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AN EMPIRICAL STUDY ON THE INFLUENCE OF GENDER ON MOBILE BANKING SERVICES

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Abstract *Competition has compelled the banks to be creative and innovative by offering value added services. In an attempt to provide value added services, the banking industry have changed from paper-based banking solutions provider to the latest of the technologies like online banking, mobilebanking, etc. to offer services at the convenience and comfort of its customers. Mobile banking helps the customer to connect to a bank via a mobile device such as cell phone, smartphone or personal digital assistant. The study was undertaken to know the role of gender in determining the satisfaction with factors of mobile banking services. This study uses t-test for determining the influence of gender on mobile banking services offered by banks. Regression analysis was also used to predict the role of 12 independent variables on the satisfaction with mobile banking services related to male and female customers. The study found that 3 factors namely guidance and support, user controllable and usefulness influenced the satisfaction related to mobile banking services for both the genders while flexibility influenced only the male customer.*

Keywords: *Mobile Banking, Satisfaction, Usefulness*

Introduction

Mobile phone is an integral part of customers' lives. These devices are also equipped with Internet connection, thus they are becoming a channel that offers enormous potential. Mobile banking provides a new opportunity to banks to extend their services to customer and improve their competitiveness (Kohli, 2004), for value-added mobile services (Lee, McGoldrick, Keeling, & Doherty, 2003) and for interactive banking transaction (Mattila, 2004). Customers have become less willing to visit traditional branches, less loyal, more receptive to new electronic channels and more sophisticated in demanding better service quality including 24 hour service availability (Coelho & Easingwood, 2003). Therefore, it has been argued that whereas today internet banking services provide huge economic benefits for the banks, mobile services serve rather as a way to offer value added services to customers (Laukkanen, Sinkkonen, Kivija¨rvi, & Laukkanen, 2007).

Despite all the benefits, consumers have been reluctant to adopt mobile banking services, in part because customers have grown comfortable with already a low cost service online (Kwiatkowski, 2010) and cause of inferior user experience compared with fixed Internet (Gillespie, 2007). Based on a study by KPMG of more than 4,000 people in 19 countries, Seidel (2009) reported that an impressive majority (91 percent) of US respondents had never tried conducting banking through a mobile device.

Rationale

Prior studies have documented the need of mobile banking services in the society (for instance, Amin, Muhammad, Hamid, & Lada, 2006; Luarn & Lin, 2005; Mattila, 2004). Particularly, according to Hernan and Rosa (2010), there is no much research on the moderating impact of gender in mobile banking adoption up to now. Men were significantly more likely to use m-banking than women. Hence, Rogers' (2003) study support the view that indeed gender may have a significant role in innovation adoption. Thus, gender differences deserve more attention in innovation diffusion studies.

Literature Review

According to Sangle and Awasthi (2011), advanced mobile technologies help banks in offering new services like viewing account details, fund transfer, balance enquiry, loan details, bill payments, enquiry about credit card and demat account, and add value to existing ones by disseminating

the information at user defined time and place. And they identified 9 factors related to mobile banking services namely personal innovativeness, compatibility, perceived usefulness, perceived ease of use, context, perceived value, perceived risk, perceived cost; and perceived trust. Various studies are done to understand the factors related to mobile banking. Table 1 shows factors identified by different authors related to mobile banking.

Objective of the Study

- To comparatively analyse the role of mobile banking services offered by banks in influencing the satisfaction of male and female customers.

Table 1: Factors Identified by Different Authors

Authors and Studies	Factors
Sathye(1999); Brown,Cajee, Davies, and Stroebel (2003); Luarn and Lin (2005)	Security and privacy
Suoranta (2003)	convenience, access to the service regardless of time and place, privacy and savings in time and effort
Laukkanen and Kiviniemi (2010)	Information and guidance
Brown *et al*. (2003)	Relative advantage, trialability, number of banking services, and risk
Suoranta and Mattila(2004)	Information sources, age, and household income.
Rogers (2003); Cruz,Neto, Munoz-Gallego, and Laukkanen (2010)	Lack of information
Laforet and Li (2005)	Awareness, confidential and security, past experience with new technology
Lee *et al*. (2003); Laforet and Xyaoyan (2005); Rogers (2003)	Lack of observability
Davis et al. (1989) ; Davis (1989) ; Venkatesh and Davis (2000); Pikkarainen et al. (2006); Lee *et al*. (2003); Mattila et al. (2004)	Complexity
Luarn and Lin (2005); Venkatesh and Davis (2000); Wang and Liao(2007)	Perceived self-efficacy, financial costs, credibility, easy-of-use, and usefulness
Brazil Pedro Cruz and Tommi Laukkanen (2010)	Perception of cost, risk, low perceived relative advantage and complexity
Laukkanen (2007)	location free and efficiency
Davis (1986); Davis et al. (1989) (þ); Davis (1989) (þ); Venkatesh and Davis (2000) (þ); Pikkarainen et al. (2006)	Lack of relative advantage
Luarn and Lin (2005); Gerrard et al. (2003) ; Rogers (2003); Laforet and Xyaoyan (2005)	Cost
Amin *et al*.(2008)	Credibility
Yang (2005)	Location-free conveniences, cost effective, and fulfill personal banking needs, concerns on security and basic fees
Cruz et al. (2010)	cost barrier, perceived risk, unsuitable device, complexity, and lack of information.
Riquelme and Rios (2010)	Usefulness, social norms, risk influences the intention to adopt mobile banking
Lee *et al*. (2003); Pikkarainen et al. (2006) ;Lee *et al*. (2009); Brown *et al*. (2003)	Perceived risk
Puschel,Mazzon, and Hernandez(2010)	Relative advantages, visibility, compatibility, and perceived easy-of-use
Natarajan, Balasubrmanian, and Manickavasagam (2010)	Purpose, perceived risk, benefits, and requirements
Lee *et al*. (2003); Laukkanen and Lauronen (2005); Laukkanen (2007a); Cruz *et al*. (2010)	Unsuitable device
Koenig-Lewis,Palmer, and Moll (2010)	perceived usefulness, compatibility, and risk
Sripalawat, Thongmak, and Ngramyarn (2011)	Subjective norm, perceived usefulness and self-efficacy.
Dasgupta, Paul, and Fuloria (2011)	Perceived usefulness, easy-of-use, image, value, self-efficacy, and credibility.

Research Methodology

The Study

The study is exploratory in nature and focuses on analyzing the general perception of customers belonging to different genders towards the implementation of mobile banking services in banks.

The Sample

The sample of the study constituted of 200 respondents from the city of Indore who avail mobile banking services offered by banks. The respondents were selected through non-probability convenience sampling method.

Tools for Data Collection

A self-structured questionnaire is used for the purpose of collecting data from the respondents. The questionnaire adopted in this study consisted of 12 independent variables for collecting responses on mobile banking. All items were measured by responses on a five-point Likert scale in agreement with statements, ranging from 1= Strongly Disagree to 5= Strongly Agree.

Tools for Data Analysis

Reliability of the measures was assessed with the use of Cronbach's alpha. Cronbach's alpha allows us to measure the reliability of different variables. As a general rule a coefficient greater than or equal to 0.7 is considered acceptable and is a good indicator of reliability. In the present study, the reliability of the questionnaire comes to be 0.96. Hence, the questionnaire was considered reliable for the study. For comparing the perception of young and old customers, Anova was used for data analysis. According to Field (2009), regression analysis enables us to predict future based on values of predictive variables. Multiple regression model is used for our study to explore and maximise prediction (Pedhazur, 1997). An important step in a multiple regression analysis is to ensure that the assumption of no multicollinearity has been met. Pearson Coefficient of Correlation was calculated among the twelve predictive variables. As none of the correlations reached the .80 threshold, the analysis shows that no two variables are closely related. Since the value of Durbin Watson is close to 2 (1.259 for male customers and 1.999 for female

Table 2: Male and Female Consumer Perception Regarding Mobile Banking Services

Independent Samples Test									
		Sig.	**t**	**df**	**Sig. (2-tailed)**	**Mean Diff**	**Std. Error Diff**	**95% Confidence Interval of the Difference**	
								Lower	Upper
	Equal variances assumed						1.214171	1.030475	5.819207
	Equal variances not assumed		2.750158	164.2021	0.006625	3.424841	1.245325	0.965926	5.883756

Table 3(a): Coefficient of Correlation between Different Factors as Perceived by Male Consumers

	S	**U**	**GS**	**SS**	**CS**	**F**	**C**	**T**	**R**	**UC**	**I**	**EFS**	**EC**
Satisfaction (S)	1.00	.668	.752	.537	.456	.456	.605	.524	.388	.350	.531	.417	.398
Usefulness (U)	.668	1.00	.730	.394	.535	.218	.559	.567	.138	.302	.706	.122	.228
Guidance & support (GS)	.752	.730	1.00	.678	.575	.425	.699	.653	.558	.546	.626	.510	.526
Safety and security (SS)	.537	.394	.678	1.00	.557	.614	.690	.649	.767	.714	.388	.678	.558
Completeness (CS)	.456	.535	.575	.557	1.00	.597	.777	.753	.613	.593	.540	.354	.513
Flexibility (F)	.456	.218	.425	.614	.597	1.00	.672	.632	.633	.699	.330	.594	.510
Convenience (C)	.605	.559	.699	.690	.777	.672	1.00	.779	.602	.571	.573	.479	.569
Time saver (T)	.524	.567	.653	.649	.753	.632	.779	1.00	.623	.636	.567	.532	.495
Reliability (R)	.388	.138	.558	.767	.613	.633	.602	.623	1.00	.731	.240	.663	.680
User Controllable (UC)	.350	.302	.546	.714	.593	.699	.571	.636	.731	1.00	.365	.561	.434
Interactive (I)	.531	.706	.626	.388	.540	.330	.573	.567	.240	.365	1.00	.159	.199
Error Free System (EFS)	.417	.122	.510	.678	.354	.594	.479	.532	.663	.561	.159	1.00	.525
Economic Charges (EC)	.398	.228	.526	.558	.513	.510	.569	.495	.680	.434	.199	.525	1.00

Table 3(b): Model Summary Related to Perception of Male Consumers Regarding Mobile Banking Services

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
4	.815d	.664	.652	1.161	.036	11.305	1	104	.001	1.259

Table 3(c): Coefficients Regarding Mobile Banking Services Related to Perception of Male Consumers

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta			
4	(Constant)	-6.131	.677		-9.058	.000	
	Guidance and Support	1.553	.266	.562	5.833	.000	
	Usefulness	.495	.157	.266	3.154	.002	
	Flexibility	.937	.206	.363	4.544	.000	
	User Controllable	-.675	.201	-.291	-3.362	.001	

Table 4(a): Correlation Coefficient between Different Factors as Perceived by Female customers

	S	U	GS	SS	CS	F	C	T	R	UC	I	EFS	EC
Satisfaction(S)	1	1	0.6	1	0.61	0.6	0.7	0.4	0.5	0	0	0.5	0.42
Usefulness (U)	0.7	1	0.7	1	0.67	0.8	0.8	0.5	0.5	1	1	0.7	0.57
Guidance & support (GS)	0.6	1	1	1	0.86	0.8	0.8	0.6	0.8	1	1	0.6	0.51
Safety and security (SS)	0.6	1	0.8	1	0.75	0.8	0.8	0.5	0.8	1	0	0.7	0.49
Completeness (CS)	0.6	1	0.9	1	1	0.8	0.8	0.6	0.7	1	1	0.7	0.47
Flexibility (F)	0.6	1	0.8	1	0.8	1	0.9	0.6	0.6	1	1	0.7	0.56
Convenience (C)	0.7	1	0.8	1	0.83	0.9	1	0.6	0.6	1	1	0.7	0.49
Time saver (T)	0.4	0	0.6	1	0.63	0.6	0.6	1	0.7	1	1	0.7	0.54
Reliability (R)	0.5	0	0.8	1	0.74	0.6	0.6	0.7	1	1	1	0.6	0.51
User Controllable (UC)	0.4	1	0.7	1	0.64	0.7	0.7	0.7	0.7	1	1	0.7	0.58
Interactive (I)	0.3	1	0.6	0	0.65	0.6	0.7	0.8	0.6	1	1	0.6	0.61
Error Free System (EFS)	0.5	1	0.6	1	0.66	0.7	0.7	0.7	0.6	1	1	1	0.65
Economic Charges (EC)	0.4	1	0.5	0	0.48	0.6	0.5	0.5	0.5	1	1	0.7	1

Table 4(b): Model Summary Related to Perception of Female Consumers Regarding Mobile Banking Services

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
3	.748[c]	.560	.545	1.107	.022	4.332	1	87	.040	1.999

Table 4(c): Coefficients Regarding Mobile Banking Services Related to Perception of Female Consumers

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	-1.431	.463		-3.092	.003
	Usefulness	.840	.157	.555	5.366	.000
	Guidance and Support	.656	.184	.413	3.561	.001
	User Controllable	-.390	.187	-.222	-2.081	.040

customers), hence, for prediction and modeling, the data was subjected to Regression Analysis (Tables 3(b) and 4(b)).

Hypothesis

H_{01}: There is no significant difference in the perception of male and female customers towards the mobile banking services provided by banks.

Results and Discussion

Looking at Table 2, we found that p value is less than 0.05, hence, null hypothesis is rejected this means that there is a significant difference between the perception of male and female customers regarding the mobile banking services in banks. The results are in accordance with the study by Pijpers, Bemelmans, Heemstra, and Montfort (2001) which showed that males are more positive about m-commerce than females.

Referring to the Tables 3(a) and 4(a) , we find that all the 12 predictive variables are related with the satisfaction related to mobile banking services for both male and female customers, since the Pearson's coefficient of correlation is positive in both the cases between all the variables and satisfaction related to mobile banking.

The purpose of the study was to discover the relationship between each individual predictive variable and the dependent variable. Using the step wise method of simultaneous multiple regression, 12 predictive variables were examined. It was found that 4 variables participated in determining usage related to mobile banking services by male customers. The R Square in a multiple regression gives explanatory power and represents explained variance that can be contributed to all the predictors in a progression. Tables 3(b) and 4(b) show that the value of R Squared is .664 or 66.4% of the variance in the dependent variable (usage of mobile banking services) for male customers and .56 or 56 % of the variance in the dependent variable (usage of mobile banking services) for female customers . The calculated determination factor R^2 shows that out of 12 available variables, 4 have meaning for male customers and they explain 66.4% of the changes of dependent variable, while 3 have meaning for female customers and they explain 56% of the changes of dependent variable. Tables 3(c) and 4(c) show the results of the predictive variables in the step wise multiple regression analysis. This math equation shows the relation between the dependent and independent variables is as follows:

Male Customers:

Y = -6.131+1.533 (Guidance and Support) +.495 (Usefulness)+.937(Flexibility) -.675(User Controllable)

Female Customers:

Y = -1.431+.840 (Usefulness)+ .656 (Guidance and Support) -.390(User Controllable)

The study by Yang (2005) is partly in accordance to our study which found that gender influences perceived ease of use and usefulness. Amin *et al*. (2006) found that females are more concerned by security issues than males, whereas males pay more attention to effectiveness. In accordance to our study, Kleijnen *et al*. (2004) and Leung and Wei (2000) found that perceived usefulness has been the strongest predictor of adoption intentions, while perceived ease of use has received mixed results. In addition, social influence (SN), perceived system quality, perceived credibility (PC), initial trust, and self-efficacy have been found to positively influence adoption intentions, and perceived cost and perceived risk have been negatively associated with mobile banking adoption (Kim, Shin, & Lee, 2007; Kleijnen *et al*., 2004; Luarn & Lin, 2005; Suoranta, 2003; Suoranta & Mattila, 2004). In some studies, convenience and service speed have been identified to enhance customer adoption intention while system safety and service charges have been viewed as inhibitors (Suoranta, 2003; Suoranta & Mattila, 2004). From the findings by Hernan and Rosa (2010), it was inferred that usefulness, social norms and social risk, are the factors that influence the most the intention to adopt mobile banking services. Female users of mobile phones that have conducted electronic banking perceive that ease of use leads to perception of more usefulness of the device to conduct banking services. According to Laukkanen (2007),

efficiency, convenience, and safety are the most important desired end-states of bank customers determining the differences in customer value perceptions between internet and mobile banking. The study by Chian-Son Yu (2012) discovered that gender significantly moderated the effects of performance expectancy and perceived financial cost on behavioural intention, and the age considerably moderated the effects of facilitating conditions and perceived self-efficacy on actual adoption behaviour. Al-Jabriand Sohail (2012) found that relative advantage, compatibility, and observability have positive impact on adoption. Contrary to the findings in extant literature, trialability and complexity have no significant effect on adoption. Perceived risk has a negative impact on adoption. The resultsby Laukkanen and Pasanen (2008) indicate that only age ($p < 0.0005$) and gender ($p = 0.010$) differentiate these two groups of customers, while education ($p = 0.957$), income ($p = 0.624$), occupation ($p = 0.596$) and size of the household ($p = 0.151$) were found to be insignificant in differentiating the groups. The results offer service providers better knowledge of the typical mobile banking user thus adding value to their marketing actions in the field of electronic banking.

Conclusion and Suggestion

Consumers in general have different preferences for different channels of banking services therefore banks that offer the more alternative channels will catch a greater number of consumers. In particular, to attract consumers to use their wireless device for banking services, banks may emphasize to show ease in operation on a mobile phone. Our study supports the view that before embarking on the question of extending m-commerce facilities, it is necessary to understand the impact of gender on consumers. Our findings suggest that marketing practices may need to be different for the two groups. Our study identified that female customers give more importance to usefulness, guidance and support and user controllable feature of mobile devices for performing mobile banking, while male customer, besides giving importance to these features, also give importance to Flexibility. Since flexibility, seem to affect more males, therefore marketing communication may emphasize the inclusiveness of the use of mobile phone together with the flexibility. Since, usefulness, guidance and support and user controllable feature plays the most determining role in the adoption of banking services. Hence, it is recommended to provide clues about how useful it is to be connected wireless to conduct banking transactions from everywhere and anywhere. Besides, customers must be given guidance and support at each stage for encouraging mobile banking.

Limitations

The study was done by taking the views of the 200 respondents from the Indore city. The study could have more reliable and would have yield different results if the target demographic was broader than now. The study was conducted to research the various impacts of mobile banking services but in current era, mobile banking services are launched at a very fast pace and every improved version tries to enhance the features of the banking services. This also limits the scope of the research as it may yield different results if done at a different time.

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