occupation	Student	.338	.890	Not Sig	---

Perceived Usefulness (PU)		Govt employee	1.588	.162	Not Sig	---
Social Influence (SI)		Private employee	1.012	.410	Not Sig	---
Self-Efficacy (SE)		Business Profession	2.577	.026	Sig	Profession and others
Perceived Cost (PC)		Others	.754	.583	Not Sig	---
Perceived Risk (PR)			3.235	.007	Sig	Profession and business
Perceived Ease of Use (PEOU)			2.382	.038	Sig	Profession and others
Trust (TR)	Income	Up to 20,000	1.735	.142	Not Sig	---
Perceived Usefulness (PU)		20,001 - 40000	.351	.844	Not Sig	---
Social Influence (SI)		40,001 - 60000	1.182	.318	Not Sig	---
Self-Efficacy (SE)		60,001 - 80000	1.476	.209	Not Sig	---
Perceived Cost (PC)		Above 80,000	2.038	.089	Not Sig	---
Perceived Risk (PR)			.581	.676	Not Sig	---
Perceived Ease of Use (PEOU)			.678	.607	Not Sig	---

The above table describes the relationship between adoption factors of mobile banking and the demographic factors of customers. The demographic factors considered for the study are gender, age, education, occupation and income. The adoption factors include Trust (TR), Perceived Usefulness (PU), Social Influence (SI), Self-Efficacy (SE), Perceived Cost (PC), Perceived Risk (PR) and Perceived Ease of Use (PEOU). The table unveils that only few adoption factors have shown significant difference on relating to certain demographic factors. It is proved that there is no significant difference in the perception of customers with respect to adoption factors when relating the same to their educational qualification and level of income. This is in line with the findings of (Tommi Laukkanen, 2016) that role of income is non-significant in the mobile banking adoption decision. Few adoption factors have shown significant difference when relating with gender, age and occupation.

The t-test results of the adoption factors with gender proved that there is significant difference in the perception of male and female customers with respect to Trust (TR), Perceived Usefulness (PU), Self-Efficacy (SE) and Perceived Ease of Use (PEOU). On performing one sample t-test it is found that the t-values and the significance are as follows Trust (t-value = 2.221, p-value = 0.027), Perceived Usefulness (t-value = 3.088, p-value = 0.002), Self-Efficacy = 3.148, p-value = 0.002) and Perceived Ease of Use (t-value = 2.726, p-value = 0.007). Thus, the p-values of all the significant adoption factors are less than 0.05. However, there is no significant difference in Social Influence (SI), Perceived Cost (PC) and Perceived Risk (PR).

The adoption factors are related to age using ANOVA, it is observed that there is significant difference in the adoption factors Self-Efficacy (SE) and Perceived Cost (PC). Age has been found to be an important determinant in the online banking acceptance studies (Karjaluo, 2002; Flavian et al., 2006; Gan et al., 2006), it supports the above-mentioned findings that customer perception on self-efficacy and perceived cost depends upon age. The F-values and p-value are (F-value = 3.571, p-value = 0.029) and (F-value = 4.179, p-value = 0.016) respectively. The age groups considered are 'Below 30', '31-50' and 'Above 50'. The post hoc test results revealed that the difference in self-efficacy is on account of the difference in the 'Above 50' age group with 'Below 30' and '31-50' age groups. On

considering post hoc test of Perceived Cost, it is found that the significant difference is due to the difference in 'Above 50' age group with 31-50 age group. There is no significant difference in Trust, Perceived Usefulness, Social Influence, Perceived Risk and Perceived Ease of Use.

It is identified on comparing the adoption factor with occupation of customers that there is significant difference in Self Efficacy, Perceived Risk and Perceived Ease of Use. The result of ANOVA test revealed that the F-values and p-values are (F-value = 2.577, p-value = 0.026) for SE, (F-value = 3.235, p-value = 0.007) for PR and (F-value = 2.382, p-value = 0.038) for PEOU. The customers are classified as student, Govt. employee, private employee, business and others on the basis of occupation. The significant difference in self-efficacy and perceived ease of use is on account of the difference between profession and others, that in perceived risk is on account of difference in profession and business as revealed by the results of post hoc test. There is no significant difference in Trust, Perceived Usefulness, Social Influence and Perceived Cost.

Table 10. Adoption Factors * Usage Pattern

Adoption Factors	Usage Pattern	Groups	T/F value	Sig. (P-value)	Sig/Not Sig.	Post Hoc
Trust (TR)	Length of Usage	Less than 2 years	2.530	.081	Not Sig	---
Perceived Usefulness (PU)		2-4 years	7.291	.001	Sig	Less than 2 years with 2-4 years
Social Influence (SI)		2-4 years	.786	.456	Not Sig	---
Self-Efficacy (SE)		Above 4 years	5.415	.005	Sig	Less than 2 years with 2-4 years and above 4 years
Perceived Cost (PC)			1.221	.296	Not Sig	---
Perceived Risk (PR)			1.606	.202	Not Sig	---
Perceived Ease of Use (PEOU)			8.574	.000	Sig	Less than 2 years with 2-4 years
Trust (TR)		Average Usage	More than twice a week	6.915	.001	Sig
Perceived Usefulness (PU)	Once or twice a week		19.953	.000	Sig	More than twice a week with once in two weeks or less & once or twice a week
Social Influence (SI)	Once in two weeks or less		4.951	.008	Sig	More than twice a week with once in two weeks or less
Self-Efficacy (SE)	Once in two weeks or less		8.854	.000	Sig	More than twice a week with once in two weeks or less & once or twice a week
Perceived Cost (PC)			6.863	.001	Sig	More than twice a week with once in two weeks or less & once or twice a week
Perceived Risk (PR)			3.652	.027	Sig	More than twice a week with once in two weeks or less
Perceived Ease of Use (PEOU)			18.687	.000	Sig	More than twice a week with once in two

						weeks or less & once or twice a week
Trust (TR)	Frequency of Usage	Always	6.946	.000	Sig	Always with often, sometimes and rarely
Perceived Usefulness (PU)		Often	17.480	.000	Sig	Always with often, sometimes and rarely
Social Influence (SI)		Sometime	3.159	.025	Sig	Always with rarely
Self-Efficacy (SE)		Rarely	5.951	.001	Sig	Always with sometimes and rarely
Perceived Cost (PC)			2.259	.081	Not Sig	---
Perceived Risk (PR)			4.789	.003	Sig	Always with rarely
Perceived Ease of Use (PEOU)			13.985	.000	Sig	Always with often, sometimes and rarely
Trust (TR)		Purpose of Usage	Informational only	-1.457	.146	Not Sig
Perceived Usefulness (PU)	-1.634			.103	Not Sig	---
Social Influence (SI)	.159			.873	Not Sig	---
Self-Efficacy (SE)	Informational & Transactional		-1.973	.049	Sig	---
Perceived Cost (PC)			-1.464	.144	Not Sig	---
Perceived Risk (PR)			-.440	.660	Not Sig	---
Perceived Ease of Use (PEOU)			-2.490	.013	Sig	---

Unlike the relation between adoption factors and user demographics, most of the adoption factors displayed significant difference when related to usage pattern of customers. The usage pattern applicable to this study are length of usage, average usage, frequency of usage and purpose of usage.

On considering the adoption factors with the length of usage of mobile banking, it is identified that there is significant difference in Perceived Usefulness (PU), Self-Efficacy (SE) and Perceived Ease of Use (PEOU). The ANOVA test revealed the F-values and p-values as (F-value = 7.291, p-value = 0.001) for PU, (F-value = 5.415, p-value = 0.005) for SE, and (F-value = 8.574, p-value = 0.000) for PEOU. The usage pattern groups are classified as less than 2 years, 2-4 years and above 4 years. The significant difference in adoption factors PU and PEOU can be explained by the difference in customers using 'less than 2 years' with '2-4 years' and that in SE can be attributed to those using less than 2 years with 2-4 years and above 4 years. The p-values of all the other adoption factors are greater than 0.05 indicating that there is no significant difference in Trust, Social Influence, Perceived Cost and Perceived Risk.

Mobile banking customers are classified on the basis of their average usage as those using 'More than twice a week', 'Once or twice a week' and 'Once in two weeks or less'. When the adoption factors are related to average usage, it is found that there is significant difference in all the factors of adoption. The ANOVA test results revealed that the p-value of all the adoption factors are less than 0.05. The F-values and p-values are (F-value = 6.915, p-value = 0.001) for TR, (F-value = 19.953, p-value = 0.000) for PU, (F-value = 4.951, p-value = 0.008) for SI, (F-value = 8.854, p-value = 0.000) for SE, (F-value = 6.863, p-value = 0.001) for PC, (F-value = 3.652, p-value = 0.027) for PR and (F-value = 18.687, p-value = 0.000) for PEOU. The difference in Social Influence and Perceived Risk is due to the difference in customers using 'More than twice a week' with 'once in two weeks or less' whereas the difference in Trust, Perceived Usefulness, Self-Efficacy, Perceived Cost and Perceived Ease of Use is on account of the difference in customers using 'More than twice a week' with 'once in two weeks or less' & 'once or twice a week'.

Customers are classified on the basis of frequency of usage as Always, Often, Sometimes and Rarely. It is identified that except Perceived Cost (PC) all the other factors show a significant difference

in relation to frequency of usage of mobile banking. The study by (Amola Bhatt and Shahir Bhatt, 2016) proved that there is significant relationship between the frequency of using mobile banking and the factors influencing m-banking adoption which is in line with the result of this study. The F-values and p-values are (F-value = 6.946, p-value = 0.000) for TR, (F-value = 17.480, p-value = 0.000) for PU, (F-value = 3.159, p-value = 0.025) for SI, (F-value = 5.951, p-value = 0.001) for SE, (F-value = 4.789, p-value = 0.003) for PR and (F-value = 13.985, p-value = 0.000) for PEOU. The post hoc test revealed that the significant difference in Social Influence and Perceived Risk is attributed to the difference in customers using always with those using rarely. Differences in Trust, Perceived Usefulness and Perceived Ease of Use can be attributed to those using always with those using often, sometimes and rarely and the difference in Self-Efficacy due to those using always with those using sometimes and rarely.

On the basis of purpose of usage customers are classified as those using informational services and those using informational and transactional services. The t-test results revealed that there is significant difference only in the adoption factors Self-Efficacy and Perceived Ease of Use as their p-values are less than 0.05. The t-values and p-values are SE (t-value = -1.973, p-value = 0.049) and PEOU (t-value = -2.490, p-value = 0.013). All the other factors do not show a significant difference.

Table 11. Adoption Factors * Miscellaneous Factors

Adoption Factors	Miscellaneous Factors	Groups	T/F value	Sig. (P-value)	Sig/ Not Sig.	Post Hoc	
Trust (TR)	Banking Sector	Public Sector Banks	6.450	.002	Sig	OPSBs with PSBs & NGBs	
Perceived Usefulness (PU)		Old Private Sector Banks	4.884	.008	Sig	PSBs with OPSBs and NGBs	
Social Influence (SI)		New Generation Banks		1.904	.150	Not Sig	-----
Self-Efficacy (SE)				5.332	.005	Sig	PSBs with OPSBs and NGBs
Perceived Cost (PC)				13.035	.000	Sig	OPSBs with PSBs & NGBs
Perceived Risk (PR)				.544	.581	Not Sig	-----
Perceived Ease of Use (PEOU)			7.904	.000	Sig	PSBs with OPSBs and NGBs	
Trust (TR)	Amount Transacted	Up to 5000	7.396	.001	Sig	Above 10,000 with up to 5,000&5001-10,000	
		5001-10000					
Perceived Usefulness (PU)		Above 10000	14.819	.000	Sig	Above 10,000 with up to 5,000&5001-10,000	
Social Influence (SI)			4.627	.010	Sig	Up to 5,000 & above 10,000	
Self-Efficacy (SE)			11.705	.000	Sig	Above 10,000 with up to 5,000&5001-10,000	

Perceived Cost (PC)			4.109	.017	Sig	Above 10,000 with up to 5,000&5001-10,000
Perceived Risk (PR)			.014	.986	Not Sig	-----
Perceived Ease of Use (PEOU)			11.267	.000	Sig	Above 10,000 with up to 5,000&5001-10,000
Trust (TR)	Awareness	Fully aware	17.734	.000	Sig	Fully aware with partly aware & not aware
		Partly aware				
		Not aware				
Perceived Usefulness (PU)			22.786	.000	Sig	Fully aware with partly aware & not aware
Social Influence (SI)			7.479	.001	Sig	Fully aware with partly aware & not aware
Self-Efficacy (SE)			27.685	.000	Sig	Fully aware with partly aware & not aware
Perceived Cost (PC)			17.012	.000	Sig	Fully aware with partly aware & not aware
Perceived Risk (PR)			4.239	.015	Sig	Fully aware with partly aware
Perceived Ease of Use (PEOU)			29.919	.000	Sig	Fully aware with partly aware & not aware

Adoption factors were also related to miscellaneous factors such as banking sector, amount transacted at a time and level of awareness. It was noticed that most of the adoption factors were significant on relating to these factors.

On relating the adoption factors to the banking sector, it is revealed that there is significant difference in all the adoption factors except Social Influence (SI) and Perceived Risk (PR). The banking sector is classified for this purpose as Public Sector Banks (PSBs), Old Private Sector Banks (OPSBs) and New Generation Banks (NGBs). It is unveiled through the results of ANOVA test that the p-values of all the other adoption factors are less than 0.05. It is proved in some of the earlier studies that there is a significant difference in the service quality features of Public sector, Private sector and Foreign sector banks in India (Navneet Kaur and Ravi Kiran, 2015; Dilip Kumar Jha, 2014). It is after adoption that customers judge the service quality of mobile banking. The difference in perception on adoption factors is a clear indication that the perception of customers on service quality will differ significantly. The F-values and the p-values are (F-value = 6.450, p-value = 0.002) for TR, (F-value = 4.884, p-value = 0.008) for PU, (F-value = 5.332, p-value = 0.005) for SE, (F-value = 13.035, p-value = 0.000) for PC

and (F-value = 7.904, p-value = 0.000) for PEOU. The post hoc test results reveals that the significant difference in Trust and Perceived Cost is attributed to the difference in perception of customers of OPSBs with PSBs and NGBs. The difference in Perceived Usefulness, Self- Efficacy and Perceived Ease of Use is attributed to the difference in the perception of customers of PSBs with OPSBs and NGBs.

The adoption factors are related to amount transacted, and customers for this purpose are classified as those transacting 'Up to 5,000', '5,001-10,000 and 'Above 10,000'. The ANOVA results reveal that there is no significant difference in the adoption factor Perceived Risk. The p-value of all the other factors are less than 0.05 and hence significant. The F-values and p-values of all the significant factors are (F-value = 7.396, p-value = 0.001) for TR, (F-value = 14.819, p-value = 0.000) for PU, (F-value = 4.627, p-value = 0.010) for SI, (F-value = 11.705, p-value = 0.000) for SE, (F-value = 4.109, p-value = 0.017) for PC and (F-value = 11.267, p-value = 0.000) for PEOU. The post hoc test revealed that the significant difference in TR, PU, SE, PC and PEOU can be explained with the difference in those transacting above 10,000 with those transacting up to 5,000 and 5001-10,000 and in the factor Social Influence the difference in those transacting up to 5000 and above 10000.

The customers are classified as fully aware, partly aware and not aware on the basis of their awareness and on relating adoption factors to customer awareness, it is identified that all the adoption factors display significant difference. The results of the ANOVA test proved that the p-values of all the adoption factors are less than 0.05. The F-values and the p-values are (F-value = 17.734, p-value = 0.000) for TR, (F-value = 22.786, p-value = 0.000) for PU, (F-value = 7.479, p-value = 0.001) for SI, (F-value = 27.685, p-value = 0.000) for SE, (F-value = 17.012, p-value = 0.000) for PC, (F-value = 4.239, p-value = 0.015) for PR, and (F-value = 29.919, p-value = 0.000) for PEOU. The post hoc test unveils that the significant difference in all the adoption factors except perceived risk is attributed to the difference in those customers who are fully aware with those who are partly aware and not aware. The difference in Perceived Risk is attributed to the difference in those who are fully aware with those who are partly aware.

Conclusion

The findings of the study proved that the customer perception of all mobile banking adoption factors does not vary across geographical factors. Similarly, it does not differ on the basis of education or income of customers. Therefore, the findings of the study can be generalised across region and area. When the gender, age and occupation of customers, it is found that the perception of customers with respect to few adoption factors differ significantly.

On the other hand, significant difference in perception is identified when usage pattern is related to adoption factors. There is significant difference in all the adoption factors depending upon the average usage of customers. When frequency of usage is related to adoption factors significant difference is identified in all the adoption factors except perceived cost. On considering the length of usage it is found that perception of customers varies with respect to perceived usefulness, perceived ease of use and self-efficacy. Only self-efficacy and perceived ease of use shows significant difference among adoption factors when related to purpose of usage. It is unveiled that perceived ease of use and self-efficacy varies when related to both length of usage and purpose of usage.

On considering the miscellaneous factors it is found that customer perception varies on most of the adoption factors namely trust, perceived usefulness, self-efficacy, perceived cost and perceived ease of use. The adoption factors that does not vary significantly are social influence and perceived risk. In fact, social influence is unaffected by banking sectors and perceived risk is prevalent in all banking sectors. When adoption factors are related to amount transacted, no significant difference is found in perceived risk, whereas significant difference is identified in all the other adoption factors. On

considering the awareness level of customers it is found that the perception of customers with respect to all adoption factors varies significantly.

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