Review of the Literature on Adoption and Use of Electronic Banking Channels Over Last Three Decades

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Abstract: The purpose of this paper is to explore and review the research articles published on research methodology adopted by researchers in adoption of electronic banking channels over the last three decades mainly targeting the three major banking channels i.e. ATM’s, internet banking and mobile banking. The study also examined the factors influencing their adoption in earlier researches. 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 the adoption and use of electronic banking channels in developing and under developed countries still remains fertile for further academic research.

Keywords: electronic banking, adoption, constraints, banking channels, ATM’s.

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 (Schneider, 2006). 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 (Makris et al., 2009). It also increased service quality which is necessary for survival in competitive markets (Rouibah et al., 2009).

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 (Lassar et al., 2005). 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 specially 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. 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.

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

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

A search for keyword was conducted on the databases in order to cover a broad range of journals these databases were further explored in orders to identify relevant papers. Articles that did not focus on the adoption and use of electronic banking channels at the individual level were excluded from the study. The current research tried to find answer to the following questions:

i. Which electronic banking channels were majorly studied?

ii. What were the research approaches / research methodologies used in the previous studies?

4. Finding

4.1 Research Methodology used in Earlier Research

4.1.1 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 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. ATMs 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, Ravi Nath, Paul Schrick and Monica Parzinger (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. Shilpi 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. Ahmad Kabir and Mahmood Hussain Shah (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. Machogu, Abiod Moronge and Okiko, Lynet (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.
4.2.2 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 Yang and Kh Tanveer Ahmed (2011) 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, Majid Alam (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 the decision 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. Lewis, G. A., and Smith, D. B. (2008) used a multiple-case study design to explore banks internet channel strategies. Jiaqin Yang and Kh Tanveer Ahmed (2009) in their case study explored the major issues and challenges in the development of the electronic banking in underdeveloped nation i.e Bangladesh. Kamal Gulati and Sunil Kumar 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 and high-income group were more likely to adopt electronic banking than low-income group. Frequent visitors to banks’ websites were more likely to adopt electronic banking. Dr. Mohsen Rasoulian and Monire Safari (2011) studied the obstacles in the way of electronic banking in Iran. Machogu, Abiud Moronge; Okiko, Lynet (2015) 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. Rajni Saluja (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 part of banks and customers in the adoption of technological changes. Payam Hanafizadeh Byron W. Keating, Hamid Reza (2014) 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 next decade as well.

(ii) Focus Group Studies: Focus groups “comprise 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 focus group analysis. For instance, Dube Thulani Njanike Kosmas (2004) study to investigate the benefits of SMS banking and the challenges faced by 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. Reeti Agarwal, Sanjay Rastogi and Ankit Mehrotra (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. Santosh Ranganath N., and Tulasi Rao G., (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, Sharman Lichtenstein, (2006) 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 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 channels. Laukkanen and Lauronen (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, J., Whitefield, M. and Boehme, K. (2012) 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. Mc Kechnie, Winklhofer, and Ennew, (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 didn’t work well to reveal the main reasons and intentions of users and non-users of electronic banking. Robert Kwame Dzogbenuku (2011) applied quantitative approach to obtain insight of student’s adoption (who are frequent users of mobile phone devices) in Ghana. Maya Basant Lohani, Pooja 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. Pooja Malhotra (2013) present the status of internet banking in India and the extent of internet banking services offered by internet banks by public, private and foreign banks .Ismail, Mohamed A., and Osman, Mohammed (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: Dabholkar and Bagozzi (2009) 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

Sharma Nishi (2012) analyzed the overall satisfaction of rural customers. Manoj P. K., Jacob
Joju and Vasantha (2014) 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 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. Narteh 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.

5. Discussion

On the basis of review of electronic banking channels it was observed that ATM is the most acceptable banking channel, internet is showing 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 underdeveloped 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 consumer’s attitudinal beliefs and value propositions of e-banking services. Also, inhibitors to 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 to analysis. None of the identified papers reviewed for this study designed e-banking portals and researched individuals’ perceptions towards the newly developed applications.

Aspects Captured in the Quantitative Research: Researchers frequently chose to study the adoption and use of electronic banking channels using quantitative method. Some of the aspects studied are summarized in figure-1. The findings revealed that ATM services and SMS update on customer accounts had greater acceptance and awareness among the customers. There was huge shift in customers’ satisfaction after the adoption of e-banking. E-banking was the easiest mode both for banks officials as well as the customers to get their things done 24*7. It was among the most studied topic especially in countries like Pakistan, Sudan, Jordan, Ghana, even in India, where it was catching huge attention day by day. Researchers were still focusing in exploring many aspects related to the adoption of e-banking in developing countries like India. It was found that the major reason behind the no or less adoption of e-banking was lack of knowledge in cyber Security and IT infrastructure among customers. Researchers concluded that the banks focused more on the tangible factors than intangible factors. Many researchers concluded that e-banking proves to be successful in increasing customer satisfaction than before. Those who studied the limitations in usage of e-banking by bank customers and found that major hindrance in its adoption is the fear of insecurity among the non-users which can be alleviated by the banks they rather found that factors like income level, e-literacy, awareness and lifestyle of the person significantly influences the usage. 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.
Researchers found this type of research to be more realistic. Some of the aspects studied are summarized in figure-1. Qualitative research on electronic banking demonstrated that researchers found it particularly more valuable. The findings showed that the most serious threat faced by electronic banking was that it was not safe and secure all the time along with that there was lack of preparedness both on part of banks and customers in the adoption of technological changes. Evidence showed that accessibility and affordability were the major drivers to the adoption of SMS banking. Consumer trust emerged as a particularly influential factor influencing consumers in their use of an electronic banking channel. The findings also highlighted increasing risk acceptance by consumers in regard to internet based services and the growing importance of offering deep levels of consumer support for such services. The main suggestions to banks were that they need to address the security issue, update technological developments and benefit from the lower cost of e-banking transactions.

6. Conclusions
This research paper has provided an overview of the earlier researches on 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.

7. 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 Indian context. However it should be more focussed 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 was 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. 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 study. With globalization and changing economic dynamics, today is the era where banks are not only focussing on domestic market as well as international market with 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 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.

References


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