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A Study on Factors Affecting Adoption of Mobile Banking by Customers in Virudhunagar District

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ABSTRACT
The fast development and advancement in mobile technologies make mobile banking easy and increasing its significance in banking sector and it absorbs more customers in to availing of various financial services of banks. Ease of use, risk, usefulness and efficiency are affecting adoption of mobile banking by customers of private sector banks. Significant difference is there in factors affecting adoption of mobile banking and profile of customers of private sector banks. Usefulness, ease of use and efficiency have significant and positive effect, while, risk has negative and significant effect on level of adoption of mobile banking of private sector banks by customers. In order to improve level of adoption of mobile banking of private sector banks by customers, private sector banks should make transactions and operations very easy and must provide clear interaction and take minimal effort by customers for mobile banking. Private sector banks should ensure privacy, security, protection of personal information of customers and they must use advanced technologies and uninterrupted networks.

Keywords: Adoption, Customers, Factors, Mobile Banking

1. INTRODUCTION

In the recent times, banks have introduced innovative and modern products and services in order to meet demand of customers and increasing their performance and they offer services through electronic modes (Saleem and Rashid, 2011). Mobile banking is a channel through which the consumers interact with banks by using mobile devices (Mari, 2003) and it is one of the component of electronic banking(Donner and Tellez 2008). Mobile banking is beneficial to customers and banks as it provides competitive advantage to banks; they reach large segments of customers with more coverage of geographical and operational areas by using mobile technologies and reduction of operational costs and for customers, it is highly useful and beneficial than internet banking (Amin, 2009).

Mobile banking assists banks to improve their efficiency, reduction of time for processing, higher degree of flexibility for transactions and minimize costs related with personalized services to customers. Besides, fast development and advancement in mobile technologies make mobile banking easy and increasing its significance in banking sector (Lin, 2011) and it absorbs more customers in to availing of various financial services of banks. Mobile banking is attracting customers because of convenience through technological adoption for their personal financial transactions (Mari and Minna, 2004).

Mobile banking is the recent phenomenon in modern banking system including private sector banks in India. Since, penetration of mobile phones is very large in India, mobile banking has a greater potential with lower cost of carrying out transactions by consumers across India. At the same time, adoption of mobile banking among customers in India is comparatively lower than western countries due to various factors. Thus, it important to study on factors affecting adoption of mobile banking by customers

2. REVIEW OF LITERATURE

Wessels and Drennan (2010) stated that easy to access and use, risk and networking were affecting adoption of mobile banking among customers. Cheah et al (2011) found that usefulness, risk, ease of use and reliability were significantly influencing mobile banking adoption of customers.

Samudra and Phadtare (2012) concluded that easy to use, usefulness and risk were significantly affecting adoption of mobile banking among customers. Chemingui and Lallouna(2013) revealed that ease of use, motivation, resistance and trust were significantly affecting intention of customers to adopt mobile banking.

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Karma et al (2014) showed that trust, risk and easy to use were positively and significantly influencing mobile baking of customers. Debasish and Dey (2015) indicated that ease to use, usefulness, comparative advantage and personal innovations were positively related with intention to use mobile banking by consumers.

Toroitich et al (2016) found that usefulness and ease of use were positively influencing, while, risk was negatively influencing adoption of mobile banking by customers. Puriwat and Tripopsakul (2017) concluded that ease of use, quality of mobile service and usefulness were having positive effect on adoption of mobile banking of customers.

Ayoobkhan (2018) revealed that usefulness, ease of use, trust, cost and risk were influencing adoption of mobile banking by customers. Khasawneh and Alquraan (2019) indicated that ease of use, usefulness, integrity and competence were significantly influencing intention of customers to use mobile banking services.

3. OBJECTIVES OF THE STUDY

1. To ascertain factors affecting adoption of mobile banking of private sector banks among customers.

2. To check difference in factors affecting adoption of mobile banking of private sector banks amongst profile of customers.

3. To appraise effectiveness of factors affecting adoption of mobile banking of private sector banks on level of adoption by customers.

4. METHODOLOGY

Virudhunagar district is chosen for the present study and convenience sampling method is applied to choose customers of private sector banks. Questionnaire method is used to get data from 300 customers of private sector banks. Percentage analysis is used to study profile of customers of private sector banks. To discover factors affecting adoption of mobile banking of private sector banks among customers, the exploratory factor analysis is employed. Mean, F-test and t-test are applied for finding out any significant difference amongst factors affecting adoption of mobile banking of private sector banks and profile of customers. Regression analysis is employed to appraise effectiveness of factors affecting adoption of mobile banking of private sector banks on level of adoption by customers.

5. RESULTS

5.1. PROFILE OF CUSTOMERS OF PRIVATE SECTOR BANKS

The profile of customers of private sector banks is given in Table-1. In total customers, majority of them (59.67 per cent) are male and large proportion of them (29.67 per cent) is in age group of 31 to 40 years. Higher proportion of them (32.67 per cent) has under graduation and most of them (37.33 per cent) are in monthly income group of Rs.25,001 – Rs.35,000 and maximum portion of them (76.33 per cent) have married.

Table-1: Profile of Customers of Private Sector Banks

Profile of Customers	Number	Percentage
Gender		
Male	179	59.67
Female	121	40.33
Age		
21 to 30 Years	60	20.00
31 to 40 Years	89	29.67
41 to 50 Years	87	29.00
51 to 60 Years	64	21.33
Education		
Secondary	52	17.33
Higher Secondary	72	24.00

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Under Graduation	98	32.67
Post Graduation	78	26.00
Monthly Income		
Less than Rs.25,000	56	18.67
Rs.25,001 – Rs.35,000	112	37.33
Rs.35,001 – Rs.45,000	82	27.33
More than Rs.45,000	50	16.67
Marital Status		
Married	229	76.33
Unmarried	71	23.67

5.2. FACTORS AFFECTING ADOPTION OF MOBILE BANKING OF PRIVATE SECTOR BANKS BY CUSTOMERS

To ascertain factors affecting adoption of mobile banking of private sector banks by customers, the exploatory factor analysis is done and the result is given in Table-2. Kaiser-Meyer-Olkin test value for the aim of measuring sampling adequacy is 0.874 and Chi-square value for Sphericity test of Bartlett is 0.0043, it is significant in one per cent level. These reveal method of factor analysis is correct. Principal Component Analysis is employed to get factors through varimax rotation and it is converged in 10^{th} iterations.

Table-2: Factors Affecting Adoption of Mobile Banking of Private Sector Banks by Customers

Factor	Variables	Factor Loadings (Rotated)	Eigen Value	Variation (%)	Name of Factor
I	Easy to learn	0.70	3.39	23.74	**Ease of Use**
	Clear interaction	0.68			
	Easy for transactions	0.71			
	Easy operations	0.69			
	Easy to access	0.66			
	Minimum effort	0.65			
II	Poor privacy	0.67	2.27	19.96	**Risk**
	Inadequate security	0.63			
	Leakage of personal information	0.69			
	Uncertainty of technology	0.65			
	Failure of network	0.62			
III	Fast transactions	0.69	1.16	17.35	**Usefulness**
	Easy to carry tasks	0.66			
	Relative advantage	0.68			
	Quality services	0.62			
IV	Competitiveness	0.65	1.05	14.62	**Efficiency**
	Timeliness	0.63			
	Reduction of paper work	0.60			
	Total	-	-	75.67	-

Cronbach's Alpha value is 0.88 displaying each measure has acceptable level of internal consistency. Four factors are obtained having 75.67 of per cent of variation on variables of the present study.

Factor - I covers easy to learn, clear interaction, easy for transactions, easy operations, easy to access and minimum effort. Hence, this factor is stated as **Ease of Use** and it shares 23.74 per cent of variation.

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Factor - II consists of poor privacy, inadequate security, leakage of personal information, uncertainty of technology and failure of network. Therefore, this factor is described as **Risk** and it shares 19.96 per cent of variation.

Factor - III comprises of fast transactions, easy to carry tasks, relative advantage and quality services. Thus, this factor is denoted as **Usefulness** and it shares 17.35 per cent of variation.

Factor - IV contains competitiveness, timeliness and reduction of paper work. So, this factor is labeled as **Efficiency** and it shares 14.62 per cent of variation.

Ease of use, risk, usefulness and efficiency are affecting adoption of mobile banking of private sector banks by customers.

5.3. FACTORS AFFECTING ADOPTION OF MOBILE BANKING AND PROFILE OF CUSTOMERS OF PRIVATE SECTOR BANKS

The relation between factors affecting adoption of mobile banking and profile of customers of private sector banks is given below.

5.3.1. Gender and Factors Affecting Adoption of Mobile Banking of Private Sector Banks

The relation gender of customers and factors affecting adoption of mobile banking of private sector banks is given in Table-3.

Table-3: Gender and Factors Affecting Adoption of Mobile Banking of Private Sector Banks

Gender	N	Mean	Standard Deviation	t-Value	Sig.
Male	179	66.41	7.77	5.230**	.000
Female	121	65.25	8.35		

** *Significant at 1% level*

Mean value of factors affecting adoption of mobile banking of private sector banks for male and female customers are 66.41 and 65.25 respectively which explains factors affecting adoption of mobile banking of private sector banks is higher for male in comparison with female customers.

The t-value of 5.230 is significant demonstrating significant difference exits between gender of customers and factors affecting adoption of mobile banking of private sector banks.

5.3.2. Age and Factors Affecting Adoption of Mobile Banking of Private Sector Banks

The relation between age of customers and factors affecting adoption of mobile banking of private sector banks is given in Table-4.

Table-4: Age and Factors Affecting Adoption of Mobile Banking of Private Sector Banks

Age	N	Mean	Standard Deviation	F-Value	Sig.
21 to 30 Years	60	65.93	6.96	6.461**	.000
31 to 40 Years	89	65.90	7.80		
41 to 50 Years	87	65.47	8.60		
51 to 60 Years	64	66.64	8.53		

** *Significant at 1% level*

Mean value of factors affecting adoption of mobile banking of private sector banks for customers in age of 21 to 30 years, 31 to 40 years, 41 to 50 years and 51 to 60 years are 65.93, 65.90, 65.47 and 66.64 respectively which explains factors affecting adoption of mobile banking of private sector banks is higher for customers in age of 51 to 60 year in comparison with other age groups.

The F-value of 6.461 is significant demonstrating significant difference exits between age of customers and factors affecting adoption of mobile banking of private sector banks.

5.3.3. Education and Factors Affecting Adoption of Mobile Banking of Private Sector Banks

The relation education of customers and factors affecting adoption of mobile banking of private sector banks is given in Table-5.

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Table-5: Education and Factors Affecting Adoption of Mobile Banking of Private Sector Banks

Education	N	Mean	Standard Deviation	F-Value	Sig.
Secondary	52	65.06	8.60	7.817**	.000
Higher Secondary	72	67.83	7.28		
Under Graduation	98	65.33	8.04		
Post Graduation	78	65.55	8.10		

** *Significant at 1% level*

Mean value of factors affecting adoption of mobile banking of private sector banks for customers with education of secondary, higher secondary, under graduation and post graduation are 65.06, 67.83, 65.33 and 65.55 respectively which explains factors affecting adoption of mobile banking of private sector banks is higher for customers with higher secondary in comparison with other educational level.

The F-value of 7.817 is significant demonstrating significant difference exits between education of customers and factors affecting adoption of mobile banking of private sector banks.

5.3.4. Monthly Income and Factors Affecting Adoption of Mobile Banking of Private Sector Banks

The relation monthly income of customers and factors affecting adoption of mobile banking of private sector banks is given in Table-6.

Table-6: Monthly Income and Factors Affecting Adoption of Mobile Banking of Private Sector Banks

Monthly Income	N	Mean	Standard Deviation	F-Value	Sig.
Less than Rs.25,000	56	66.98	8.95	7.925**	.000
Rs.25,001 – Rs.35,000	112	66.14	7.40		
Rs.35,001 – Rs.45,000	82	65.87	8.26		
More than Rs.45,000	50	64.44	7.85		

** *Significant at 1% level*

Mean value of factors affecting adoption of mobile banking of private sector banks for customers get monthly income of less than Rs.25,000, Rs.25,001 – Rs.35,000, Rs.35,001 – Rs.45,000 and more than Rs.45,000 are 66.98, 66.14, 65.87 and 64.44 respectively which explains factors affecting adoption of mobile banking of private sector banks is higher for customers with get monthly income of less than Rs.25,000 in comparison with other monthly income groups.

The F-value of 7.925 is significant demonstrating significant difference exits between monthly income of customers and factors affecting adoption of mobile banking of private sector banks.

5.3.5. Marital Status and Factors Affecting Adoption of Mobile Banking of Private Sector Banks

The relation marital status of customers and factors affecting adoption of mobile banking of private sector banks is given in Table-7.

Table-7: Marital Status and Factors Affecting Adoption of Mobile Banking of Private Sector Banks

Marital Status	N	Mean	Standard Deviation	t-Value	Sig.
Married	229	66.61	7.71	2.614**	.009
Unmarried	71	63.79	8.65		

** *Significant at 1% level*

Mean value of factors affecting adoption of mobile banking of private sector banks for customers of married and unmarried are 66.61 and 63.79 respectively which explains factors affecting adoption of mobile banking of private sector banks is higher for married in comparison with unmarried customers.

The t-value of 2.614 is significant demonstrating significant difference exits between marital status of customers and factors affecting adoption of mobile banking of private sector banks.

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5.4. EFFECTIVENESS OF FACTORS AFFECTING ADOPTION OF MOBILE BANKING OF PRIVATE SECTOR BANKS ON LEVEL OF ADOPTION BY CUSTOMERS

To appraise effectiveness of factors affecting adoption of mobile banking of private sector banks on level of adoption by customers, regression analysis is applied and the results are given in Table-8. Adjusted R^2 is 0.59 and R^2 is 0.61 and these are explicating the regression model is in good fit. F-value is 24.630 as it illustrates the model is significance.

Table-8: Effectiveness of Factors Affecting Adoption of Mobile Banking of Private Sector Banks on Level of Adoption by Customers

Factors Affecting Adoption of Mobile Banking	Partial Regression Co-efficients	t-Value	Sig.
Constant	1.012**	12.158	.000
Ease of Use (X_1)	.350**	6.360	.000
Risk (X_2)	-.325**	5.875	.000
Usefulness (X_3)	.378**	6.924	.000
Efficiency (X_4)	.296**	5.482	.000
R^2	0.61	-	-
Adjusted R^2	0.59	-	-
F	24.630**	-	.000

** *Significant at 1 % level*

Usefulness, ease of use and efficiency have significant and positive effect, while, risk has negative and significant effect on level of adoption of mobile banking of private sector banks among customers.

6. CONCLUSION

The foregoing analysis reveals that ease of use, risk, usefulness and efficiency are affecting adoption of mobile banking by customers of private sector banks. Significant difference is there in factors affecting adoption of mobile banking and profile of customers of private sector banks.

Usefulness, ease of use and efficiency have significant and positive effect, while, risk has negative and significant effect on level of adoption of mobile banking of private sector banks among customers. In order to improve level of adoption of mobile banking of private sector banks by customers, private sector banks should make transactions and operations very easy and must provide clear interaction and take minimal effort by customers for mobile banking. Private sector banks should ensure privacy, security, protection of personal information of customers and they must use advanced technologies and uninterrupted networks. Besides, they should provide fast transactions, high quality and timely services to their customers to improve their level of adoption of mobile banking.

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