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Review of the Literature on Determinants of electronic banking adoption by customers

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Abstract

The purpose of this paper is to review the adoption of electronic banking by customers, through a research model tested by the questionnaire as a method, which incorporates customer-related factors. The results show that electronic banking adoption has grown significantly across the world and it has been well studied in the context of developed countries, but in developing and underdeveloped countries still remain fertile for further academic research.Collectively, financial institutions need to make sure that the best features of their e-banking systems are well communicated to potential users in light of the individual differences among their customer segments.

Keywords: electronic, willingness, banking, adoption, customers.

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Revisión de la literatura sobre los determinantes de la adopción bancaria electrónica por parte de los clientes

Resumen

El propósito de este artículo es revisar la adopción de la banca electrónica por parte de clientes, a través de un modelo de investigación probado por el cuestionario como método, que incorpora factores relacionados con el cliente. Los resultados muestran que la adopción de la banca electrónica ha crecido significativamente en todo el mundo y ha sido bien estudiada en el contexto de los países desarrollados, pero en los países en desarrollo y subdesarrollados sigue siendo fértil para futuras investigaciones académicas. Colectivamente, las instituciones financieras deben asegurarse de que las mejores características de sus sistemas de banca electrónica se comuniquen bien a los usuarios potenciales a la luz de las diferencias individuales entre sus segmentos de clientes.

Palabras clave: electrónico, voluntad, banca, adopción, clientes.

1. INTRODUCTION

Over the past three decades the rapid expansion of information and communication technologies (ICT) has created a tremendous impact on all areas of human life. A widely studied area of technological transformation is in retail financial services. The internet has sparked an IT-based revolution in the financial services sector that has radically altered the way that banking services are delivered. This development referred to as internet banking, it is cost effective and

people find great ease to complete their financial activities regardless of their physical location. It also increased service quality which is necessary for survival in competitive markets.

ATM`s were the first self-service technologies in the banking sector, which emerged in the 1970s followed by telephone banking services in the 1980s, and in the 1990s, banks further extended their offering by web-based banking applications. However, many areas are still untapped by the banks. There are many opportunities for banks to move even more customers to electronic banking channels. Adoption of internet banking is important both for bankers as well as customers, but it requires customers to adopt internet banking. Thus, banks should understand more about their customer`s perception towards internet banking adoption Bedman (2015).The increased availability of electronic banking modes in the banking industry has changed the way banks service their customers and improved customer satisfaction. There are varieties of different channels that provide easy mode to the customers as well as in decision making of their funds while sitting at home as it is just a click away.

2. OBJECTIVE OF THE STUDY

Though, nobody would deny that electronic banking is the wave of the future, yet the 'practice' of electronic banking is quite limited especially in the developing and under developed countries. Thus, this paper intends to explore the existing literature to identify research methodologies used in adoption of electronic banking and the factors

affecting customers' willingness to use electronic banking.It is appropriate to review the existing body of knowledge in this area for two major reasons. Firstly, researchers should benefit from a literature synthesis; practitioners would value summative analyses of research in this domain because it allows them to understand consumer behavior towards innovative electronic banking solutions. Secondly, scholars should benefit from this study as it integrates research across three electronic banking channels spanning over three decades. This paper investigates customers' willingness to use electronic banking services by examining the impact of a number of important factors,including customer demographics, prior knowledge, self-efficacy, perceived usefulness, ease of use, perceived security and perceived confidentiality.

3. METHODOLOGY

There is an established tradition of examining the research literature itself to better understand the 'state of play' of research in the field. The steps adopted are as follows:

A. Reviewing the existing literature on the adoption and utilization of electronic banking applications and tools.

B. Analyzing the research methodologies adopted by researchers used to investigate the adoption and utilization of electronic banking tools at the customer level.

C. Identifying research gaps within the existing literature of articles studied.

D. To understand more about customers' willingness to use e-banking systems, we developed a research model tested by the questionnaire, which incorporates customer-related factors. Customer-related factors are related to customer‘s characteristics and include self-efficacy, prior knowledge/experience, banking activity load, demographics, perceived ease of use, perceived confidentiality.

4. HYPOTHESIS

For e-banking adoption by customers, there are a variety of factors (traits and attitudes) that can influence willingness to conduct transactions online. Many studies have investigated various factors that can impact the adoption and use of e-banking systems (see for exampleKhalfan and Alshawaf, 2006). For example, among many other factors, security and confidentiality issues seem to be of profound impact on e-banking use (Daniel, 1999).

In this research, we incorporate security and confidentiality with other more established adoption factors (e.g. ease of use and usefulness) to better understand the impact of these factors on customers' willingness to use e-banking systems. In doing so, we compare and contrast the impact of these factors with those that relate to the personal characteristics of customers. Studying these factors in a unified model allows us to more learn about the relative importance of

various factors in the e-banking context. In the following section, we discuss in more detail our research model and propose a number of relevant hypotheses.

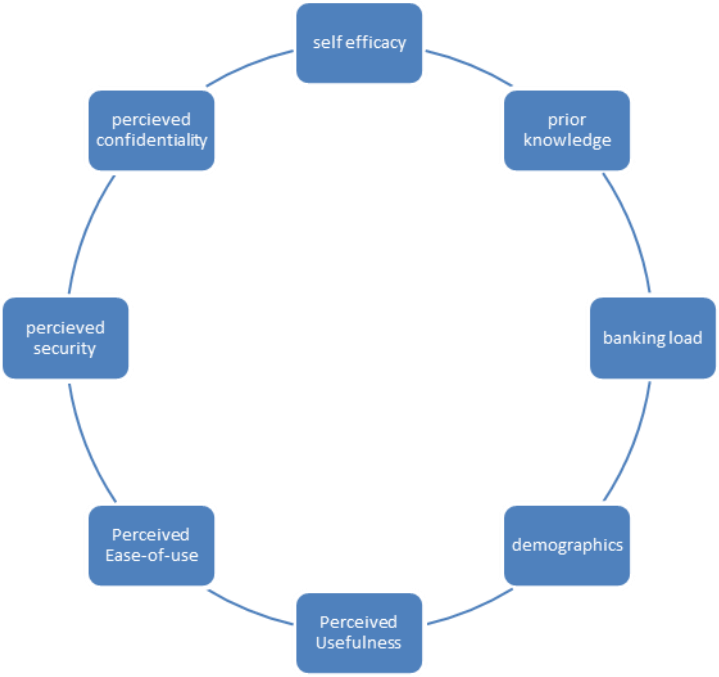


Figure: 1 customers related factors affecting customers' willingness to use electronic banking services.

H1: self-efficacy affects the customers' willingness to use electronic banking.

H2: prior knowledge affects customers' willingness to use electronic banking.

H3: demographics affects the customers' willingness to use electronic banking.

H4: banking load affects customers' willingness to use electronic banking.

H5: perceived usefulness affects customers' willingness to use electronic banking.

H6: perceived ease of use affects customers' willingness to use electronic banking.

H7: perceived security affects customers' willingness to use electronic banking.

H8: perceived confidentiality affects customers' willingness to use electronic banking.

Self-efficacy

Self-efficacy is known in traditional technology adoption literature as a person's confidence in his/her ability to use a new technology. Bandura (1993) describes it more broadly as "…people's beliefs in their ability to influence events that affect their lives". In the e-banking domain which normally involves interaction with technology hardware such as PCs or laptops, and software applications such as operating systems and internet browsers, it is imperative that users must first attain a minimum level of IT-related knowledge.

Many studies investigated self-efficacy and found that this factor has an important impact on technology use (Agarwal et al., 2003). Self-efficacy has also been studied in the e-banking context. For

example, Bedman (2015)found an indirect effect between computer self-efficacy and behavioral intention towards online banking. Therefore, in this study, we propose that:

Prior knowledge

Prior knowledge or prior experience is a well-established that influences technology use (see, for example, Lichtenstein, 2011). In line with this, this study also assesses the impact of the customer‘s prior knowledge on his/her willingness to use e-banking technology. We use the term prior knowledge rather than prior experience because we think that at this early stage of e-banking adoption in many countries, knowing about the existence of such systems is an important starting point for future adoption. In addition, we are interested to measure willingness to use, which is a pre-use stage, as a dependent construct and therefore we assume that prior knowledge of e-banking is important in order for a customer to decide whether he/she is willing or unwilling to use these systems. Several studies investigated this factor in different contexts and found that it provides a strong predictor of the acceptance and adoption.

Banking Load

Banking activity load also known as banking frequency or banking transactional frequency is an important factor that can determine whether or not the consumer feels the need to use an online

system to accomplish banking tasks. When the consumer conducts banking activities in larger numbers and higher frequency, he/she might find online banking more convenient (and useful) option than walking into a physical bank branch.

In this case, the consumer might be more willing to use an online banking system from his/her home or office. This factor does not have enough treatment in the literature where the majority of emphasis was placed upon online banking usage frequency, see for example Gulati and Kadyan (2010).Notwithstanding, some scholars have indirectly pointed out to the importance of banking load/frequency by emphasizing the positive correlation between frequency of performing phone banking with online banking usage.

Demographics

Demographics are known as important factors in technology adoption research and have always been key indicators and predictors of technology use. The literature has extensive research deliberations that examine the importance and the impact of demographic characteristics on technology in general, and online banking acceptance and dissemination in specific (see for example, Nishi, 2012; Sathye, 1999; Lichtenstein, 2011). This paper aims also to investigate the impact of Age, Education and Income on consumer willingness to use e-banking.

Perceived Usefulness

Perceived usefulness is the users' subjective probability that using a specific application system will increase his/ her job performance. Perceived usefulness is believed to be one of the fundamental and well-established determinants of the acceptance and use of IT related systems. For e-banking systems, the user perception of usefulness might influence his/her willingness and use of the system. Gulati and Kadyan (2010) found that perceived usefulness and information on online banking on the bank's website are the main factors that influence customers' acceptance.

Perceived Ease-of-use

Perceived ease of use is the degree to which the user expects the target system to be free of effort. Just like perceived usefulness, perceived ease of use is considered by many researchers to be a fundamental determinant of user acceptance. These two factors have frequently been examined together in a large number of technology acceptance studies. Here also, we think that ease of using e-banking can be a major determinant of customer's willingness to use the system. After all, e-banking is meant to make customers' life easier by saving them time, money and effort. Therefore, the ease of using the e-banking system is a major requirement for its success and adoption by customers.

Perceived Security

Many researchers highlighted the importance of providing security assurance to the users' online banking systems because it gives the customer the confidence he/she needs to use the system. In IT-related domains, security is defined as a threat which creates ―circumstances, condition, or event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosure, modification of data, denial of service and/or fraud, waste and abuse‖. In an e-banking system, security threats can either be through the network, through data transaction & transmission attacks, or through unauthorized access to the account by means of false authentication. Without an adequate sense of security, it is difficult to assume that the adoption and use of e-banking systems would ever take off.

Perceived Confidentiality (privacy)

Privacy is defined as the claim of individuals, groups, or institutions to determine when, and to what extent, information about them is communicated to others. Often, both privacy and security go together in all studies about technology acceptance (Sathye, 1999).Privacy concerns are vital to online activities and transactions and can constitute a major driver of/barrier to the adoption and use of e-banking systems.

5. FINDINGS

Research (based on primary data)

The objective of the analysis is twofold: firstly, to test the explanatory power of the research model in predicting banking customers 'willingness to use e-banking, and secondly to confirm/disconfirm the proposed hypotheses. The data collected from the survey was analysed using SPSS software package version 21.

The sample in this study is relatively young as 72% (33 respondents) is in the 20-30 age group, 24% (11 respondents) are 30-40 years old, and only 4% are above 40 years old. The young age group in the sample is advantageous for this study which explores the use of advanced electronic systems because the young population is usually better prepared to use advanced technologies compared to older ones. In terms of education, the sample is generally educated since at least 42 respondents out of 45 (90%) have attained bachelors or other degrees. This also is advantageous for our study since it is generally accepted that more educated individuals are usually more lenient to change and acceptance of new ideas. The sample is characterised by relatively high income earnings, which means that these customers might conduct more banking activities than those who earn small incomes. This is advantageousfor our study because evaluating the potential of using of e-banking systems would be more sensible if the sample conducts more banking transactions.

To test the explanatory power of the whole research model, we used regression analysis. This part of the analysis answers the following question: how well can these variables predict whether a customer will be willing or unwilling to use e-banking. The results of a standard multiple regression tests show that our model explains 40% of the variance in the willingness to use e-banking (R-squared value = .395). This is quite a respectable result for predicting customers' willingness (Bitner, 2001).

Self-Efficacy

In our research model, this set of factors include self-efficacy, prior-knowledge, banking activity load, demographics, perceived ease of use, perceived security and perceived confidentiality, . Self-efficacy is measured using a 5 point Likert scale. A one-way analysis of variance (ANOVA) test was conducted to explore the impact of self-efficacy on the willingness to use e-banking. We found a statistically significant difference at the $p < 0.05$ level in self-efficacy scores between those who are willing and those who are not willing to use e-banking : $F(1, 43) = 9.7$, $p = 0.003$. These results indicate that self-efficacy is a significant predictor of customers' willingness to use e-banking. Representing the data on a Means Plot graph showed that higher levels of self-efficacy are directly associated with more willingness to use the technology, which means that hypothesis H1 is supported.

H1: *The higher the consumer self-efficacy, the more willing he/she would be to use e-banking systems*.

Prior knowledge

Prior knowledge is measured in this study as a categorical variable (yes/no). The impact of prior knowledge on the dependent variable. For this purpose, we used chi-square test for independence.The results indicate no significant association between prior knowledge and customer‘s willingness to use e-banking, X2 (1, n = 46) = .012, p = .913. These results indicate that prior knowledge has no significant impact on willingness to use e-banking, which means that hypothesis H2 is not supported. This means that customers’ prior knowledge about e-banking technology has no direct association with whether they would be willing or unwilling to accept the use of this technology. This means that hypothesis H2-a is not supported.

Therefore, in this study, we propose that:

We further propose that prior knowledge/experience can greatly influence the customer‘s self-efficacy (Gulati and Kadyan, 2010). This means that when the consumer has prior knowledge about a certain technology, he/she would have more confidence in his ability to use that technology. We, therefore, hypothesize that:

H2: *The more prior knowledge of the e-banking system a customer has, the higher is his/her willingness to use the system.*

Banking load

To evaluate the impact of banking activity load or frequency on customers’ willingness to use e-banking technology, we used Pearson Chi-square test. The results indicate no significant association between

a customer‘s banking activity load and his/her willingness to use e-banking, X2 (3, n = 46) = 1.86, p = .64. This means that customers who conduct banking activities more frequently are not necessarily more inclined to use e-banking systems. Therefore, hypothesis H3 is not supported.

As a result, in this study, we hypothesize that:

H3: *The higher the banking activity load, the higher is the customer's willingness to use e-banking systems*.

Demographics

We run a series of additional chi-square tests to assess the demographics on customers' willingness to use e-banking. Demographic characteristics in this study include age, education, and income. The chi-square results show that demographics have no significant impact on willing to use: for the age-willingness path: X2 (2, n = 46) = .333, p = .847, for education-willingness: X2 (2, n = 46) = 1.610, p = .447, for income-willingness: X2 (3, n = 46) = .137, p = .987. Collectively, these results mean that hypothesis H4 is not supported.We therefore hypothesize that:

H4: *Customer's demographic characteristics including age, education and income have a direct impact on his/her willingness to use e-banking*

Perceived usefulness

Perceived usefulness is measured using a 5 point Likert scale. A one-way analysis of variance (ANOVA) test was conducted to evaluate the impact of this factor on the willingness to use e-banking. The results show a statistically significant difference at the $p < .05$ level in usefulness scores between those who are willing to use e-banking technology and those who are not. These results demonstrate that perceived usefulness is a significant and important predictor of customers' willingness to use e-banking, which shows that hypothesis H5 is supported.

In this study, we similarly hypothesize that:

H5: *The higher the customer's perception of the usefulness of e-banking, the higher is his/her willingness to use it.*

Perceived ease of use

Perceived ease of use is well-established determinant of the use of technology. Our study shows the same result, which re-emphasizes ease of use as a significant predictor of customers' willingness to use e-banking technology: $F (1, 41) = 4.947$, $p = .03$. However, the importance of this factor is not as strong as usefulness because the effect size is 0.11 which is slightly below Cohen's benchmark for what can be considered as a large effect size. Nevertheless, it is demonstrated in this study that ease of use is an important factor when it comes to predicting banking customers' willingness to use e-banking

technology, which means that hypothesis H6 is supported.As a result, we hypothesize that:

H6: *The higher the customer's perception of the ease of using the e-banking system, the higher is his/her willingness to use it.*

Perceived security

For perceived security, which we initially predicted along with perceived confidentiality to be very important factors in this study, results show that this factor is indeed a significant predictor of customers' willingness to use e-banking systems: F (1, 45) = 10.339, p = .002. This result is further supported by a large effect size: 0.19. Therefore, we can confidently say that whether customers perceive e-banking systems as secure or not has a direct impact on their willingness to use this technology, indicating that hypothesis H7 is supported. We therefore hypothesize that:

H7: *The higher the customer's perception of the security of the e-banking system, the higher is his/her willingness to use it.*

Perceived confidentiality

The last factor in the system-related set is perceived confidentiality or privacy. Even though confidentiality is usually linked with security, our analysis show that, unlike security, perceived confidentiality is not a significant predictor of customers' willingness to use e-banking systems: F (1, 44) = 0.437, p = .512. We can therefore

conclude that hypothesis H8 is not supported.Therefore, this research posits that:

H8: *The higher the customer's perception of the confidentiality of the e-banking system, the higher is his/her willingness to use it*.

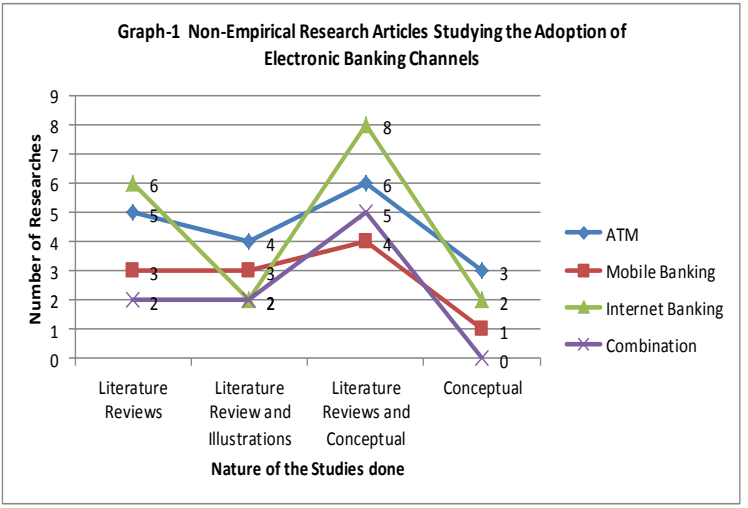
6. RESEARCH METHODOLOGY USED IN EARLIER RESEARCH (BASED ON SECONDARY DATA)

Non Empirical Research

Non-empirical research included articles based either on author`s subjective opinions and / or literature reviews. Non-empirical research was further sub-classified into literature reviews, conceptual articles, and illustrative contributions.Considering the novelty of this field, a high proportion of non-empirical work was anticipated.As demonstrated in Graph 1, the largest collection was based on literature reviews. It also shows that the majority of non-empirical research articles were based on adoption of internet banking whereas mobile banking channel is so far not that predominant in earlier studies. ATM s as well as internet banking is catching the interest of researchers majorly.Few researchers integrated these three banking channels accordingly in their study stated as combination.

For instance, Nath et al. (2001)examined banker`s views on providing banking services to customers using the internet and its effect on customer-bank relationships. The study also covered perceptions of banks regarding the strategic and operational value, its benefits to customers and banks, and the key technology

considerations. They concluded that few respondents thought that internet banking is just a fad while nearly half 49% believed that it is essential for a bank's survival and thus mandatory in order to compete effectively. Khandelwal (2011) analysed the factors influencing the customers' propensity to use electronic banking as a primary banking channel and to know the critical success factors among users of the electronic banking and concluded that the perception of the consumers could be changed by awareness program, friendly usage, less charge, proper security and the best response to the services offered. Demography played an important role in the adoption of electronic banking facilities.Kabir and HussainShah (2013) used secondary data and reviewed relevant literatures to help identify potential critical success factors of frauds prevention in electronic banking to understand factors that could be critical in strengthening fraud prevention systems in electronic banking. The findings showed that besides technology, there were other issues, such as internal controls, customer education, staff education etc., that need to be addressed.AbiudMoronge (2015) identified the relationship between the factors influencing on the adoption of information and communications technology in Rwandan commercial banks. The statistical results indicated that cost of adoption, risk of innovation, staff training had perceived and significant influence on information and communications technology.



Empirical Research

Empirical articles were classified as those relying on field observations usually captured through a number of methodological research techniques such as field surveys, case studies, field studies, interviews, field experiments, etc. Empirical articles were classified as qualitative research and quantitative research as well as mixed research.Jiaqin and KhTanveer(2009) investigated the current state of e-banking development in Bangladesh and evaluated whether the implementation of e-banking system was able to curtail frauds in commercial banks. It revealed that there is a huge gap between those well developed and new emerging economic powers (e.g. the USA European nations and China) and those least-developed nations (e.g. Bangladesh) in terms of development and application of e-banking services. Karimzadeh (2012) tried to understand the challenges and obstacles which are affecting the development of electronic banking in

India and compared the views of different groups of customers and staff regarding e-banking challenges and concluded that some aspects of socio-cultural issues do not support e-banking and suggestions were that thedecision makers should consider focusing on the trust, awareness, and confidence of users by enhancing security features, utilizing proper e-legislation.

A) Qualitative Research

(i) Case Study Studies: Case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident.Gulati and Kadyan (2010) used a multiple-case study design to explore banks internet channel strategies. Jiaqin and KhTanveer (2009) in their case study explored the major issues and challenges in the development of the electronic banking in underdeveloped nation i.e. Bangladesh.Gulati and Kadyan (2010) did case study on e-banking services in India, particularly Uttar Pradesh and found that in all respects the customers are satisfied with their internet banking. Major concerns of customers include security and privacy because of the growing number of online frauds, cheating cases and hacking. Younger generations were more likely to adopt electronic banking than older generations. People with higher education andthe high-income group were more likely to adopt electronic banking than the low-income group.

Frequent visitors to banks' websites were more likely to adopt electronic banking. Rasoulian and Safari (2011) studied the obstacles in the way of electronic banking in Iran. AbiudMoronge and Okiko(2012) investigated the level of adoption of Information and Communications Technology (ICT) in the banking sector also assessed the prospects of mobile-banking in Oman. The findings showed that most of the banks and the telecoms operators had the capability to offer superior quality electronic and mobile services to the residents of Oman, but the weaknesses were the level of patronage and fewer services.RajniSaluja (2012) studied and analyzed the progress made by Indian banking industry in adoption of electronic banking. The study was secondary based and analytical in nature and concluded that the most serious threat faced by electronic banking was that it was not safe and secure all the time. There was lack of preparedness both on the part of banks and customers in the adoption of technological changes. PayamHanafizadeh Byron W. Keating, RajniSaluja (2012)in their paper presented a systematic review of one hundred and sixty five research articles published on the adoption of Internet Banking (IB) between 1999 and 2014 The results show that interest in internet banking adoption has grown significantly during this period, and remains a fertile area for academic research in the next decade as well.

(ii) Focus Group Studies: Focus groupscomprises of a group of individuals selected and assembled by researchers to discuss and

comment on the topic that is the subject of the research. Few researchers classify their work based on the focus group analysis. For instance, Thulani (2011) study to investigate the benefits of SMS banking and the challenges facedby banks with the view of adopting this technology as an alternative delivery channel.The findings showed that although SMS banking was first launched in 2004, the service was still in its infancy. Evidence showed that accessibility and affordability were the major drivers to the adoption of SMS banking.Agarwal et al. (2009) determined the factors that affected customer perception and attitude towards electronic banking. Also studied the influence of the age of the respondent on the frequency of usage of e-banking to study the frequency of various problems faced while using e-banking in the northern India. The major findings depicted that customers were influenced in their usage of e-banking services by the kind of account they held, their age and profession, slow transaction speed was the most frequently faced problem while using electronic banking. SantoshRanganath and TulasiRao (2012)used a series of focus group studies to examine consumers' perceptions towards banking channel adoption in the UK. Consumer trust emerged as a particularly influential factor influencing consumers in their use of an electronic banking channel.

(iii) Grounded Theory Studies**:** Researchers in this category developed a theory to conceptualize new observations. For instance, Lichtenstein (2011) did an interpretive study in the

context of Australian banks to understand consumer adoption of internet banking. The findings suggested that convenience was the main motivator for consumers to bank on the internet.Lichtenstein and Williamson (2010) studied the adoption of Internet Banking services in the Australian bank, the authors interviewed Australian consumers and analyzed the data using grounded theory methods. The findings of this study were used to develop a theoretical framework modeling the factors influencing consumers' intentions to use internet banking applications.

(iv)Interview-based Studies**:** Researchers collected primary data through face-to-face interviews concerning their perceptions about electronic banking channelsLichtenstein (2011)interviewed consumers regarding their perceptions of the value propositions of mobile banking services. This exploratory study used a means–end approach and laddering techniques to facilitate the interview method. The results suggested that safety and convenience were perceived by the respondents as important value drivers for mobile banking adoption. Yang et al. (2007)examined the challenges and opportunities of electronic banking for the Greek banking sector, during the e-commerce era. The main findings demonstrated banking services should remain competitive, to keep track with technological developments and to benefit from the lower cost of e-banking transactions.

B) Quantitative Research

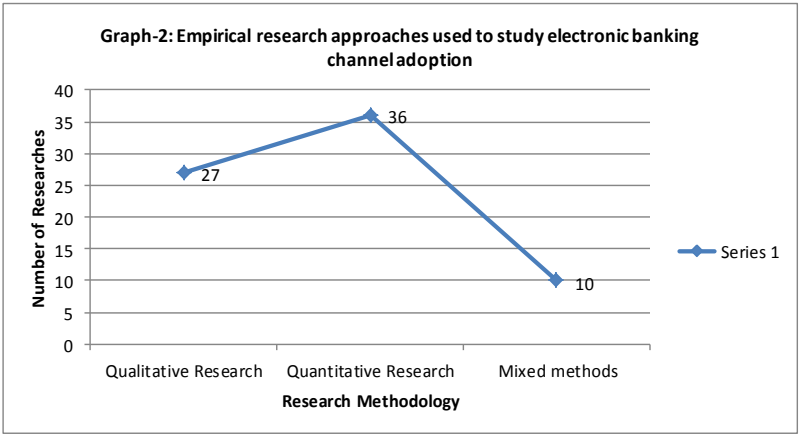
(i) Field Surveys: Field Surveys were used by numerous researchers to examine the consumers' perceptions and attitudes towards electronic banking channels.McKechnie et al. (2008) developed a research model predicting customers' continuous intentions to use internet banking services, and gathered data using a survey to test his model. Though his model was not that feasible and didnot work well to reveal the main reasons and intentions of users and non-users of electronic banking. Dzogbenuku (2011) applied a quantitative approach to obtain an insight of students' adoption (who are frequent users of mobile phone devices) in Ghana. Lohani and Bhatia (2012) measured and analyzed the quality of services provided by public sector and private sector banks in Lucknow (India) and measured the gap between expectations and their perceptions of banking services and concluded there existed a perceptual difference regarding overall service quality with the respective banks. Malhotra (2013)presents the status of internet banking in India and the extent of internet banking services offered by internet banks by public, private and foreign banks.Ismailand Osman (2015) investigated the factors impacting on customers` perceptions regarding branch banking, ATMs, telephone, and internet banking services. The authors developed a questionnaire and collected responses from bank consumers.

(ii) Experiments:Malhotra (2013) extended the technology acceptance model (TAM) by adding several variables specific to the use of ATM machines. To test the research model, the authors conducted an experiment involving college students. The students were exposed to two treatments including perceived waiting time and social anxiety. The findings suggested that both perceived waiting time and social anxiety would negatively influence consumer`s behavior to use ATM machines.

C) Mixed Methods

Nishi (2012) analyzed the overall satisfaction of rural customers. Bedman (2015) assessed the effectiveness of E-CRM based on feedback from both customers and bank officials. Findings revealed that ATM services and SMS update on customer accounts had greater acceptance and awareness among the customers, but still there is a lack of confidence in cyber security among customers. Suggestions for bankers-provide training and support e- literacy mission in state as banks CSR. Organize Customer Induction camps to create confidence in the customers on the safe use of E-Banking services. Bedman (2015) used both qualitative and quantitative approaches to investigate the challenges of marketing electronic banking services in Ghana. The results from the mixed method study indicated that institutional-based challenges as well as user-based challenges affect the marketing of e-banking products in Ghana. Graph 2 clearly shows that Quantitative

research has been chosen frequently by researchers to study the adoption and use of electronic banking channels as compared to Qualitative research.



Mixed methods were used by researchers comprising both quantitative and qualitative research tools.

7. DISCUSSION

The results of testing the proposed research model (Figure 1) and our set of hypotheses showed mixed, but interesting outcomes. These results present many interesting implications on the ways financial institution currently promote their e-banking systems. We discuss the results for each set of factors in the following sections.This conclusion has an important implication for financial institutions because it indicates the importance of offering customers with mock trials in order to convince them to use e-banking systems compared to

just providing general information through ads and commercials for example.

The insignificant result for the impact of banking activity load on customers‘ willingness to use e-banking systems indicates that our initial assumption that customers who conduct financial transactions more frequently would be more willing to use e-banking systems might not be completely valid. While this result might sound counter-intuitive at a first glance, it is in fact quite sensible because when it comes to monetary possessions, people tend to be generally more careful. If we submit that this is true, then customers who conduct more frequent financial transactions might actually be more hesitant to trust an online system to handle the large amounts of financial transactions they conduct daily, which is confirmed in our results from this study. So, does this mean that e-banking systems should be focused on customers with lower banking activity loads? Not necessarily.

What our result indicates is that banks' strategiespromote the use of e-banking systems should not be the same to all customers. It means that customers who conduct higher loads of banking activities might need different marketing and promotion techniques than those who conduct only a few transactions every now and then. This provides an important implication on the ways e-banking systems are currently promoted using single, mass-reaching campaigns. It might, therefore, be more fruitful for the future of e-banking systems if banks start thinking about what it takes for each group of customers (based

on their banking activities) to be convinced to replace traditional branch banking habits with the use of e-banking technologies.

Finally, for customer-related factors, demographics including age, education and income showed an insignificant impact on customers' willingness to use e-banking systems. This simply means that when it comes to financial activities, all age groups, all education groups, and all income groups have equal probability for using or not using e-banking systems. This puts forth a challenge for financial institutions because it becomes more difficult for them to predict which age, education, or income segments among their customers have stronger potential to become users of online baking technology. Further research might be needed here in order to understand more about the reasons behind this indifference in the individual characteristics of potential e-banking users.

On the basis of review of electronic banking channels it was observed that ATM is the most acceptable banking channel, internet is showing a steady increase whereas mobile banking is now taking pace. Qualitative research on e-banking demonstrated that researchers found it particularly valuable for obtaining rich data from consumers using electronic banking channels and their associated tools and applications. Very few researchers applied case study approach to analyze the major issues and challenges in the development of e-banking concentrating more on under-developed nations. So it shows that this method is traditional. Few researchers employed grounded theory techniques still

it was found that both the above methods did not provide in-depth information. Also, few studies employed focus group discussion consisting of consumers using electronic banking channels. Interviews were the most frequently applied qualitative method for gathering rich data. In many cases researchers used semi-structured interview protocols as part of analysis; research issues that have been frequently studied in the past were identified. This overview enables us to look ahead and highlight opportunities for valuable future research in this field.

Quantitative research has been chosen frequently by researchers to study the adoption and use of electronic banking channels. With the help of quantitative research methods researchers investigates and developed a research model predicting customer's continuous intentions regarding internet banking services. Survey research was by far the most widely adopted research method in our literature sample. Survey questionnaires have been utilized much more frequently than available alternatives. Several authors made use of organizational networks to collect data from e-banking users, and circulated survey questionnaires within organizations. The findings suggested that access to corporations was helpful for the data collection. It was also interesting to observe that the statistical techniques used to analyze quantitative data ranged from simple descriptive statistics to multivariate statistics including structural equation modeling. Lastly, only few studies recommended using an experimental research design in combination with a consumer panel. The literature review also revealed that qualitative and quantitative research methods have been

chosen in the past to study the consumer's attitudinal beliefs and value propositions of e-banking services. Also, inhibitors to the adoption of e-banking channels have been explored extensively. Mixed methods were used by researchers to analyze the overall satisfaction of rural customers and in assessment of e-CRM. In totality around 50 percent quantitative methods, 35 percent qualitative methods and 15 percent mixed methods are used for analysis. None of the identified papers reviewed for this study designed e-banking portals and researched individuals' perceptions towards the newly developed applications.

8. CONCLUSIONS AND CONTRIBUTIONS

This study aims to investigate the adoption of e-banking technology by examining the impact of a number of factors on customers' willingness to use e-banking. To accomplish this, we build a research model that includes two sets of factors: 1) customer-related factors, including self-efficacy, prior knowledge, banking activity load, and demographics, and 2) system related factors, including perceived usefulness, perceived ease-of-use, perceived security, and perceived confidentiality. The idea of this classification of factors is that the first set of factors is related to customer individual traits or characteristics, while the second set of factors is related to attitudinal perceptions of customers towards the e-banking system. The inclusion of and the distinction between these two types of factors offers unique and interesting theoretical and practical insights because it allows to understand how traits and attitudinal perceptions, individually and

collectively, affect consumers' acceptance of e-banking. Based on this a number of hypotheses are proposed.

To test the research model and hypotheses, we conducted a questionnaire study of 200 banking customers, out of which 46 valid responses were used in the analysis. The results show that the proposed model explains 40% of the variance in customers' willingness to use e-banking (R-squared value = .395). The testing of the proposed hypotheses showed mixed, but interesting results. On the one hand, only self-efficacy in the customer-related set of factors showed a significant impact on the willingness to use e-banking. On the other hand, all the system-related factors except perceived confidentiality showed a significant impact on customers' willingness to use e-banking technology.

In summary, it can be concluded from this study that customer-related set of factors which reflects individual traits or characteristics of customers can greatly vary among different societies and over time. For example, the results we presented in this study that pertain to individual characteristics might vary if we move from one geographical area to another because each area might have its own cultural connotations which usually reflect on the impact that individual differences (e.g. age, education, income, etc.) have on their behaviours.

Financial institutions that are planning to introduce e-banking technology should carefully consider and study the individual traits and characteristics of potential users in specific geographical areas where the technology is planned to be introduce. This will help them to understand the implications that these traits might have on customers' willingness to accept and use this technology.

Collectively, a system-related set of factors which reflects individual attitudes or perceptions towards certain (expected) features in an e-banking system seem to play a more influential role in determining or predicting customers' willingness to use these systems compared to customer-related characteristics. This shows that financial institutions need to make sure that the best features of their e-banking systems are well communicated to potential users in light of the individual differences among their customers and customer segments.

This research paper has provided an overview of the earlier researches on the adoption and utilization of electronic banking channels. In order to better understand the state of research in this domain, a systematic and comprehensive literature analysis consisting of one hundred and fifty peer-reviewed articles were studied. Our findings support future theory development in this domain. Several research gaps were identified, suggesting opportunities for fruitful future research. Interested researchers should be able to identify additional research opportunities through the information provided here. The findings presented here should be also of interest to banks and other financial institutions intending to distribute their products

and services through electronic banking channels. This study has incorporated research from across these disparate areas to provide an overall, up-to-date 'state-of-play' of research on the adoption of electronic banking applications for both transactional and decision making use.

9. LIMITATION AND FUTURE DIRECTION

This article present review of research papers assessing the research methodologies as well as aspects covered by researchers in adoption and utilization of electronic banking worldwide but it was less explored in the Indian context.However, it should be more focused on emerging economies like Brazil, Russia, India, China, South Korea, Mexico, Indonesia, Turkey, Saudi Arabia, Iran etc. It was found that customers perspectives regarding electronic banking were mostly studied by many researchers, though very limited researches were covering bankers' perspective as in many ways both are equally beneficial with the adoption of e-banking and to maintain a balance between service provider and service seeker it is important to study both the aspects. This research analysis covers limited factors only. More focus was given to the assessment of service quality gaps that occur between service providers and service seekers. Researches were either focussing purely on technology factors or purely on banking channels.Both technological, customer and banking factors are not studied altogether.Empirical studies were carried out to analyze customer's satisfaction with respect to electronic banking both in rural

and urban areas of many countries like Australia, Iran, but very few researches provide information about internet banking offerings and its determinants including recent trends and developments in e-banking in underdeveloped nations.An important delimitation of the paper is that the literature analysis was limited to internet banking and there is much beyond internet banking in purview of the study. With globalization and changing economic dynamics, today is the era where banks are not only focused on the domestic market as well as international market with a variety of services. The scope of the present study could be expanded in the future to include both bankers as well as customers' perspectives regarding the adoption and utilization of electronic banking.It should focus more on various banking channels which are not studied so far. Banks services are expanding day by day with the latest new and advanced services which should be targeted in future studies. While our literature review was extensive and spanned a number of different research domains though, some articles were missed. In order to advance research in electronic banking, future researchers should cover all essential aspects and consider diversifying their theoretical and methodological approaches using the opportunities uncovered in our findings.

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