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Impact of Dimensions of Mobile Banking on User Satisfaction

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Abstract

Banks have changed from paper-based banking solutions provider to the latest of the technologies like mobile banking. Adoption of mobile-banking has received more attention in recent years, because there are more phones than computers in the market. But, like in any emerging technology, there exist barriers to the adoption of mobile banking services. This study will attempt to technically address these largely unfounded factors while helping to lay a roadmap for proper implementation of mobile banking technology. Structural Equation Modeling is used for the analysis of data. The study found that Supportive Access factor of mobile banking is associated with the user satisfaction related to mobile banking.

Keywords: Mobile banking; Efficacy; Security; Satisfaction

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INTRODUCTION

Technology has opened up new markets, new products, new services and efficient delivery channels for the banking industry. Specifically, banking industry has undergone radical changes as a consequence of the breath-taking developments in this technological revolution. Banks have changed from paper-based banking solutions provider to the latest of the technologies like online-banking, mobile-banking, etc. Also, to cater to the ever increasing consumer expectations and demand, the banking industry has these technologies to offer banking services at the convenience and comfort of its customers. New business models, processes and revolutionized distribution channels are the outcome of technical advances in the banking industry.

Mobile commerce is a natural successor to electronic Commerce. 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, smartphone or personal digital assistant (PDA) [1]. Mobile banking can also be considered as the convergence of mobile technology and financial services [2]. M-banking is a subset of banking as it allows everyone easy access to their banking activities via mobile handsets [3]. According to Palani et al. [4] Mobile banking in India is in growth; approximately 43 million urban Indians used their mobile phones to access banking services during quarter ending August, 2009, a reach of 15% among urban Indian mobile phone user. Technology providers and financial institutions believe that m-payment will reach critical mass in the next few years [5].

RATIONALE

Adoption of mobile-banking has received more attention in recent years, because there are more phone users than computer users in the market. Mobile services and their consumption have lately become a burning issue among information systems (IS) and marketing scholars [6]. At the same time, many service providers are making substantial investments to take advantage of the business opportunities offered by wireless technology. 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 [7] and the services are marginally adopted Laukkanen et al. [8]. Studies by Amin [9], Luarn [10] and Mattila [11] have also documented the need of mobile banking services in the society.

Mobile banking in India is still at a growing stage, so there is a need to understand the bank customers' acceptance of this service and to examine the factors affecting their intentions to use mobile banking. It has been found that in India not even 20% of the population use E-channels [12] only 6% out of 3100 samples of consumer surveyed across India are using the internet for banking services. Kwiatkowski [13] confirms the prediction by reporting that up to now usage of mobile banking is decidedly low, even within developed markets where mobile devices have become nearly ubiquitous.

However, technology providers and financial institutions believe that m-payment will reach critical mass in the next few years [5].

As the Internet banking is still in its growing stage, mobile banking has emerged as the next advance way of doing banking. Mobile phones make it simple to communicate with the target market and establish a stronger relationship as banks provide market compelling-needed services [14]. But, like in any emerging technology, there exist barriers to the adoption of mobile banking services. There are many reasons why technology has not been able to ride the acceptance wave and cross the hurdle and become an acceptable feature in banking. This paper is an attempt to understand the effect of different factors of mobile banking on the satisfaction related to mobile banking. In this paper, we have used Structural Equation Modeling through Smart PLS software to find out the relationship of the usage of mobile banking services with its determinants.

LITERATURE REVIEW

Mobile phones are likely to evolve as ubiquitous payment devices [15]. According to Donner [16] there is no universal form of m-banking; rather, purposes and structures vary from country to country. Goyal [17] presented a classification framework for m-banking research based on 65 m-banking papers published between 2000 and mid-2010. Rao analyzed the impact of new technology on banking sector. The technology is changing the way the business is done and opened new vistas for doing the same work differently in most cost effective manner. Tele-banking and internet banking are making forays such that branch banking may give to home banking. He provided some policies to protect their profitability. Shastri [18] studied the emergence of IT in banking sector. He highlighted some challenges faced by banks regarding IT implementation. This paper also highlighted future outlook of IT oriented banks. Uppal [12] studied the impact of Information Technology on various parameters of bank performance and concluded that Indian banking industry is fastly moving towards IT. The future of e-channels is very bright.

There are many advantages that mobile banking brings to customers. The systems offer a variety of financial functions, including micropayments to merchants, bill-payments to utilities, P2P transfers between individuals, and long-distance remittances. Mobile banking provides a new opportunity to banks to extend their services to customer and improve their competitiveness [19] includes value-added mobile services [20] offers an interactive banking transaction [21] and helps the banks in cost- saving in its operations. As such with mobile services, a bank will need to hire even less employees as people will no longer need to visit bank branches apart from certain occasions. With Indian telecom operators working on offering services like money transaction over a mobile, it may soon be possible for a bank to offer phone based credit systems. The prime benefit is the anywhere/anytime characteristics of mobile services. Mobile payments can become a complement to cash, cheques, credit cards and debit cards. It can also be used for payment of bills with access to account-based payment instruments such as electronic funds transfer, internet banking payments, direct debit and electronic bill

presentment. The customers can also request for additional information. They can have information about the deposits and withdrawals as they occur and also pre-schedule their payments. Similarly, other banking transactions like stop cheque or issue of a cheque book can be easily done via a mobile phone. This will make credit cards redundant and also aid in checking credit card fraud apart from offering enhanced customer convenience. The use of mobile technologies is thus a win-win proposition for both the banks and the bank's customers. Also, through mobile messaging, banks provide value added services to the customer at nominal costs. Mobile phone handsets, which were initially used almost exclusively for voice calls are now often used to transmit data and undertake commercial transactions [22]. Sharma [23] identified 3 factors related to mobile banking which include access problems, dissatisfaction and inability to provide knowledge. Ewe [24] showed that perceived advantage over other mediums, perceived risk, usage complexity, past experience and awareness are potentially influencing the adoption of mobile banking.

Previous studies indicate, that factors contributing to the adoption of mobile banking are related to convenience, access to the service regardless of time and place, privacy and savings in time and effort [25]. Among the various factors determining adoption of mobile banking include levels of perceived risk [2,16] interaction [3] perceived uncertainty [26], perceived usefulness, ease of use, credibility, self efficacy, perceived system quality [7,10], experience [2], financial cost [27], time saving [7,26], security and privacy [10,28], Information quality [29,30], compatibility and risk [31] perceived financial cost [10], perceived risk [32], security issues [10,33].

RESEARCH METHODOLOGY

The research is exploratory in nature and the data used for the analysis is primary in nature. The data was collected using a self structured questionnaire having 55 questions. The questionnaire was designed following a wide review of the literature on mobile banking. In a pilot study of 100 consumers of mobile banking, the analysis of collected data was done by Statistical Package for Social Science (SPSS 15.0) and MS Excel 2007. Initially, item-total correlation was calculated for all 55 items to identify insignificant items not contributing towards perception regarding mobile banking. After first iteration, 4 items showed correlation values less than 0.196 (standard coefficient of correlation value for 100 or more respondents) and were thus found insignificant and were not considered for the analysis. Out of 55, Over-all reliability was evaluated for the scale by assessing the internal consistency of the remaining 51 items using Cronbach's Alpha. The instrument had a reliability of 0.83 which proves that it is reliable and can be used for further analysis. The data was then tested for Kaiser-Meyer-Olkin Measure of sampling adequacy and Bartlett's test of sphericity. High value of KMO i.e., 0.829 > 0.05 indicate that sample is sufficient for factor analysis. The Bartlett's test of sphericity is 0.000 which is less than 0.05 indicating that there exists significant relationship among the variable. Therefore all 51 items were accepted for the final scale and subjected to Principal Component Method of Factor Analysis using Varimax Rotation. This resulted into 17 factors of usage of mobile banking namely: Effortless Recoverability (% of Var.

= 6.470), Easy Accessibility (% of Var. = 5.950), Distinguished Methodology (% of Var. = 5.820), Functional Navigation (% of Var. = 5.130), Improved Flexibility (% of Var. = 4.985), Privacy Assurance (% of Var. = 4.877), Environmental Collaboration (% of Var. = 4.816), Ever Accessibility(% of Var. = 4.514), Cost-Effective (% of Var. = 4.248), Timely Updates (% of Var. = 4.0350), new Technology Affable (% of Var. = 4.028), Friendly User Interface (% of Var. = 3.940), Ecological Friendly (% of Var. = 3.887), Enhanced Customization (% of Var. = 3.758), Knowledge Integration (% of Var. = 3.723), Effective Risk Measurement (% of Var. = 3.481) and Interactive Technology (% of Var. = 3.305). The total percent of variance for factors was 76.968 % and the Eigen values for each factor was more than one.

These 17 factors when subjected to second order factor analysis, resulted into seven imperative dimensions of e-Books. These dimensions are Effective Distinctiveness (% of Var. = 10.890%), Professed Security (% of Var. = 8.663 %), Immense Efficacy (% of Var. = 8.238 %), Supportive Access (% of Var. = 8.122), Innovative Virtual Environment (% of Var. = 7.736), Enhanced Personalization(% of Var. = 7.298) and Improved Timely Updates (% of Var. = 6.661). The total percent of variance for dimensions was 58.2 % and the Eigen values for each dimension was more than one. The details of these factors tabularized with their item loads, Eigen values and percent of variances and shown in Annexure.

Finally, a total of 1000 respondents were administered this questionnaire containing 51 questions and responses were generated to determine satisfaction of user related to mobile banking.

DEVELOPMENT OF HYPOTHESIS

Effective distinctiveness

The first dimension namely Effective Distinctiveness consisted of four factors namely Ever-Accessibility (Factor Load = 0.655), Easy Accessibility (Factor Load = 0.635), Environmental Collaboration (Factor Load = 0.587) and Ecological Friendly (Factor Load= 0.559). Mobile devices improve the quality of the service because clients can perform transactions at their convenience wherever and whenever they want it provided there is a connection [26]. Ramdhony [34] identified Convenience, time and effort savings, privacy, ubiquitous access to banking services, compatibility with lifestyle and banking needs as the main factors motivating m-banking adoption. Suoranta et al. [21] identified different mobile banking facilities such as account balance retrieval, transaction history retrieval, transfer of funds between an individual's own accounts or third party accounts, stock trading, portfolio management, and bill settlements, etc. Skeldon [35] affirms that the general and widespread acceptance of mobile applications, the increasing use of mobile phones as a tool and means for paying bills, and lifestyle are the factors driving the adoption of m-banking. Ubiquitous access, convenience and mobility are the main benefits that m-banking confers to customers [36]. Advantages of mobile banking are availability of facilities of balance checking, access to account and

card statement, checking recent transactions, ordering of cheque books, blocking of lost cards [37], checking of account history, SMS alerts, access to card statement, balance check, mobile recharge etc. via mobile phones [38]. The services today enable bank customers, for example, to request their account balance and the latest transactions of their accounts, to transfer funds between accounts, to make buy and sell orders on the stock exchange and to receive portfolio and price information. Previous studies indicate, that factors contributing to the adoption of mobile banking are related to convenience, access to the service regardless of time and place, privacy and savings in time and effort [25]. Mobile banking means that users adopt mobile terminals to conduct payment such as balance enquiry, transference and bill payment at anytime from anywhere [39]. Mobile banking frees users from spatial and temporal limitations, and enables them to conduct ubiquitous payment. Mobile banking means that users adopt mobile terminals to conduct payment such as balance enquiry, transference and bill payment at anytime from anywhere [40-42]. Shin defined mobile services as the range of services provided and accessed by a mobile device. The value of mobile banking for consumers is in its immediate location-free access to banking services enabling time savings, real-time information, and enhanced feelings of control [43]. Thus, it is reasonable to assume that:

H01: Effective Distinctiveness dimension of mobile banking does not have an association with satisfaction of user related to mobile banking.

Professed security

The Second dimension namely Professed Security consisted of three factors namely Effortless Recoverability (Factor Load = 0.648), Effective Risk Measurement (Factor Load = 0.599) and Privacy Assurance (Factor Load = 0.585). Kahandawa et al. [44] identified perception of risk and user's life style and current needs as the important factor of mobile banking. Zhihong et al. [45] considered perceived risk and system usability as the important factors. According to Kleijnen [7] Mobile banking and payments, have not been used as much as expected. This might be also due to the virtual look and lack of control that mobile banking involves great uncertainty and risk. Users need to build trust in order to adopt and use mobile banking [46]. Since mobile banking is the new banking gadget, the issue of security and privacy become important in understanding mobile banking acceptance among bank customer [10,28]. There is considerable amount of empirical research to suggest that users' intention to adopt mobile banking is inhibited by the perceived complexity of the innovation [40,47,48]. Ensuring security and confidentiality are the fundamental prerequisites before any banking activity involving sensitive information can take place Jayawardhena [49]. The significance of security and privacy for the adoption of online banking figured in many banking studies [50-53]. Lack of privacy and security found to be significant obstacles to the adoption of online banking [50]. They found that people have inadequate understanding of online banking security risks although they are aware of the risks. It was noted consumer's confidence in technology was weak. Consumers are becoming more concerned about security and privacy issues have proven important barriers to the use of online services.

The results of the study by Nicole [31] indicated that compatibility, perceived usefulness, and risk are significant indicators for the adoption of m-banking services and mobile phone banking includes using mobile devices to conduct personal financing via SMS and the mobile internet. Wolfinbarger [54] observed that reliability is an important factor for customer satisfaction. People refrain from using m-banking because it involves payments [10] such as SMS fee [55], security issues [33] and small keyboards and display screen of smart phone [26]. Particularly in banking services the perceived risk associated with the financial product itself as well as with electronic delivery channel is higher than in basic consumer goods, and hence increasing the importance of this attribute of innovation [56].

Generally, it has been found that Relative advantage, compatibility, trialability and observability are positively related to adoption of an innovation and the remaining two, complexity and perceived risk, negatively related. These innovation attributes and their influence on adoption of mobile banking services are detailed under empirical implications. Kim et al. [57] found that trust is also an important factor and should be taken into consideration by the Service providers; if consumers do not feel secure they will be reluctant to use the services. It is also found that people have less trust in the mobile banking services and personal disposition to trust played a positive role in developing initial usage in mobile banking. To some extent the success of acceptance of M-commerce transactions depends on the customer as well as vendor's trust. Kim et al. [57] and Majali [58] also discussed that if customers believe that a mobile banking firm is able to develop effective service delivery strategies and provide adequate protection from fraud and violation of privacy, then adoption (or continue-to-use) intentions of the mobile phone users will increase. Thus, we can predict that:

H02: Professed Security dimension of mobile banking does not have an association with satisfaction of user related to mobile banking.

IMMENSE EFFICACY

The Third Dimension namely Immense Efficacy consisted of 2 factors namely Cost-Effective (Factor Load = 0.770) and Improved Flexibility (Factor Load = 0.574). Farhana [59] found that customers consider cost as the important factor Adewoye [60] found that Mobile banking improve banks service delivery in a form of transactional convenience, savings of time, quick transaction alert and save of service cost which has recuperate customer's relationship and satisfaction.

Mobile phone banking includes using mobile devices to conduct personal financing via SMS and the mobile internet. Mobile banking means that users adopt mobile terminals to conduct payment such as balance enquiry, transference and bill payment at anytime from anywhere [41,42]. The value of mobile banking for consumers is in its immediate location-free access to banking services enabling time savings, real-time information, and enhanced feelings of control [43]. Thus, we can predict.

H03: Immense Efficacy dimension of mobile banking does not have an association with

satisfaction of user related to mobile banking.

SUPPORTIVE ACCESS

The Fourth Dimension namely Supportive Access consisted of 2 factors namely Knowledge Integration (Factor Load = 0.756) and Distinguished Methodology (Factor Load = 0.755). According to Alter [61] the amount of information consumers have about mobile banking is also identified as an important factor influencing the adoption. There is considerable amount of empirical research to suggest that users' intention to adopt mobile banking is inhibited by the perceived complexity of the innovation [40,47,48]. The results of the study by Nicole [31] indicated that compatibility, perceived usefulness, and risk are significant indicators for the adoption of m-banking services. Thus, we can assume that:

H04: Supportive Access dimension of mobile banking does not have an association with satisfaction of user related to mobile banking.

Innovative virtual environment

The Fifth Dimension namely Innovative Virtual Environment consisted of 3 factors namely easy Interactive style (Factor Load =0.643), Technology Affable (Factor Load =0.618) and Functional Navigation (Factor Load = 0.585). High system quality and information quality are critical to ensure users' trust due to mobile banking unable to involve face-to-face contact customers [29]. Technical infrastructure, and design of technology are reported as individual barriers in a number of studies in inhibiting users' intention to adopt mobile banking [20,40,47,48,62,63].

Shoriful I [64] explores the issues in mobile banking perceived critical for adoption by both mobile banking users as well as non-users. The study identified certain issues pertaining to banks, mobile handsets and telecom operator's viz. mobile handset operability, security/privacy, standardization of services, customization, Downloading and installing application software and Telecom services quality. According to Sadi [65] facilitating Condition is also an important attribute, hence it is necessary to improve the facilitating conditions of mobile application services like connection speed, secure systems and easy transaction method. Chaipoopirutana et al. [66] claimed that the adoption of mobile banking is 'complex' as it has the negative relation with intention to adopt mobile banking. Mobile banking service quality assessment requires analysis of the full interface design. A good mobile system service will promote users' adoption intention; contrarily, a poor mobile system service will decrease users' adoption intention [67]. High system quality and information quality are critical to ensure users' trust due to mobile banking unable to involve face-to-face contact customers [29]. Technical infrastructure, and design of technology are reported as individual barriers in a number of studies in inhibiting users' intention to adopt mobile banking [20,40,47,48,62,63]. Thus, it is reasonable to assume that:

H05: Innovative Virtual Environment dimension of mobile banking does not have an association with satisfaction of user related to mobile banking.

The Sixth Dimension namely Enhanced Personalization consisted of 2 factors namely Friendly user interface (Factor Load = 0.788) and Enhanced Customization (Factor Load =0.631). Personalization is the extent to which the device can be customized to fit a specific users needs. Personalization significantly impacts the ability to transfer knowledge since it presents presorted knowledge based on individual needs. Thus, we can assume that:

H06: Enhanced Personalization dimension of mobile banking does not have an association with satisfaction of user related to mobile banking.

The Seventh Dimension namely Improved Timely Updates consisted of only one factor namely timely updates (Factor Load =0.885). Mobile banking services through a variety of electronic pipeline to serve the consumer to create more opportunities, and has also been made to create added value for customers [68,69]. Thus, this leads to the development of the following hypothesis:

H07: Improved Timely Updates dimension of mobile banking does not have an association with satisfaction of user related to mobile banking.

Smart PLS was used to test the hypothesized relationships among the study variables. The choice was motivated by several considerations. PLS is a non-parametric estimation procedure [70]. Its conceptual core is an iterative combination of principal components analysis relating measures to constructs, and path analysis capturing the structural model of constructs. The structural model represents the direct and indirect causal relationships among constructs. It can be used to estimate models that use both reflective and formative indicators, is more appropriate for analyzing moderating effects because traditional techniques cannot account for measurement error in exogenous constructs allows for modeling latent constructs under conditions of non-normality, and is appropriate for small to medium sample sizes [71-73].

RESULTS AND DISCUSSION

The model was designed to study the effect of different dimensions of mobile banking on the user satisfaction (Figure 1). To assess the psychometric properties of measurement model, individual item loadings, internal consistency, convergent validity, and discriminant validity was examined of the reflective first-order factors (Effective Distinctiveness, Professed Security, Immense Efficacy, Supportive Access, Innovative Virtual Environment, Enhanced Personalization, and Improved Timely Updates).

The loadings of the measurement items on their respective factors were examined (Figure 2). Finally, the model included the items whose loading were above the

threshold value on their respective factor and were statistically significant at the 0.001 level, which provides support for convergent validity (Figure 3). 1 item namely functional Navigation was deleted.

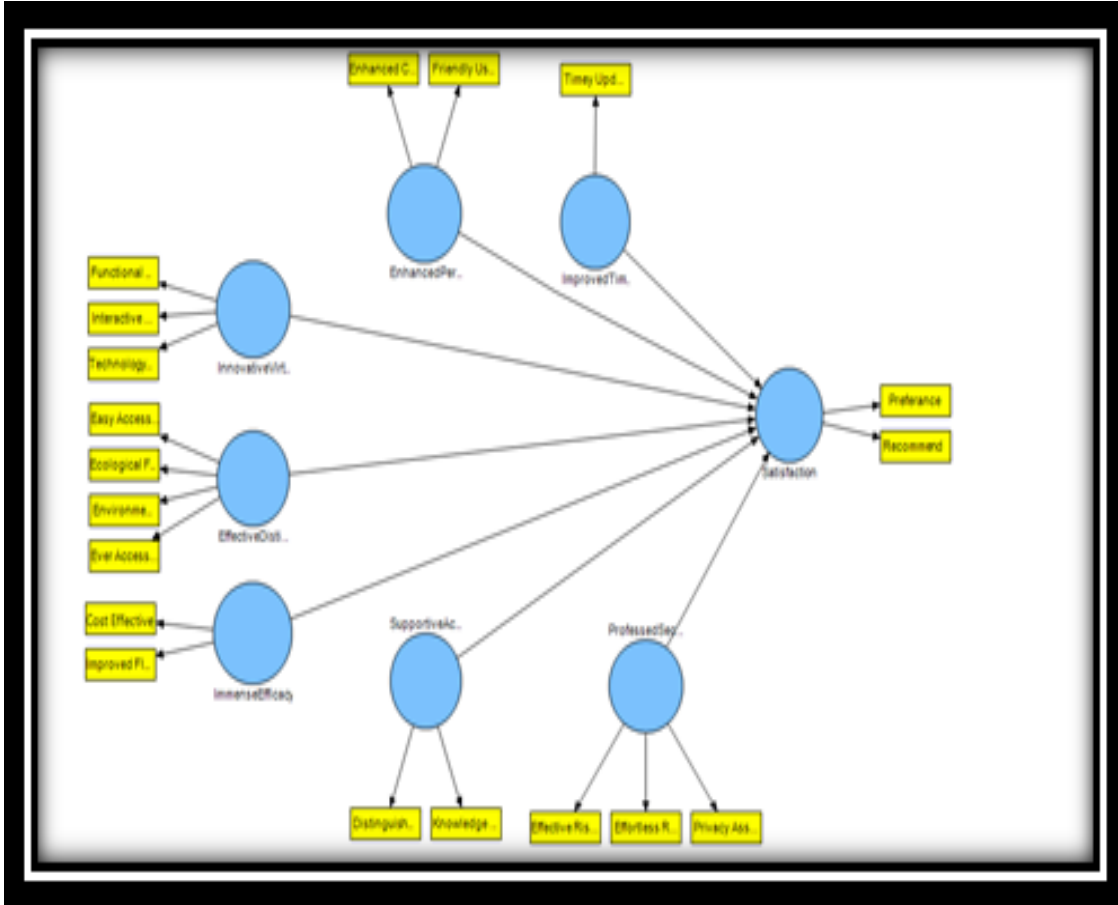


Figure 1: Initial model displaying relationship between dimensions of mobile banking on user satisfaction related to mobile banking

The study assessed convergent validity by examining composite reliability and average variance extracted from the measures. Although many studies have used 0.5 as the threshold reliability of the measures, 0.7 is a recommended value for a reliable construct [71,72]. For the reflective measures, rather than using Cronbach’s alpha, which represents a lower bound estimate of internal consistency due to its assumption of equal weightings of items, a better estimate can be gained by using the composite reliability measure [74]. As shown in Table 1, the internal consistency of all reflective constructs clearly exceeded 0.70, suggesting strong reliability. For the average variance extracted by a measure, a score of 0.4 indicates acceptability. From the table it is clear that AVE by all reflective measures is greater than 0.4, which is above the acceptability value.

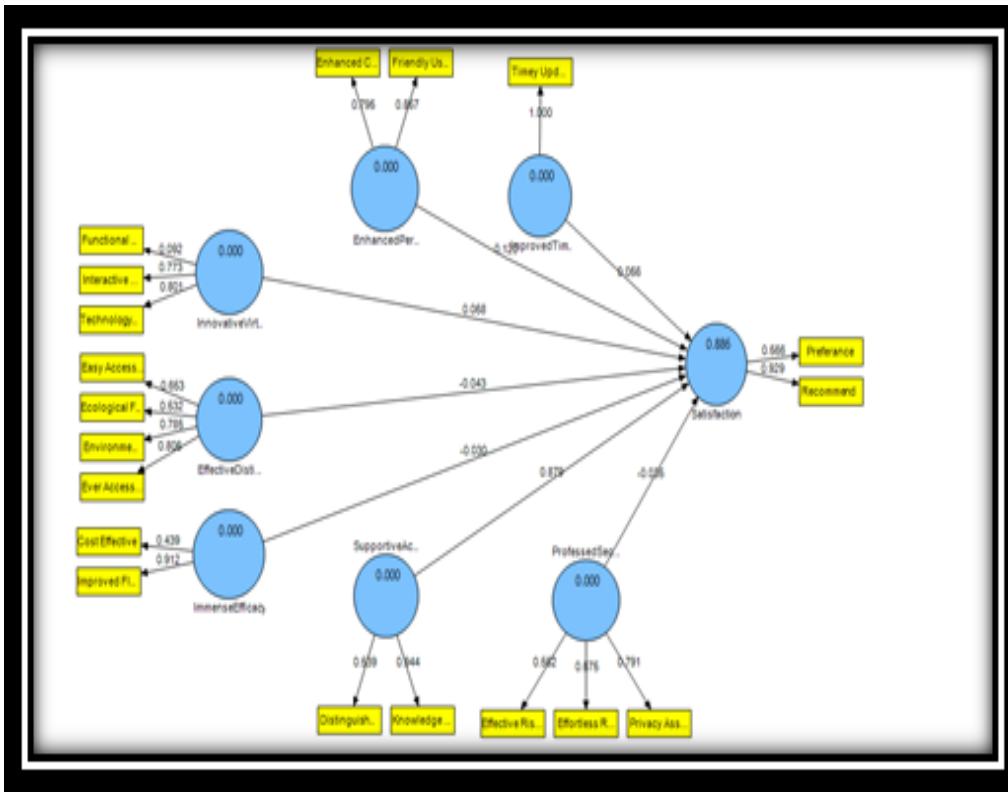


Figure 2: Initial values on the model displaying relationship between dimensions of mobile banking on user satisfaction related to mobile banking

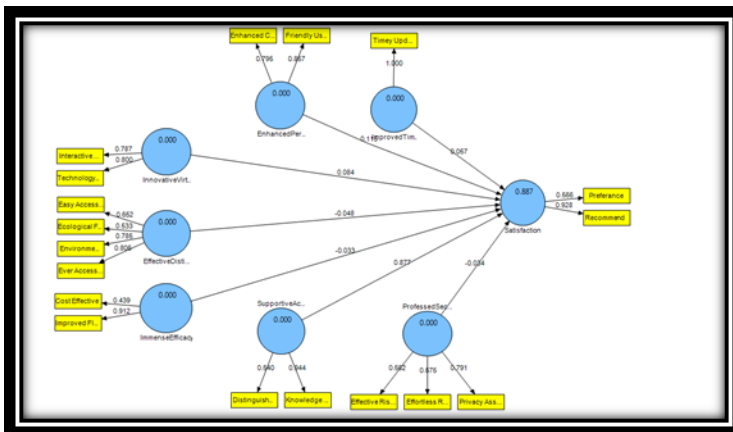


Figure 3: Model displaying relationship between dimensions of mobile banking on user satisfaction related to mobile banking after removal of some items

Table 1: Verification of convergent validity.

	AVE	Composite Reliability	Cronbachs Alpha
EffectiveDistinctiveness	0.49361	0.791807	0.651186
EnhancedPersonalization	0.683384	0.811699	0.539127
ImmenseEfficacy	0.511902	0.651348	0.060054
ImprovedTimelyUpdates	1	1	1
InnovativeVirtualEnvironment	0.629218	0.772406	0.4108
ProfessedSecurity	0.465779	0.719639	0.457007
Satisfaction	0.591387	0.732217	0.360159
SupportiveAccess	0.590731	0.728796	0.374417

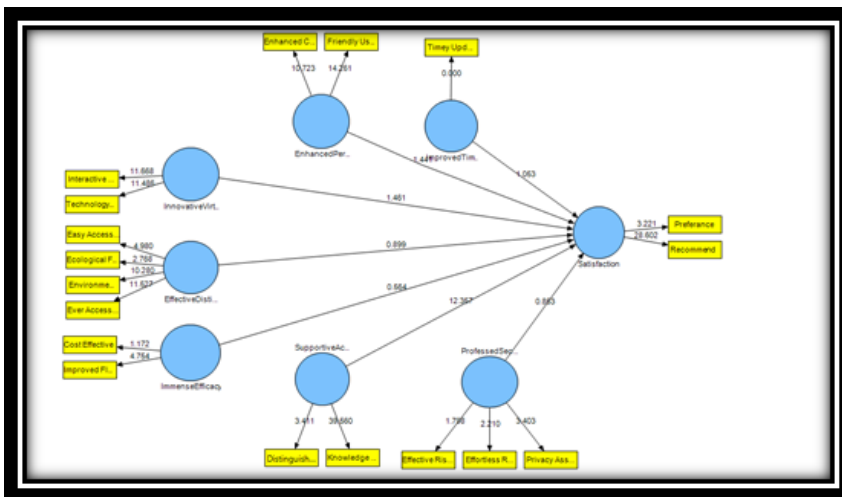


Figure 4: Boot strapping procedure on the final proposed model

Finally, the study verified the discriminant validity of the instrument by comparing the average variance extracted (AVE). It is clear from the Table 2 that the square root of the average variance extracted for each construct is greater than the levels of correlations with other constructs. The results of the inter-construct correlations also show that each construct shares larger variance with its own measures than with other measures.

Discriminant validity is also confirmed, when items related to a particular factor have the highest load on that factor and is higher than a difference of 0.2 on the other factor in the cross loadings table. When we look at the cross loadings Table 3, we find that these conditions holds good (some cases difference is nearly equal to 0.2, which is acceptable).

Table 2: Verification of discriminant validity.

	Effective Distinctiveness	Enhanced Personalization	Immense Efficacy	Improved Timely Updates	Innovative Virtual Environment	Professed Security	Supportive Access
Effective Distinctiveness	0.7						
Enhanced Personalization	0.43	0.8					
Immense Efficacy	0.4	0.4	0.7				
Improved Timely Updates	0.23	0.5	0.08	1			
Innovative Virtual Environment	0.51	0.5	0.42	0.276	0.787		
Professed Security	0.5	0.3	0.18	0.264	0.2674	0.7	
Supportive Access	0.39	0.3	0.29	0.194	0.4394	0.26	0.77

Table 3: Cross loadings table.

	Effective Distinctiveness	Enhanced Personalization	Immense Efficacy	Improved Timely Updates	Innovative Virtual Environment	Professed Security	Supportive Access
Cost Effective	0.336989	0.275711	0.538642	0.294977	0.358582	0.353261	0.146388
Distinguished Methodology	0.461012	0.381896	0.308025	0.182912	0.248721	0.265623	0.539511
Easy Accessibility	0.652428	0.27005	0.339927	0.16151	0.319972	0.45703	0.253891
Ecological Friendly	0.532577	0.397893	0.036552	0.34409	0.328522	0.329703	0.143276
Effective Risk Measurement	0.446833	0.208741	0.252383	0.238452	0.188217	0.562223	0.117993
Effortless Recoverability	0.278932	0.171136	0.124752	0.125794	0.275643	0.675414	0.192548
Enhanced Customization	0.37866	0.794887	0.377858	0.396556	0.376919	0.292004	0.276643

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Environment Collaboration	0.784649	0.24001	0.237869	0.079461	0.416883	0.298894	0.270797
Ever Accessibility	0.805895	0.320827	0.425828	0.10167	0.373301	0.34417	0.382911
Friendly User Interface	0.341301	0.857276	0.271849	0.376186	0.446248	0.188087	0.29624
Improved Flexibility	0.287511	0.304226	0.91181	-0.04134	0.299339	0.035976	0.257776
Interactive Technology	0.486623	0.375193	0.341738	0.225883	0.786775	0.275228	0.356593
Knowledge Integration	0.271985	0.25047	0.216246	0.151733	0.410038	0.197535	0.943605
Privacy Assurance	0.369033	0.220072	0.06868	0.210606	0.118971	0.790606	0.20662
Technology Affable	0.325191	0.417718	0.319294	0.211971	0.799639	0.15073	0.340776
Improved Timely Updates	0.225943	0.465265	0.084008	1	0.275851	0.264042	0.193517

Table 4: Correlation between dimensions of mobile banking and user satisfaction related to mobile banking.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (O/STERR)
EffectiveDistinctiveness Satisfaction	-0.04763	-0.03923	0.052974	0.052974	0.899187
EnhancedPersonalization Satisfaction	0.115168	0.10632	0.079941	0.079941	1.440659
ImmenseEfficacy Satisfaction	-0.03275	-0.02423	0.058033	0.058033	0.564373
ImprovedTimelyUpdates Satisfaction	0.056612	0.0548	0.053739	0.053739	1.053457

InnovativeVirtualEnvironm ent Satisfaction	0.08392 5	0.08468 4	0.057437	0.05743 7	1.461162
ProfessedSecurity Satisfaction	-0.03444	-0.0188	0.040367	0.04036 7	0.853076
SupportiveAccess Satisfaction	0.87693 8	0.87025 8	0.070968	0.07096 8	12.356767

The PLS modeling approach involved two steps - validating the measurement model and then fitting the structural model. The former is accomplished primarily by reliability and validity tests of the measurement model, followed by a test of the explanatory power of the overall model by assessing its explained variance, and the testing of the individual hypotheses (structural model). The model shows that the explanatory power for user performance is 88.6%, which is considered excellent for the studies of this nature. For testing the individual hypotheses, a bootstrap re-sampling procedure was conducted and coefficients were estimated (Figure 4 and Table 4).

The results revealed that hypothesis H04 stands rejected at 5% level of significance because the calculated value of t is more than tabulated value (1.645). Thus, supportive Access is an important factor which is directly associated with User Satisfaction related to mobile banking

CONCLUSIONS, SUGGESTIONS AND LIMITATIONS

The results of the study revealed that Effective Distinctiveness, Professed Security, Immense Efficacy, Innovative Virtual Environment, Enhanced Personalization and Improved Timely Updates were not associated with satisfaction related to mobile banking while Supportive Access is an important factor which is directly associated with User Satisfaction related to mobile banking. This seems to be true since user did not find the importance of those features which are common to e-banking while the distinctive features of mobile banking were always given a priority. Supportive Access constituted of 2 factors knowledge integration and distinguished methodology. User did rightly gave a importance to these features because distinguished methodology helped the user to outweigh traditional banking features and the knowledge integration feature of mobile banking is the parameter which helps the user to give more priority to mobile banking. However, other features seem to be important to mobile banking but are common with e-banking. The explanatory power of the model was 88.6% which was very good. This suggest that the features constituted in the model did had a significant contribution in assessing the satisfaction related to mobile banking.

An extensive study of research papers clearly depicts that in order to fulfill the

expectations of the consumers and to increase the mobile banking users, mobile banking service provider needs to increase the awareness about the mobile banking services. Banks and the mobile service providers need to come together to bring a revolution in the field of mobile banking. Mobile device manufactures need to make efforts so that penetration of mobile banking reaches from high-end to low-end users and from metros to the middle towns and rural areas. It is well recognized that mobile phones have immense potential of conducting financial transactions thus leading the financial growth with lot of convenience and much reduced cost. The mobile manufacturing company must work together with operating system and network provider companies that make a most reliable and user trust security system.

Our study provided bank managers, a clear view of the relative performance of the various factors of the enterprise, which can be used to identify needed improvements and take advantage accordingly. Managers could periodically evaluate the factors in the study, benchmark the results with the expected satisfaction levels and diagnose which factors are problematic and need further consideration. The future designs will thereby form a clear understanding of business requirements, gain more vision and acquire ability to expand knowledge and skills to better assimilate and utilize mobile banking, and therefore minimize the risks associated. Taking into account the most important needs of the implementation; the architecture should be established well before the deployment. To ease the process; rigorous and sophisticated software testing should be performed.

Since the research was conducted in India with a unique culture, the results might not hold true in other countries. Hence, the result cannot be generalized and therefore variation in the user's perception can be checked by conducting the same research at different locations. This opens the scope of comparative research in the mobile banking; since users belonging to different countries will have different exposure and perception related to mobile banking.

The study has given emphasis on the perception of mobile banking users. While the technology comfort length, level of experience, amount of usage and frequency of assessing mobile banking could be considered in order to segregate the user into early adopter, late adopter or laggard. Hence, it opens a scope of further research in special context of mobile banking users. This study was based on a self-administered exploratory survey, where only closed ended questions were used in the response sheet. This restricted the ability of researcher to ask open-ended questions, which may have assisted in offering a better understanding.

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