CHAPTER-II

Review of Literature
CHAPTER II
REVIEW OF LITERATURE

2.1 Introduction

This chapter is relevant to refer briefly to the previous studies and research in the related areas of the subject because it helps to find out and to fill up the research gaps, if any. The collection of reviews has been made from various studies undertaken by the academicians, practitioners, researchers from time to time. These reviews will enlighten the existing knowledge of the researcher. Besides, the reviews of empirical studies explore the avenues for present and future research related to the subject matter. In order to understand the research problem the earlier attempts made by the various authors are needed to be studied. The past studies guide the researcher for getting a better understanding about the need of research, methodology, identification of variables, sampling group, and instrument on collection of data, lucid interpretation and reconciliation of the conflicting results. In case of conflicting and unexpected results, the researcher can take the advantage and he is given the medium of their published works.

Different authors had analyzed M-Banking in different perspectives and the detailed analysis of the related literature promotes a greater understanding of the problem at hand and design of the study. It also provides a theoretical base for the research and helps the researcher to conceptualize the problem and to choose the design of the present study. Therefore, this chapter discusses the available studies of M-Banking (including a few numbers of other electronic channel/Information Technology) during the period from 1987-2010 in various countries like India, Singapore, Indonesia, Thailand, Nigeria, Oman, Kenya, Brazil, German, Ghana, Philippines, South Africa, Taiwan, Korea, China, Bangladesh, Finland, Saudi Arabia, Australia and others.

2.2 Related Reviews

Akinyele S.T & Olorunleke. K (2010)\(^1\) carried out an empirical research for the purpose of establishing the relationship of technology and service quality as well as factors that lead to customer preference of electronic channels among the Nigerian

customers using cross-sectional survey design. This study says that fewer customers adopted mobile technology-enabled banking services than the ATMs and Internet banking. In addition twelve out of eighteen service qualities are negatively related with M-Banking (216-217). Moreover, this study reported that customers seek their satisfaction areas through E-Banking like security, efficiency, accurate records, convenience and accurate transactions.

**Cruz. P & Laukkanen. T(2010)** in their article explain the obstacles or inhibiting drivers to the adoption of M-Banking among the various group of Brazilian Internet users and search for patterns according to personal profile. This study made to each attribute of the reasons for non-usage of M-Banking is statistically tested with gender, age, income and education (357). This study found that perception of cost, risk, low perceived relative advantage and complexity were revealed to be the main reasons behind the reluctance to use the M-Banking service.

**Hernan E. Riquelme and Rosa E. Rios (2010)** have done a research for the aim of finding out to factors influencing the adoption of M-Banking between the male and female users of internet banking services in Singapore. The responses collected from the 681 users about intense to use, relative advantage of mobile device, ease of use, risk, social norms and usefulness. This study found that perception risk is negatively associated with intention to adopt mobile phone for banking services. Further, usefulness and social norms are the factors that influence the intention to adopt mobile banking services. Relative advantage of mobile device and ease of use indirectly influence the perception of usefulness. The survey reveals female users electronic banking perceive that ease of use leads to the more usefulness of the mobile device to conduct banking services. Based on the gender variable, ease of use has a stronger influence on female respondents than male, whereas relative advantage has a stronger effect on the perception of usefulness on male respondents.

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Kirui, O.K, Okello, J.J, and Nyikal, R.A (2010)\(^4\) carried out an empirical research with the aim of assessing the awareness of M-Banking services of the small farmers (191 Male & 188 Female) and their use of M-Banking services in three Districts of Kenya. This study found that 96.3% of the farmers were aware of mobile phone–based money transfer services (M-Banking). In addition, this study reported that awareness of the mobile-based money transfer service differs among the three districts of Kenya (9). There is radio plays a dominant role in creating an awareness among the smallholder farmers because more than half of the farmers learned about the mobile phone–based money transfer service through this media. Furthermore, only 52% of the farmers have used the M-Banking services. Finally, it is concluded that awareness level of M-Banking is high among the farmers and their usage level is much lower.

Koo. C & Wati. Y (2010)\(^5\) in their empirical study used 100 respondents (faculties, staff and students) having experience under M-Banking in Indonesia. This study reveals that highest percent of mobile banking user concerns security (1810) and importance of trust in M-Banking environment, because it is the effects of information quality to perceived usefulness and end-user satisfaction.

Laukkanen.T & Kiviniemi. V (2010)\(^6\) in their empirical study focus on adoption barriers of M-Banking, Finland in terms of five different barriers (373). This study collected data from 1551 internet banking customers. The authors are conclude that information and guidance offered by the bank through M-Banking is reduced to usage, value, image and risk barriers. This is followed by less relation of image barrier but not the tradition barrier towards adoption of M-Banking (380-383).


Lewis N.K, Palmer, A & et.al (2010)\(^7\) investigated the adoption of M-Banking services using a sample of German young consumers through online survey and for which convenience sampling method was adopted. This study reveals that more number of male consumers are more likely to use M-Banking than women consumers. The authors statistically reported that there is a difference of usage of M-Banking between male and female customers. Users of smart phones are more possible to use M-Banking than others and it was statistically proved.

The authors focused on Technology Acceptance Model (TAM) regarding M-Banking adoption. TAM concludes that perceived usefulness and compatibility have positive effect on intention to adopt M-Banking (420-421).

Li Ying, L & Can, Z (2010)\(^8\) studied consumer decision regarding adoption of M-Banking financial services with the sample of 132 Chinese respondents and those respondents were selected through non-random sampling technique. This study focuses on five different factors like, perceived usefulness, perceived ease of use, attitude, behavioural intention, perceived usability, consumption concept and consumer experience regarding adoption of M-Banking. The authors conclude that development of M-Banking technology-enabled financial services is easier, when banks provide more stable and secured of financial products, enhancing the consumer perception of ease of use, perceived usability, forcing the usage behaviour of intention of financial services. In addition, M-Banking is to reduce human wastage and financial strength of the bank branches.

Mohammad Saifullah Sadi A.H & Azad, I (2010)\(^9\) empirically assesses the user’s perception of M-Banking in Sultanate of Oman. For this purpose 196 questionnaires were collected from businessmen, bank academics and students. This study concludes that a small percentage (41.8%) of respondents intends to use mobile phone for their banking activities and nearly half of them are aware of Short Message Service banking (9).

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Moreover, most of the respondents stated that the security (60.2%) and expenses (44.9%) under M-Banking is a major problem of using this facilities but not for difficult to perform functions through mobile device under M-Banking (16.3%).

Puschel. J, Mazzon J.A & et.al (2010)\textsuperscript{10} in their study determine the influencing factors of M-Banking adoption in the Brazilian context through the distribution of equal samples between user and non-user of M-Banking using convenience sampling method (395). It says that a number of M-Banking users of young male customers than female customers. Furthermore, users’ perception regarding M-Banking and it helps to check the account balance (52%), bill payment (24%) buying mobile pre-paid credits (16%) and transferring amounts (10%) (397).

In addition, attitude, technology facilitation condition, perceived behavioral control, self-efficacy and relative advantage have larger effect on the adoption of M-Banking among the non-users of M-Banking. On the other hand, medium effect on the perceived ease of use and less effect on the relative advantage influenced the adoption of M-Banking (398-404).

Termsnguanwong. S (2010)\textsuperscript{11} in his empirical research explains the customers’ discernment of M-Banking in Thailand through their level of satisfaction. The study focuses on three different parameters like trust in using M-Banking, reasons for non-usage of M-Banking and importance of diverse of M-Banking service. This study reveals that $2/3^\text{rd}$ of the M-Banking users and most of them agreed that M-Banking service is more convenient to branch banking because it gives faster transactions and ease of use. Further, this study says that most of the customers in Thailand prefer branch banking rather than mobile banking (9). Checking account balance is primary financial information by the customers under M-Banking.


Thomas Ogoro Ombati, Peterson Obara Magutu and et.al (2010)\(^{12}\) carried out a research through the cross-sectional survey design which questioned respondents on E-Banking (ATM, Mobile and Internet Banking) services. The respondents of the study were customers of banks who are using E-Banking services and it can be revealed that more than \(\frac{7}{10}\)\(^{\text{th}}\) of the customers in Nairobi do not use M-Banking facilities. In addition, most of the service quality dimensions (immediate financial transaction, secure services etc.) are negatively related (159) with M-Banking.

Uppal (2010)\(^{13}\) discussed M-Banking services of various bank groups in India with the purpose of investigating the extent of M-Banking among the various e-channels through average percent during the period from 2000-2001 to 2006-2007. It reveals that SBI group of banks, nationalized banks and old private sector banks have less percent of branches providing the services of M-Banking. On the other hand, nearly \(\frac{2}{3}\)\(^{\text{rd}}\) of the new private sector bank branches and nearly half of the branches of foreign sector banks provide M-Banking based financial service to their customers.

Moreover, nearly 15\% of the SBI and its associate bank branches provide M-Banking facility. But, the number of bank branches of providing M-Banking services was increased except in the year of 2005 – 2006. This is followed by nationalized banks, 8.55\% of branches providing the services of M-Banking. But, nationalized bank branches’ providing M-Banking services was moderately increased. Furthermore, only 13.27\% of old private sector bank branches provide the facility of M-Banking (031-032).

In addition, this study analyzes the extent of M-Banking usage among the various groups of the banks through the number of usage customers. It is concluded that new private sector (49,93,811 Customers) has strong position compared to other groups in the year of 2006 – 2007. Foreign banks (10, 56,065 Customers) and SBI group of the banks


(8,666,77 Customers) gained second and third position respectively. On the other hand, nationalized banks (4, 631, 41 Customers) and old private sector banks (99,431 Customers) have a few customers using M-Banking.

Wessels . L & Drennan . J (2010)\textsuperscript{14} assessed through an empirical research using national web-based survey and the selection of e-mail address of the respondents through stratified random sampling method (553). This study found that perceived usefulness, perceived risk, cost and compatibility of M-Banking affect the customer acceptance.

Barati.S & Mohammadi.S (2009)\textsuperscript{15} empirically explore the affected factors on acceptance of M-Banking through the Technology Acceptance Model. In this work considered innovation resistance will have a negative effect on acceptance of M-Banking. Furthermore, remaining factors positively affect the success of M-Banking and it is illustrated in the figure 2.1.

**Figure – 2.1: Proposed Technology Acceptance Model**

Chu.S & Yao-bin. L (2009)\textsuperscript{16} empirically investigate the impact of trust in online banking on the initial trust in M-Banking with respect to structural assurance, compatibility and relative advantage of intention to use M-Banking through the 313 cell-phone users who have got experience under online banking. This article explains that trust in online banking is important to trigger customers’ positive perception about M-Banking (208).


Crabbe, M, Standing, C & et. al (2009) conducted an empirical research for the purpose of examining the reasons for the adoption and non-adoption of M-Banking in Ghana among the owners of small and medium enterprises, importer/exporters, retailers/wholesalers, public servants in banks and other financial institutions using systematic sampling method. This study reveals that nearly $1/4^{th}$ of the respondents are using M-Banking system and the remaining is using various e-channels except M-Banking. But, most of the users of E-Banking channels use M-Banking services mainly to make enquiries of account balance. The various factors like, promote short-term usefulness, ease-of-use, credibility and facilitating conditions would promote attitude towards M-Banking by the users. Further, regression model explains thirty percent of the variance of attitude explains two factors viz, perceived credibility and facilitating conditions by the users of M-Banking. It implies that M-Banking users give foremost importance to the credibility of banks and organizational support needed to use the service effectively (530). The non-users of M-Banking give importance to perceived usefulness, sustained usefulness, facilitating conditions, credibility and perceived ease of use individually correlated with their non-adoption of M-Banking.

Dewan S.M & Dewan A.M (2009) identified choice of banking channels among the young consumers (between 18-30years) of mobile phone users in urban area, Bangladesh. For this purpose, five hundred responses were collected through convenience sampling method. This study found that mobile phone is more a preferred channel of conduct banking transaction than bank branch, ATM, Internet and Phone (124). In addition, the highest percent of the youngsters used their preferred channel for the purpose of enquiring the balance.

Indrani, M, Aishwarya, R & et. All (2009) examine adoption and usage of existing M-Banking services by low-literate, low-income individuals and possible factors responsible for the same in the developing world like India (26), Kenya (11), Philippines (30)

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and South Africa (23) through ninety interviews. This study found that lack of awareness level regarding availability and features of M-Banking services affect the adoption of M-Banking. Especially, in India 22 out of 26 interviews had never heard of M-Banking channels. Further, based on the perception collected from interviews by awareness groups and it is felt expensive under M-Banking based financial service.

Laforet. S (2009)\textsuperscript{20} in his research study raised some of the issues related to M-Banking among the Chinese consumers. The 128 consumers are randomly selected between users and non-users of M-Banking. This study reported that a small percent (14\%) of the respondents used M-Banking facilities in China and those users spread among the salaried employees, senior managers and smaller proportion of small businessmen in the age group of 25-34 years. None of the students and retired persons used this facility in China (34). This study concludes that reference group is not influenced on mobile banking adoption in China. In addition, statistical result suggests that there is no difference between user and non-user of M-Banking with respect to type of mobile phone, personal banking experience, prior computer experience, novelty and usefulness.

Lee. K and Chung. N (2009)\textsuperscript{21} argues that customers’ trust and satisfaction under M-Banking with respect to system quality, information quality and interface design quality in Korea. They reported that trust and satisfaction of customers depends upon the availability of reliable and appropriate information (system quality and information quality).

Liu . Z, Min. Q &et.all (2009)\textsuperscript{22} in their empirical study focus on intention to use of M-Banking through the Technology Acceptance Model (10). For this purpose 438 respondents were used and this study reported that perceived usefulness and trust have more influence on the intention to use of M-Banking by the individuals.


Min. S &Fei. C (2009) theoretically study M-Banking in China and its restriction factors for development of M-Banking like technical problem (security anti-interference, data integrity, disaster recovery, and convenience), complex and difficult to understand of mobile phone, inefficient of operation, unavailability of wide range of users and their needs is the main factor for non-usage. The authors suggest that creating awareness of M-Banking is a major factor for its successful operation. This study concludes that the number of M-Banking user size is small because China will have a wide range of mobile phone based applications with good development.

Nyangosi. R & Arora J.S (2009) studied for the purpose of inspecting the adoption of information technology (including Short Message Service banking) of the Kenyan customers through electronic mailed survey. This study reveals that SMS (Short Message Service) banking is less preferred channel than the ATM, Debit/Credit, Internet and Tele-banking.

Uppal R.K (2009) carried out a research for the purpose of comparing the customer service among the public, private and foreign sector banks with respect to time factor about cash withdrawal, en-cash bank draft, cash deposit, get a new cheque book, purchase bank draft, open fixed deposit account, get local cheques in account and outstation cheques credit to the account. 768 customers were randomly selected among the various sector of banks in Amritsar District and selected banks divided into partially and fully Information Technology (IT) enabled banks. This study concludes that time is foremost factor, because it affects the quality and reputation of the banks.

Yang A.S (2009) in his study aims to adopting and resisting factors of M-Banking among the university students in Taiwan and its sampling design is systematic. This study concludes that speed of transactions and special reductions in transaction services are

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motivating factors among the students for their adoption of mobile phone based banking transactions. On the other hand, system configuration (security code) and fees charged by banks are the inhibiting factors for non-adoption of M-Banking.

Yu.T.K & Fang. K (2009) assessed the perception of post-adoption of M-Banking by the 458 M-Banking users in Taiwan and collected perception through the twenty three items measures on five-point agreement scaling technique. This research work observed six factors using explorative factor analysis regarding post-adoption of M-Banking by the customers. The factors consist security service, interactivity, relative advantage, ease of use, interface creativity and customer satisfaction. It is argued that customers post-adoption index about M-Banking is 82.786. This index explained that the customers are expecting all the six factors under M-Banking services.

Ivautry .G & Mas. I (2008) observed involvement of M-Banking regarding cost reduction by the banks and customers. Further, it helps to branchless banking which lowers costs of serving poor or low-income customers when the distribution of financial services made through m-payment/M-Banking. Moreover, there is a reason to believe that M-Banking will find more than a niche application and become the primary banking channel for large segments of the population (13).

Jahangir. N & Begum. N (2008) in their cross-sectional study focussed on the role of influencing factors for adaptation of E-Banking among the electronic banking users of private commercial banks in Bangladesh. They examined the perceived usefulness, perceived ease of use, security and privacy and customer attitude towards E-Banking which are positively customer adaptation (036).

Baker E.W, Al-Gahtani S.S & et.al (2007)\textsuperscript{30} carried out an empirical study with the purpose of finding out the effects of gender, age and education towards new technology implementation among the knowledge workers in technologically developing country (Saudi Arabia) using the Theory of Planned Behavior (TPB). This study reported that the attitude, subjective norm and perceived behavioural factors influenced the use of new technology. Moreover, gender category of the respondents influenced the use of new technology (368) and increasing educational level influenced the behavioural control on intention to use technology. This is followed by age as a moderating demographic variable which was expected to be minimum level towards use of technology.

Daghfous, N and Toufaily, E (2007)\textsuperscript{31} assessed the adoption of E-Banking innovations (Phone banking, M-Banking, ATM, TV banking, PC banking, Minitel, Extranet and Internet banking) by Lebanese banks through quantitative method of survey. The aims of this article consist adoption of various e-channels with respect to organizational, structural and strategic factors using a sample of e-banking and information technology managers. This study reveals that there is a low interdependence between adoption of E-Banking innovation among the various types of banks because the Cramers V Co-efficient comes out to be less than 0.04. Further, adoption of E-Banking innovations considerably increase the performance of banks in terms of market share and customer satisfaction as well as reducing administrative costs of the banks.

Laukkanen, T (2007)\textsuperscript{32} in his research conducted customers of banks’ in Finland. The completed study stated that M-Banking channel helps the customers check their account balance and latest transactions immediately on 24X7. Further, this study concludes that five inch of display is sufficient for conducting financial information through the mobile phone by the users’ of M-Banking. Whereas, customers expect big size of display of the mobile phone by the non-user of M-Banking.


Laukkanen .T (2007)\textsuperscript{33} inspects the online customers’ attribute, preferences in electronic distribution channels of bill payment services. This empirical finding indicates that education, profession, household income, long internet banking usage and large number of internet banking usage frequency determine the potential to usage of M-Banking (403-404).

Tommi Laukkanen (2007)\textsuperscript{34} carried out a qualitative research with the aim of exploring the use of internet and mobile fund transfer services (M-Banking). This report says that M-Banking seeks to be the capability for immediate actions and time-saving is the major factor for determining adoption of mobile phone based fund transfer service (792).

Laukkanen, T, Sinkkonen, S et.al (2007)\textsuperscript{35} explores the bank customers’ reasons for resisting M-Banking services in Finland using online survey between the user and non-user of M-Banking. This study tells that tradition barrier is not an obstacle for adoption of M-Banking. On the other hand, remaining all barriers (usage, value, risk and image) is resistant to M-Banking adoption. Among four different barriers, value barrier is a primary obstacle for M-Banking adoption than the others.

Tommi Laukkanen, Suvi Sinkkonen and et.al (2007),\textsuperscript{36} in Finland internet survey focus on barriers for adoption of M-Banking with respect to the usage, value, risk, tradition and image barriers through the perception collected from the large sample (>1,000). The barriers related statements come negative and positive in nature and it is collected through Seven-point Likert scaling form. This study founded that value barrier is the strong influence to M-Banking adoption. The value barrier includes the three different statements like the use of M-Banking services is economical, M-Banking does not offer any advantage compared to handling financial matters and the use of M-Banking services is economical, M-Banking does not offer any advantage compared to handling financial matters and the use of M-Banking


services increases the ability to control financial matters. On the other hand, traditional barriers do not affect the M-Banking adoption because it has got lowest mean score compared to image, risk, value and usage.

Lee C.P, Mattila. M & et.al (2007)\textsuperscript{37} in their exploratory research attempts to explore the contributing factors to M-Banking resistance in Korea and Finland using purposive sampling method, but sample respondents become non-users of M-Banking. The result concludes that lack of knowledge regarding the M-Banking services is the inhibition for non-adoption of M-Banking system in Finland. In Korean M-Banking system, requiring new handset is one of the reasons for non-adoption of this system. Furthermore, current E-Banking services in both the countries are significant barriers to M-Banking services because they are having well developed E-Banking system. In Korea, mobile operator marketing strategies play the important role for development of M-Banking.

Lee K.S, Lee H.S & et.al (2007)\textsuperscript{38} in their article empirically identify factors influencing the adoption of M-Banking service among the users (306 respondents) of M-Banking through web based survey using Technology Acceptance Model (TAM). The authors conclude that consumers trust and perceived usefulness directly influenced to adoption of M-Banking in South Korea. On the other hand, perceived risk does not influence M-Banking adoption (8).

Molina. A, Consuegra D.M& et.al (2007)\textsuperscript{39} conducted their empirical research using convenience sampling method (259) with the aim of examining the impact of relational benefits on customer satisfaction in retail banking, in Spain. This study concludes that confidence benefits (clear and reasonable offering of services, greater confidence and correct functioning) as one of the retail banking customer satisfaction antecedents.


Shereif Mahdi M.O & Dawson P (2007) discussed with dual methodological approach like quantitative and qualitative technique regarding process of technological change in the Sudanese commercial banking sector. The authors distributed questionnaire to general and Information Technology (IT) managers of the banks, IT specialist, top/senior officials, IT consultants in Sudan banking sector (190). This quantitative study reported that IT managers have more Knowledge about IT and skill, general managers have more managerial experience. Further, it is stated that implementation of IT in Sudanese banks not only provide for better banking services but also to comply with the directives of the Bank of Sudan.

In addition, qualitative survey explains that IT adoption was implemented at top managerial level and it helps effective management decision making. But, more than one-third of the survey respondents informed that IT had started whereas not yet been fully implemented. Finally, it says that preference of inter on-line services for banking services and credit card services are the least financial information medium for banking services (191-193).

Amin. H, Abdul Hamid. M.R, and et.al (2006) examine undergraduate students’ attitude and expectations for M-Banking adoption for future trend especially focusing on Islamic banks in Malaysia using convenience sampling method. Opinion form of response was collected from the students regarding their attitude towards M-Banking and students gave more importance to mobile phone saying that it was a convenience device more for contact purpose than for other purposes. Further, students think M-Banking service is less expensive. In addition, primary expectation of the students over M-Banking is effectiveness of the services provided by Islamic banks because most of students strongly agreed for this feature of M-Banking adoption.


Chris Lin J.S & Hsieh. P (2006)\(^{42}\) in their empirical research model explore the relationships among the technology readiness, perceived service quality, satisfaction and behavioral intentions toward self-service technologies by the customers in Taiwan with the response rate of 63.4. According to their conclusion, customers have more positive attitude toward technology, ability to use technology and willingness to adopt technology more likely to appreciate self-service technologies, because it results in higher service quality, which in turn enhances customer satisfaction.

Gautam Ivatury and Mark Pickens (2006)\(^{43}\) carried out a research on M-Banking of the 515 low-income individuals in South Africa between users and non-users of M-Banking services. It is found that 97% of the user participants preferred to use new technology to conduct their financial transactions with banks. Followed by, nearly 1/4\(^{th}\) of the users decided against it saying that cell phone banking was difficult or confusing to use. On the other hand, nearly 1/3\(^{rd}\) of the non-users feel that cell phone banking is confusing to use irrespective of their having cell phone or not. This study concludes that M-Banking providers enhance the awareness of their service to the low-income customers in South Africa.

Tiwari, R., Bure, S & et.al (2006)\(^{44}\) explores the various avenues using the mobile technology for expanding online banking services, as mobile based applications gain popularity. 50 banks worldwide have been selected, half of them from Germany during May/June, 2005. From Indian banks viz, Bank of Punjab, HDFC, ICICI banks provide mobile phone based financial services to their customers. The authors discuss the global scenario and technology used in mobile financial services (MFS) and its analysis of various technologies using case study.


Tiwari, R, Buse, S, et. al (2006) conducted their empirical study regarding assessment of customer acceptance for various M-Banking services and customer’s willingness to pay for them in the German cities. The participant customers were in the age group of 18 to 65 years and they gave their perceived preferences and willingness to pay for seventeen different financial services offered in M-Banking. This study reveals that more than half of the customers are not aware of such offers provided by their banks and only 12% of the participants have used mobile financial services. Among them 8/10th of the users of M-Banking facilities were male.

The authors examined the advantages and disadvantages of M-Banking based on their customer perception. The highest percent of the M-Banking users accepted anywhere and anytime feature of M-Banking when compared with non-users of M-Banking. On the other hand, security is the major obstacle among the users of M-Banking compared with expensive and uncomfortable under M-Banking based financial services.

Furthermore, this study reveals that accounting is the most preferred field and brokerage services to be least application among the users of M-Banking service. The authors found that the facility to remit money through mobile devices is highly preferred financial information among all participants. Further, the following table provides acceptance level of mobile accounting services.

<table>
<thead>
<tr>
<th>Service</th>
<th>Acceptance level</th>
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<tbody>
<tr>
<td>Card management</td>
<td>Goodwill</td>
</tr>
<tr>
<td>Issuing standing orders</td>
<td>Scepticism</td>
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<tr>
<td>Access administration</td>
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<tr>
<td>Subscribing insurances</td>
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Moreover, based on the customer opinion about various mobile financial information services, acceptance level of M-Banking is goodwill for conducting balance enquiries.

Tiwari, R, Buse, S, et al (2006)\textsuperscript{46} in their bank survey conducted for the purpose of understanding the factors that might be influencing decisions of banks in Germany about mobile financial services (MFS) with respect to its scope, mediums to employ, target customer groups and objectives to pursue the mobile financial services. For this survey the data was collected from the senior management and decision-making officers in twenty eight banks including Swiss banks through the six-point scaling technique about the measure the importance of MFS. But, sixteen banks participated in this study and it is reported that 3/4\textsuperscript{th} of the banks offered MFS. Further, one bank planned to launch MFS during the study period and three banks did not offer M-Banking. The fostering innovative image is the higher influence of M-Banking objectives compared with motivation of the workforce, cost reduction, attracting new customers, and increasing turnover etc. Moreover, the authors discuss against M-Banking and it revealed that lack of customer demand is the major reason for not offering MFS.

Joseph, M, Sekhon, Y & et.al (2005)\textsuperscript{47} attempted to discover the underlying areas of dissatisfaction associated with the banking experience among the customers in the UK, particularly as it relates to the implementation of new service delivery technology in the banking industry. This study says that performance of banking institutions is not perceived as achieving a high standard, because nearly 3/5\textsuperscript{th} of the customers reported they were satisfied with their overall electronic banking experience (407). The authors found four factors regarding the use of technology-enabled financial services like reliable and accurate banking services, customer service, personalized service and accurate records. Further, this study demonstrates reliable and accurate banking services that fall into the “Keep up the good work” quadrant. This implies that location on the quadrant where a customer believes a specific attribute is very important and they are satisfied with the performance.


Laukkanen, T (2005) focuses on consumer value creation in internet and M-Banking of the E-Banking customers in large Scandinavian bank, Finland. This study tells that forty-five customers used a fund transfer through mobile phone. Because, it helps to use the service wherever required to enable immediate action and to save time it is an efficient and convenient system. Further, this paper says that customer needs and values have become more important for financial institutions, not only due to the changing environment but also because of changed customer behavior.

Laukkanen. T and Lauronen .J (2005) in their exploratory research conducted on banking customers by using a qualitative in-depth interview method found that M-Banking service is needed to control some of the financial related matters. In addition, this paper discusses the understanding of customer-perceived value and value creation on the basis of attributes of mobile services and customer-perceived disadvantages of mobile phones in electronic banking context. Further, bill payment through mobile phone is perceived as too difficult and time-consuming as the device enables only a limited amount of information processing and the whole bill is not visible on the display.

Luarn. P & Lin H.H (2005) the primary objectives of this research is to extend the Technology Acceptance Model (TAM) by adding on one trust-based construct (perceived credibility) and two resource-based constructs (perceived self-efficacy and perceived financial cost) and the final TAM is given in the figure below. Primary data were collected from respondents who attended an e-commerce exposition and symposium held in Taiwan. This study statistically report that significant effects available between behavioral intention to adoption of M-Banking and perceived usefulness, ease of use, credibility, self-efficacy, financial costs. But, perceived creditability to have a stronger influence on behavioral intention to adoption of M-Banking than the perceived usefulness

and perceived ease of use. They also examine security and privacy issues which are foremost factors among the consumers at the time of using M-Banking. It reflects that financial cost is also a significant barrier for users of M-Banking (885-886).

**Figure – 2.2: Extended Technology Acceptance Model (Luarn. P & Lin H.H)**

**Sylvie Laforet and Xiaoyan Li (2005)** in their empirical research paper reported that lack of awareness among the Chinese people is the major barrier to adoption of M-Banking services (375) and it is derived from hundred and twenty-eight samples, it is selected through random sampling technique (371). Furthermore, this study was found that none of the younger generation (18 – 24 Years) and students used M-Banking services but the highest percent of the salaried employees used these services compared with small business owners and senior managers.

Wan W.N, Luk C.L and et.al (2005)\textsuperscript{52} investigated the influencing factors on adoption behavior of banking channels (branch banking, ATM, telephone banking, and internet banking) among the bank customers in Hong Kong. This study says that level of adoption of telephone banking is low compared with others (262). This study examines customers’ beliefs about four factors for adoption of banking channels (convenience, informativeness, user-friendliness and assurance) through confirmative factor analysis whereas the adoption of telephone banking was largely due to a behavioral habit of customers. Further, they found out that telephone banking was not highly adopted among the various age groups but was used more frequently by customers in their middle or mature adulthood (265). In their variance test, they found out that occupational category was significantly associated with the adoption of banking channels except ATM. Adoption of telephone banking was higher in laborers, clerks, managers and professionals better than the students. On the other hand, the self–employed, home workers and retired persons had a moderate level of adoption of telephone banking.

Elza Thomson and Zanele Dawn Mthethwa (2004)\textsuperscript{53} in their short-term exploratory research work done with the aim of assessing the non– adoption of cell phone banking by the consumers identify the factors that can increase the rate of service adoption and establish the future plans of m-commerce in the banking industry particularly Standard Bank, South Africa. The sample customers were selected through the convenience sampling method (62). For this purpose, they can collect primary data through the questionnaire in the form of both quantitative and qualitative nature. The questionnaire covers four parts. Among these the last part covers influencing factors for adoption of cell phone banking related factors like complexity (three items), risk (three items) and relative advantage (four items) measured with strongly disagree to strongly agree (65).

Their report reveals that based on the customers’ perception cell phone banking may be risky and the security may be compromised. Further, the cell phone banking


\textsuperscript{53}Elza Thomson and Zanele Dawn Mthethwa (2004): “M-Commerce: Standard Bank’s Cellphone Banking Adoption by Customers” MBA Project Report Submitted to Graduate School of Business, University of Kwazulu Natal
service that will provide some convenience if utilized for banking and also is a quick service to use compared with the other forms of banking like internet or telephone banking. 88% of the customers have cell phones and nearly 3/4th of them have the intention to use cell phone banking.

![Diagram showing influencing factors on adoption of cell phone banking]

**Figure: 2.3 Influencing factors on adoption of cell phone banking**

Finally, correlation analysis concludes that adoption of cell phone banking is positively correlated with risk/security, relative advantage and trialability. On the other hand, inverse relationship factors are complexity and compatibility.

**Sivanand.C.N, Geeta. M & et. all (2004)**\(^{54}\) conducted descriptive research design with the aim of determining the perceived barriers among the 218 Malaysian account holders regarding mobile internet banking services offered by the banking industry and the customers were selected using cluster of area sampling method. This study says that nearly 2/10\(^{th}\) of Malaysian customers are aware of mobile internet banking but users of these facilities are only 9.6% \(^{8}\), because customers feel their financial transactional services need not necessarily be done through adopting mobile internet banking services because they are not satisfied with the level of security of mobile devices for mobile internet banking \(^{11}\).

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\(^{54}\) Chavidi Naga Sivanand, MulabagulaGeeta&Suleep (2004): “Barriers to Mobile Internet Banking Services Adoption: An Empirical Study in Klang Valley of Malaysia”, *The Internet Business Review, Issue 1, October, pp. 1-17*
Brown, I, CajeE. Z et.al (2003)\textsuperscript{55} in their explorative research try to determine the factors that influence the adoption of cell phone banking in South Africa with the sample population of who uses the cell phone and who are familiar with cell phones, as well as banking facilities. The sample selection through the convenience sampling method. They found the factors that influenced the initial adoption of cell phone banking like perceived relative advantage, the ability to try and experiment with the innovation first (trialability), and the diversity of banking needs of a potential user. In addition, risk and complexity is the primary importance for non-adoption of M-Banking (389).

Durkin, M, Howcroft, B & et.al (2003)\textsuperscript{56} conducted a study among the 2319 (Valid Questionnaire) retail customers regarding their importance and satisfaction collected through Likert-scale technique. This study reported that customers are given more importance on remote banking as well as face-to-face contact (184). Further, this study pointed out dissatisfaction with staff availability which is the chief motivator of the importance to remote communication among the customers.

Joseph, M & Stone .G (2003)\textsuperscript{57} in their empirical study used convenience sampling method for the selection of electronic bank customers and they examined various factors under excellent telephone banking like ability to provide quick service (24 X7), convenient, personalized and user-friendly service (194-195). In addition, most of the customers see foremost dimensions for accuracy and security under information technology-oriented banking.

Karjaluoto, H, Koivumäki. T et.al (2003)\textsuperscript{58} discussed with the aim of exploring the heterogeneous private bank customers on their transfer from traditional branch to online banking in Finland using postal survey among the 1167 responses (valid). They are


statistically reported that difference available among the various groups of the gender, age
group, marital status, education, household income and profession with respect to usage level.

Mukherjee, A. and Nath, P. (2003) conducted a survey in the city of Calcutta, India with 510 internet surfers using quota sampling method for the aim of role of trust as regards technology-oriented banking. They identified shared value, communication and opportunistic behavior to be the main antecedents to trust (7). Furthermore, this work concludes that shared value and communication have a significant positive relationship with trust and that trust had a significant positive influence on commitment. On the other hand, opportunistic behavior tends to have a negative impact on trust.

Snellman, K & Vihtkari, T (2003) investigated and compared complaining behavior in traditional and technology-based service encounters in Finnish retail banking and the data were collected from the dissatisfactory customer groups with retail banking services in Finland, but they had experienced dissatisfaction within both types like self-service technologies and traditional banks. This study reveals that traditional service encounters had a slightly lower complaining rate than self-service technology encounters. Furthermore, the study explains that there is no significant relationship between the type of service encounter and complaining behavior (223-224). They observed that dissatisfaction in technology-based encounters was most often related to failures in technology, service design or in the service process. Interpersonal service encounters, unfriendly or impolite service and time-related aspects were the most common causes for dissatisfaction.

Suoranta, M (2003) in her descriptive research approach tried to determine the dimensions regarding adoption of M-Banking. The M-Banking technology adoption model explains that age and education among the several demographic variables have an influence on the adoption of mobile banking. Further, relative advantage, compatibility, communication and trialability are influencing factors on the adoption of M-Banking. But, complexity, security and trust worthiness of m-services are not major obstacles for adopting M-Banking (62-69).

61 Mary Suoranta (2003): “Adoption of Mobile Banking In Finland”, Doctoral Thesis Submitted to University of JyvaSkyla.
Howcroft .B, Hamilton .R and et.al (2002) conducted a research for the purpose of respondents changing attitudes towards bank delivery channels and determined the important factors in encouraging and discouraging respondents’ use of telephone and internet banking (114). This study reveals that 22.1% of the respondents acquired their financial services through telephone. ‘Lower fees’, ‘service quality’ and ‘save time’ are the major factors for encouraging adoption of telephone/Internet banking. In addition, this report stated that the younger consumers value the convenience or time saving potential of M-Banking more than older consumers. Younger consumers also regarded the lack of face-to-face contact as less important than older consumers (118). Furthermore, the survey found that educational qualification is not an important factor in encouraging or discouraging the use of telephone or online banking but security and errors are the important factors for discouraging adoption for telephone/internet banking in UK.

Karjaluoto. H (2002) carried out a survey type of research with the purpose of finding out the mode of bill payment selection criteria among the non-user, new user and old user of electronic banking services (332-333). The importance of bill payment criteria measured on seven-point Likert scale and it says that security, trustworthiness and ease of use is important to making payments of all groups (334-335).

Minna Mattila (2002) made a descriptive approach in Finland with 1253 Finnish bank customers using stratified sample method and this study found that security and trustworthiness of usage of service is the most important factor within every target customer segments when deciding on banking service delivery channel. Because, customers agreed positively to the statement of “using mobile phone in banking is trustworthy”. This study also indicated that pay bills cheaper, have faster data transmission rate, authenticate with mobile phone to internet bank are the major reasons for usage of mobile device for banking transactions.

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Muligan. P & Gordon S.R (2002) identify the current and potential role of information technology in supporting relationships among customers and suppliers. They can use a sample of senior technology and strategic managers from the firms of retail banks, mutual funds, insurance carriers, institutional investment companies and brokerages. They discuss the use of technology providing opportunities for strengthening relationship between customers and suppliers of financial transactions, which can improve customers service levels by providing new forms of service delivery, improving customer intimacy, responding more rapidly to customer needs, and affording customers the opportunity to help themselves.

Yong J.J & Gorman G.E (2002) in their article found that the level of M-Banking service use had increased by 400% within fifteen months from December 2000 to March 2002 in Korea (340-341).

Al-Ashban, A & Burney, M.A. (2001) in their empirical study attempted to examine the adoption of telE-Banking in Saudi Arabia. This study revealed that 72% of the respondents used this service during the past three years because most of them claim that it is easy to use. Further they conclude that income levels and education play a vital role for Tele-Banking adoption in Saudi Arabia. Furthermore, customers tend to increase their usage of Tele-Banking services as a function based on their past experience.

Mallat. N, Dahlberg. T & et.al (2001) assess the attitude towards different banking channels including telephone banking among the Finnish retail banking customers through mail survey. This empirical study says that the role of mobile services and phone

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banking was low because mobile services are inconvenient and expensive to use. But, phone banking seems to be yielding popular of internet service technology (808).

Thornton. J & White. L (2001)\(^{69}\) conducted an exploratory or empirical study to investigate attitudinal factors that affect the current usage levels of various e-channels including telephone banking among the financial customers in Australia. This study found that important attitudinal behavior revealed that self-service distribution channels had higher usage rates among the financial customers who had favorable attitudes towards convenience, change, computers, technology, and who felt more confident using E-Banking channels about accessing their finance related matters (179).

Parasuraman. A (2000)\(^{70}\) in his qualitative research focused on technology readiness index among the several services and his results pertaining to the association between the technology readiness index and actual use of several technology-based services like, using an ATM, conducting banking transactions over an automated phone system, buying/selling stock/securities online—that are likely to be intimidating to customers with a low inherent propensity to embrace new technologies.

Barczak. G, Ellen. P.S &et. all (1997)\(^{71}\) identify the customers’ motives regarding usage of technology-oriented banking services (ATMs, telephone banking, debit cards and automatic drafts) in Southeastern United States. They identified four motivational clusters for money management through the statistical application like security consciousness, maximizers, instant gratification and hassle avoiders (134-135). Further, this study reveals that customers are using telephone banking for their money management through verifying account balance (33%), deposits (28%), withdrawals (25%), checks have cleared (27%) and making loan payment (2%). Motivational factors have different behaviors towards different banking technologies.

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Mols N.P, Bukh P.N.D& et. all (1999) observe the adoption process in the distribution channel structure of the retail banking sector as a consequence of the introduction of electronic channels, such as telephone, PC and Internet banking in Danish banks, Denmark. For this purpose forty usable answers collected from retail banks through five-point likert forms. The survey indicates that telephone services are considered important by most Danish banks because it is less costly than the branch banking strategy (42). Further, the add-on importance to the Telephone, PC and Internet banking technologies is significantly correlated but those three banking channels were negatively correlated with branch banking. Among these correlation, only the negative relationship available between telephone banks and branch banking. Based on this recommendation, the current work gives three distribution channel strategies like, branch strategy, home bank strategy and dual strategy. The authors conclude that when larger customers move towards electronic based financial transactions and it is expected to reduction of bank branches and staffs in most of the banks (45).

Davis . D.F(1989) in his empirical study assessed the user acceptance of information technology with respect to perceived usefulness and ease of use. Further, these factors were decided to generate six items for each construct. This study found that perceived usefulness was significantly a strong influence on intention to usage of innovation more than the ease of use (333).

Zeithaml V.A and Gilly M.C (1987) in their research found that elderly consumers were more likely than younger consumers to prefer the customary way of conducting financial informations and to enjoy the personal interactions with the bank employees (57).

Deng. Z, Lu. Y &et. all empirically evaluated the influencing factors of the adoption of M-Banking among the 209 students in China using Technology Acceptance.

Model. The interesting findings of this study explain that higher service costs do not reduce the use of M-Banking. There is Short Message Service based M-Banking and its service cost is acceptable among the Chinese people (180).

2.3 Research Gap

The above reviews agreed that transformation is taking place regarding self-service technology-enabled financial transaction between bankers and customers in various countries. M-Banking is playing a vital role in the 21st century throughout the globe. Based on the above earlier studies the following gaps are found by the researcher

1) No author focused on the growth of M-Banking technology-enabled financial information system except in Kenya (Yong J.J & Gorman G.E, 2009) but Kenyan study is not appropriate in India.

2) Large number of previous studies included in the review of literatures focusing on adoption of mobile banking / Information Technology aspects from customers’ view except Lebanese Bank (Daghfous .N and Toufaily .E) Sudanese Commercial Banks (Shereif Mahdi M.O et.al), Germany Banks (Tiwari. R, Buse. S, et. al). Therefore, this study moves towards adoption of M-Banking by the bankers (employees) view.

3) Indian author (Uppal R.K, 2009) suggests that future area of research is needed to the Indian context regarding general or personal factor-wise use of e-channels and its extent of acceptance. In addition, research gap also finds out earlier works consisting acceptance level of mobile banking among the bank customers because acceptance level (High, Medium and Low) is also motivated to usage of M-Banking.

4) Finally, place of research is the primary gap of the every research work because people in different countries have different lifestyles in the different aspects. On the other hand, very few numbers of studies focus on Indian context (Uppal R.K 2009 & 2010, Indrani et.all 2009 and Tiwari, R., Bure, S & et.al 2006). But none of them

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focus on the usage segment of M-Banking among the customers and their reasons for usage and non-usage of M-Banking/perceived obstacles for non-acceptance of M-Banking in India.

2.4 Summation

The analysis of previous reviews helps the researcher to identify the problems to be taken up for the present study. Based on the problems identified, the researcher has formulated the methodology for the present study. This chapter presents a review of relevant research studies relating to the present study area. From the above reviews of both empirical and conceptual work, it is clear that different authors have approached various self-service technology-enabled financial information mediums including M-Banking in different ways in varying different levels of analysis. These different approaches helped in the emergence of more and more literature on the subject over the time. It gives an idea on extensive and diverse works on M-Banking. The review of literature has been confined to 49 research reports collected from various journals, 17 from conference proceedings and the remaining reviews are collected from Postgraduate project report, Doctoral thesis and websites. This section covers 75 review orderly organized from 2010 to 1987. Among the several studies, 4 studies are focusing India. Moreover, the review of related studies has helped the researcher to conceptualize the present study and to design the research methodology. The methodology for the study is given in the first chapter and the analysis and findings in the subsequent chapters.