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A STUDY ON CONSUMER ACCEPTANCE OF M-BANKING IN TIRUCHIRAPPALLI CITY

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ABSTRACT

This paper mainly identify the key motivators for consumer acceptance of mobile phone banking (M-Banking), mostly those that affect the consumer attitude towards the intention to use the latest technology in banking sector – the self service banking technology. A web-based survey was undertaken where respondents completed questionnaire about their perception towards M-banking perceived usefulness, problems with use of M-banking, and the reason for using M-Banking service. The customer using Mobile banking technology effectively, the database was collected from the Bank and the questionnaire was sent through mail, and the customers return back through mail. Hence the sample size for the study is 500 respondents by adopting Purposive simple random sampling technique. Both primary and secondary data were used in the study. ANOVA, Correlation and multiple regressions were used to determine whether theses factors influence consumer's attitude and intention to use M-Banking. Perceived usefulness was found to influence the consumer to use the M-Banking technology. Awareness programmes should be organized by the Banks which attracts the customers to use the new technology M-Banking effectively and makes the Banking – Happy Banking safely and securely.

KEYWORDS
M-banking, Technology, Banking, Mobile Communication Systems, Services.

INTRODUCTION

Mobile banking (also known as M-Banking, mbanking, SMS Banking) is a term used for performing balance checks, account transactions, payments, credit applications and other banking transactions through a mobile device such as a mobile phone or Personal Digital Assistant (PDA). The earliest mobile banking services were offered over SMS. With the introduction of the first primitive smart phones with WAP support enabling the use of the mobile web in 1999, the first European banks started to offer mobile banking on this platform to their customers.
Mobile banking has until recently (2010) most often been performed via SMS or the Mobile Web. Apple's initial success with iPhone and the rapid growth of phones based on Google's Android (operating system) have led to increasing use of special client programs, called apps, downloaded to the mobile device.

TRENDS IN MOBILE BANKING

The advent of the Internet has enabled new ways to conduct banking business, resulting in the creation of new institutions, such as online banks, online brokers and wealth managers. Such institutions still account for a tiny percentage of the industry. Over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world and it is still growing at a rapid pace. According to the GSM Association and Ovum, the number of mobile subscribers exceeded 2 billion in September 2005, and now (2009) exceeds 2.5 billion (of which more than 2 billion are GSM).
According to a study by financial consultancy Celent, 35% of online banking households will be using mobile banking by 2010, up from less than 1% today. Upwards of 70% of bank center call volume is projected to come from mobile phones. Mobile banking will eventually allow users to make payments at the physical point of sale. "Mobile contactless payments" will make up 10% of the contactless market by 2010. Another study from 2010 by Berg Insight forecasts that the number of mobile banking users in the US will grow from 12 million in 2009 to 86 million in 2015. The same study also predicts that the European market will grow from 7 million mobile banking users in 2009 to 115 million users in 2015.
Many believe that mobile users have just started to fully utilize the data capabilities in their mobile phones. In Asian countries like India, China, Bangladesh, Indonesia and Philippines, where mobile infrastructure is comparatively better than the fixed-line infrastructure, and in European countries, where mobile phone penetration is very high (at least 80% of consumers use a mobile phone), mobile banking is likely to appeal even more.

MOBILE BANKING BUSINESS MODELS

A wide spectrum of Mobile/branchless banking models is evolving. However, no matter what business model, if mobile banking is being used to attract low-income populations in often rural locations, the business model will depend on banking agents, i.e., retail or postal outlets that process financial transactions on behalf telcos or banks. The banking agent is an important part of the mobile banking business model since customer care, service quality, and cash management will depend on them. Many telcos will work through their local airtime resellers. However, banks in Colombia, Brazil, Peru, and other markets use pharmacies, bakeries, etc.
These models differ primarily on the question that who will establish the relationship (account opening, deposit taking, lending etc.) to the end customer, the Bank or the Non-Bank/Telecommunication Company (Telco). Another difference lies in the nature of agency agreement between bank and the Non-Bank. Models of branchless banking can be classified into three broad categories - Bank Focused, Bank-Led and Non bank-Led.

(i) Bank-focused model

The bank-focused model emerges when a traditional bank uses non-traditional low-cost delivery channels to provide banking services to its existing customers. Examples range from use of automatic teller machines (ATMs) to internet banking or mobile phone banking to provide certain limited banking services to banks' customers. This model is additive in nature and may be seen as a modest extension of conventional branch-based banking.

(ii) Bank-led model

The bank-led model offers a distinct alternative to conventional branch-based banking in that customer conducts financial transactions at a whole range of retail agents (or through mobile phone) instead of at bank branches or through bank employees. This model promises the potential to substantially increase the financial services outreach by using a different delivery channel (retailers/ mobile phones), a different trade partner (telco / chain store) having experience and target market distinct from traditional banks, and may be significantly cheaper than the bank-based alternatives. The bank-led model may be implemented by either using correspondent arrangements or by creating a JV between Bank and Telco/non-bank. In this model customer account relationship rests with the bank

(iii) Non-bank-led model

The non-bank-led model is where a bank has a limited role in the day-to-day account management. Typically its role in this model is limited to safe-keeping of funds. Account management functions are conducted by a non-bank (e.g. telco) who has direct contact with individual customers.

MOBILE BANKING SERVICES

Mobile banking can offer services such as the following:

- Account Information
- Mini-statements and checking of account history
- Alerts on account activity or passing of set thresholds
- Monitoring of term deposits
- Access to loan statements
- Access to card statements
- Mutual funds / equity statements
- Insurance policy management
- Pension plan management
- Status on cheque, stop payment on cheque
- Ordering cheque books
- Balance checking in the account
- Recent transactions
- Due date of payment (functionality for stop, change and deleting of payments)
- PIN provision, Change of PIN and reminder over the Internet
- Blocking of (lost, stolen) cards

PAYMENTS, DEPOSITS, WITHDRAWALS, AND TRANSFERS

- Domestic and international fund transfers
- Micro-payment handling
- Mobile recharging
- Commercial payment processing
- Bill payment processing
- Peer to Peer payments
- Withdrawal at banking agent
- Deposit at banking agent

FUTURE FUNCTIONALITIES IN MOBILE BANKING

Based on the 'International Review of Business Research Papers' from World business Institute, Australia, following are the key functional trends possible in world of Mobile Banking. With the advent of technology and increasing use of smart phone and tablet based devices, the use of Mobile Banking functionality would enable customer connect across entire customer life cycle much comprehensively than before. With this scenario, current mobile banking objectives of say building relationships, reducing cost, achieving new revenue stream will transform to enable new objectives targeting higher level goals such as building brand of the banking organization. Emerging technology and functionalities would enable to create new ways of lead generation, prospecting as well as developing deep customer relationship and mobile banking world would achieve superior customer experience with bi-directional communications.

LITERATURE REVIEW

The proliferation of mobile phone adoption, together with advances in mobile technology, has accelerated the development of M-services (Sullivan Mort and Drennan, 2007; Wang et al., 2006). M-services are defined as “enhanced information services accessed while mobile” (Sullivan Mort and Drennan, 2007, p. 302). An emerging component of M-services that could become a significant revenue source to both banks and telecom service providers is M-banking (Nysveen et al., 2005). M-banking involves conducting account balance and transaction history inquiries, funds transfers, bill payments, stock trades, portfolio management, as well as insurance ordering, via a mobile device (Suoranta and Mattila, 2004). It provides value for consumers, above other banking channels, through ubiquitous access, time convenience, and mobility (Anckar and D’Incau, 2002; Luarn and Lin, 2005). Despite its many advantages, the use of mobile phones in banking services is still in its infancy and Internet banking retains its position as the leading channel in electronic banking (Laukkanen, 2007a; Laukkanen and Cruz, 2009). The question therefore arises as to what are the key motivators and inhibitors of M-banking adoption.

It is argued that the complexity of service models, and the convergence of technologies and services, has resulted in limited research into the area of consumer acceptance and adoption of M-banking (Suoranta and Mattila, 2004). Most of the existing research in the area of electronic banking covers telephone banking (e.g. Al-Ashban and Burney, 2001; Howcroft et al., 2002) or internet banking (e.g. Lichtenstein and Williamson, 2006; Mavri and Ioannour, 2006). M-banking represents an innovation where both multifaceted intangible service and a technologically innovative medium of service delivery are present (Rao and Troshani, 2007). Innovation diffusion is thus even more intricate as both technology and service aspects have an effect on the characteristics of M-banking services and subsequently, its adoption by consumers.

This paper specifically informs the understanding of technology acceptance behaviour in M-banking. This is valid considering the variation in the user characteristics, acceptance, and adoption of the electronic banking channels. For instance, Curran and Meuter (2005) reported that the significance of the factors affecting the adoption of ATMs, phone banking, and internet banking differed substantially between the channels. Furthermore, internet banking users and M-banking users were found to be divergent in their demographic characteristics. Whilst Karjaluoto et al. (2002) found that the typical Finnish user of internet banking was highly educated, relatively young, and wealthy, Laforet and Li (2005) showed that education did not influence M-banking acceptance in China. Furthermore, the average age of M-banking users was found to be much higher than the average age for internet banking users within China, which is consistent with the findings of Suoranta and Mattila’s (2004) Finnish study. In addition, internet banking users and M-banking users also vary in their channel attribute preferences, as well as in their value perceptions about their banking activities (Laukkanen, 2007a; Laukkanen, 2007b). As such, it is argued that research into the motivators and inhibitors of customer usage of M-banking is supported, especially given its distinctiveness relative to other banking channels. This paper explains,

1. To what extent personal profiles influence in using mobile Baking?
2. Perceived usefulness of mobile banking service.
3. Problems with the use of mobile Banking
4. Reason for using mobile banking service.

METHODS

A sample design is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure that researcher would adopt in selecting items for the sample. Sample design may as well lay down the number of items for the sample. Sample design may as well lay down the number of items to be included in the sample. i.e. the size of the sample. The researcher determined the Sample design before data was collected. The study is descriptive in nature.

The customer using Mobile banking technology effectively, the database was collected from the Bank and the questionnaire was sent through mail, and the customers return back through mail. Hence the sample size for the study is 500 respondents by adopting Purposive simple random sampling technique.

TOOLS FOR DATA COLLECTION

The primary data was collected afresh for the first time and thus happen to be original character. The primary data was collected with the help of the questionnaire. A five point likert scale was used for the variables and the respondents were required to state the extent to which they agreed or disagreed with the statements in the questionnaire. Cronbach's alpha was used to measure the reliability. Cronbach's alpha is a model of internal consistency based on average inter-item correlation. Measures in this study are judged to be reliable if Cronbach's coefficient alpha is 0.7 or greater. In this research paper Cronbach's coefficient alpha is .832. The secondary data, collected from journal, Books and from internet and web site of Banks.

ANALYTICAL TOOLS

The collected data have been consolidated, tabulated and analyzed by using relevant statistical tools like, Correlation, ANOVA and Multiple regressions.

RESEARCH QUESTIONS

1. Does personal profiles influences using Mobile Banking?
2. Does M-Banking provoke perceived usefulness?

STATISTICAL ANALYSIS

ANOVA

Hypothesis: here will be no significant difference among age and intentions to use mobile Banking.

TABLE - 1

Analyzing Variable	Dimensions	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Age	Perceived Usefulness	Between Groups	.525	4	.131	.269	.897
		Within Groups	21.975	45	.488		
		Total	22.500	49			
	Problems with the use of Mobile Banking	Between Groups	1.127	4	.282	.762	.556
		Within Groups	16.653	45	.370		
		Total	17.780	49			
	Reasons for using Mobile banking service	Between Groups	1.780	4	.445	.910	.466
		Within Groups	22.000	45	.489		
		Total	23.780	49			

The above ANOVA table shows the significant difference among age and variables such as perceived usefulness, age and problems with the use of mobile banking, age and reasons for using mobile banking service. Thus, there is no significant difference among age and intentions to use mobile Banking.

ANOVA

Hypothesis: There will be no significant difference among Income and intentions to use mobile Banking.

TABLE - 2

Analyzing Variable	Dimensions	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Income	Perceived Usefulness	Between Groups	.813	2	.407	.881	.421
		Within Groups	21.687	47	.461		
		Total	22.500	49			
	Problems with the use of Mobile Banking	Between Groups	1.132	2	.566	1.597	.213
		Within Groups	16.648	47	.354		
		Total	17.780	49			
	Reasons for using Mobile banking service	Between Groups	.275	2	.138	.275	.761
		Within Groups	23.505	47	.500		
		Total	23.780	49			

The above ANOVA table shows the significant difference among income and variables such as perceived usefulness, income and problems with the use of mobile banking, income and reasons for using mobile banking service. Thus, there is no significant difference among income and intentions to use mobile Banking.

MULTIPLE CORRELATIONS

TABLE - 3

		Perceived Usefulness	Problems with the use of Mobile Banking	Reasons for using Mobile banking service
Perceived Usefulness	Pearson Correlation	1	.665**	.748**
	Sig. (2-tailed)		.000	.000
	N	500	500	500
Problems with the use of Mobile Banking	Pearson Correlation	.665**	1	.622**
	Sig. (2-tailed)	.000		.000
	N	500	500	500
Reasons for using Mobile banking service	Pearson Correlation	.748**	.622**	1
	Sig. (2-tailed)	.000	.000	
	N	500	500	500

**. Correlation is significant at the 0.01 level (2-tailed).

The above table gives the inter correlation coefficients between the dimensions, Perceived usefulness, Problems with the use of Mobile banking, Reasons for using Mobile Banking service.

PERCEIVED USEFULNESS

The correlation between the variables perceived usefulness and problems with the use of mobile banking was .665 which was positively correlated and highly significant, correlation between perceived usefulness and Reasons for using mobile banking services was .748 which was positively correlated and highly significant.

PROBLEMS WITH THE USE OF MOBILE BANKING

The correlation between the variables problems with the use of mobile banking and perceived usefulness was .665 which was positively correlated and highly significant, correlation between problems with the use of mobile banking and Reasons for using mobile banking services was .622 which was positively correlated and highly significant.

REASONS FOR USING MOBILE BANKING SERVICE

The correlation between the variables Reasons for using mobile banking services and perceived usefulness was .748 which was positively correlated and highly significant, correlation between Reasons for using mobile banking services and problems with the use of mobile banking was .622 which was positively correlated and highly significant.

MULTIPLE REGRESSIONS

TABLE – 4: MODEL SUMMARY

Model	R	R Square	Adjusted R Square	F (.Sig)	Std. Error of the Estimate
dimension 1	.766	.587	.569	33.403 (.000)	.457

Predictors: (Constant), Problems with the use of Mobile Banking, Perceived Usefulness

Dependent Variable: Reasons for using Mobile banking service

From the above model summary table, the R value shows the correlation among the two variables. The R value is .587. It implies the mild correlations between the variables. The R square shows the prediction of the dependent variable Reasons for using mobile banking service. The R square shows that 56.9% predicts the dependent variable (Reasons for using Mobile banking service)

The larger the F ratio there will be more variance in the dependent variable that is associated with the independent variable. The F ratio = 33.403. The statistical significance is .000 - the "Sig". So we can reject the null hypothesis that no relationship exists between the two variables. There is relationship between independent and dependent variables.

COEFFICIENTS

TABLE - 5

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.406	.418		.972	.336
	Perceived Usefulness	.617	.129	.600	4.780	.000
	Problems with the use of Mobile Banking	.257	.145	.223	1.774	.083

Dependent Variable: Reasons for using Mobile banking service

To determine if one or more of the independent variables are significant predictors of Reasons for using Mobile banking service, we examine the information provided in the coefficient table. From the two independent statements one statement is found to be statistically significant.

The standardized coefficient beta column reveals that Perceived Usefulness has a beta coefficient **.600**, which is significant (.000). Problems with the use of Mobile Banking has a beta coefficient .**223**, which is not significant (.083).

FINDINGS

PERSONAL PROFILES

Shows the personal information of the respondents were 78% of the respondents were male. Age wise distribution of the respondents shows that 36% of the respondents belonged to the age group 36 - 40 years. Marital status of the respondents shows that 72% of them were married. Occupation information of the respondents shows that 40% of the respondents were occupied in professional jobs. Income distribution shows that 46% of the respondents belonged to the income group Rs. 20,001 to 30,000.

PERCEIVED USEFULNESS

The following are the findings of the respondents regarding perceived usefulness. Perception that paying bills was cheaper through mobile banking to this 42% of the respondents agreed. Faster transmission of data to this 48% of the respondents responded moderately. Authenticate with mobile phone to internet bank to this 42% of the respondents agreed. Mobile banking offered substantially more versatile services to this 36% of the respondents responded moderately. Use services via other mobile device than mobile phone to this 46% of the respondents agreed. Controlling mobile services by voice instead of typing to this 50% of the respondents agreed. According to 50% of the respondents they agreed to have personal education on mobile banking services.

PROBLEMS WITH THE USE OF MOBILE BANKING

The following are the findings 40% of the respondents agreed that banking through mobile had the problem of slow data transmission. 44% of the respondents responded moderately towards insufficient guidance for mobile banking, 32% of the respondents disagreed that mobile banking led to malfunctions of services, 54% of the respondents agreed that mobile banking services lacked operating instructions, 38% of the respondents agreed banks offering mobile services had poor user interface facility, 34% of the respondents responded moderately towards dexterity of mobile banking services, 40% of the respondents agreed regarding lack of time in using mobile banking, 50% of the respondents agreed mobile banking was associated with general difficulties in using the services.

REASONS FOR USING MOBILE BANKING SERVICES

The following are the research findings 32% of the respondents strongly agreed that mobile banking services incurred reduced amount of expense, 46% of the respondents agreed that sufficient guidance was one of the reasons for using mobile banking, 48% of the respondents agreed that usage of mobile banking was not a disappointment to them, 36% of the respondents moderately responded towards use of mobile banking for its faster data transmission facility, 30% of the respondents strongly agreed that mobile banking was user friendly and not complicated, 36% of the respondents agreed that mobile banking services were enough versatile, 30% of the respondents disagreed that Possibility of errors was minimum than in Internet banking, 42% of the respondents agreed that using key code list with mobile phone was not complicated, 50% of the respondents agreed they used mobile phone in banking, 44% of the respondents agreed Mobile phone is a practical device for banking.

CORRELATION

The correlation table gives the inter correlation coefficients between the dimensions, Perceived usefulness, Problems with the use of Mobile banking, Reasons for using Mobile Banking service. All the dimensions were positively correlated and highly significant with each other.

MULTIPLE REGRESSIONS

The R value is .587. The R square shows the prediction of the dependent variable Reasons for using mobile banking service. The R square shows that 56.9% predicts the dependent variable (Reasons for using Mobile banking service). The F ratio = 33.403. There is relationship between independent and dependent variables.

The standardized coefficient beta column reveals that Perceived Usefulness has a beta coefficient **.600**, which is significant (.000). Problems with the use of Mobile Banking have a beta coefficient .**223**, which is not significant (.083).

SUGGESTIONS

1. New Market developing programs should organized by the banks by focusing on creating a positive attitude toward M-banking should attract consumers to this emerging electronic banking channel.
2. Specifically, marketers should emphasize M-banking's usefulness and compatibility with consumers' lifestyle, in addition to designing M-banking systems that minimize risk and cost to the consumer.
3. Perceived usefulness and compatibility were both found to have a strong positive influence on attitude and intention to use M-banking, with perceived usefulness being the most significant motivator.
4. Marketers should take advantage of the value adding characteristics of M-banking in promoting perceived usefulness and compatibility with consumers' lifestyle.
5. Consumers need to be shown how M-banking fits in with their lifestyle and needs and how useful the channel can be within that lifestyle.
6. The problems faced by the customers should be resolved and continuous monitoring and feed back should be given to the customers.
7. New valued service should be included in mobile banking technologies.
8. A common platform and operating system should be followed by all service providers.
9. All the banks service providers must ensure their customer that there will be fast data transmission.
10. Malfunction of service should be fully eradicated.

CONCLUSION

The research has served to enhance the understanding of the factors influencing new technology adoption within a service paradigm and from a consumer perspective. It has demonstrated that there are multiple factors at work throughout the diffusion process and that some are more influential than others under given circumstances. The knowledge gained by this research into the motivators and inhibitors of M-Banking is useful for practitioners who aim to maximize consumer adoption of this self-service banking technology.

This study furthers the understanding of the adoption of one of the innovative technologies that is driving service and technology convergence as an emerging service paradigm: Importantly, this research also provides a model for examining future mobile digital technology developments in the financial services sector as "customers move out of the bank queue and into the electronic age"

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