Journal of Internet Banking and Commerce

An open access Internet journal (http://www.arraydev.com/commerce/jibc/)

Journal of Internet Banking and Commerce, August 2014, vol. 19, no.2
(*http://www.arraydev.com/commerce/jibc/*)

Research Trends in the Diffusion of Internet Banking in Developing Countries

HUMPHREY MUKI SABI
PhD Student, Information Systems Department, ICT University Baton-Rouge, Louisiana, USA & ICT University, Yaounde, Cameroon
Postal Address: **ICT University, P.O. Box 526, Yaounde, Cameroon**
Author's Personal/Organizational Website: www.ictuniversity.org
Email: ***sabihm@yahoo.co.uk***
Humphrey Sabi is currently a PhD student at the ICT University focusing on the adoption of advanced information and communication technologies in developing countries. His areas of interest are ICT adoption and diffusion, ICT implementation, ICT policy, Cloud Computing and software engineering. He holds an MSc in information Technology (software & systems) from Glasgow University, UK and a BSc in Physics from Ahmadu Bello University, Nigeria. He has over 15 years industry experience in the development and delivery of top quality software solutions and business processes to blue chip companies across Europe and Australia.

Abstract

The internet banking phenomenon has transformed the way banks across the world carry out banking transactions and has brought about new strategic directions for investment in banking information and communication technologies. This paper provides the research trends in the diffusion and adoption of internet banking in developing countries through a content analysis of existing literature that focused on developing countries. The main purpose of the study is to present the current level of research on internet banking in developing countries and expose any gaps that need scholarly attention. Through the analysis of 188 journal articles that focused on internet banking diffusion, adoption and implementation in developing countries, we found that research on internet banking has gained rapid scholarly attention in developing countries since the year 2000 when internet banking became a popular phenomenon and peaking in

2012. However the results also show a dominance of research studies based in Asian countries with many African, Caribbean and South American countries still lagging behind in internet banking research. The finding provides insightful directions and research gaps on internet banking and will be useful to academics and practitioners who are working or plan to work in the area of internet banking in developing countries.

Keywords: **Internet banking, online banking, E-banking, digital banking, developing countries**

INTRODUCTION

The advent of internet technology has significantly revolutionised the way business and service delivery is carried out by companies and businesses around the world today. Electronic commerce (EC) has transformed the marketing strategies of businesses in the way they sell and deliver their products to the end consumer through the use of the internet. Some of the business activities that have been facilitated through the use of EC include electronic fund transfer (EFT), supply chain management, electronic marketing (EM), online marketing (OM), online transaction processing, electronic data interchange (EDI) and automated data management among others (Zwass, 2003).

One area of EC that has been adopted by banks around the world is the phenomenon of internet banking (IB) or online banking. IB has been defined as the use of internet technology in the delivery of banking and financial services using the ubiquitous nature of the internet (George and Gireeshkumar, 2012); and also as the act of performing financial transactions remotely over the internet through a bank's dedicated website (Shao, 2007). This new service delivery method forms a subset of electronic banking (EB). This encompasses all forms of EB channels including automatic teller machines (ATM), IB, mobile banking (MB), credit and debit card transactions, telephone banking and EFT(Akinci, Aksoy and Atilgan, 2004). With the help of the internet, customers can do their banking transactions at anytime and anywhere as long as internet connectivity is available (Shao, 2007). Akinci et al. (2004) further states that the advent of these new delivery channels has contributed not only to the adoption of multi-channel strategies by the existing institutions, but also the emergence of new forms of financial businesses such as "virtual banks".

IB evolved as one of the primary applications of EC at the turn of the millennium due to the advantages it offers to both financial institutions and the customers. Customers are able to conduct personal and commercial banking activities quickly, efficiently and conveniently through the use of a bank's internet banking website without leaving the comfort of their home or office hence saving them money on travel cost and time to visit a branch of the bank to make the required transaction. This also provides the bank a way to replicate the same services offered traditionally at bank branches to their online customers at a lower operational cost (Dong and Bliemel, 2008).

It is estimated that the operational cost to the bank of performing a transaction on the internet is about $0.01 while the cost of doing the same transaction at a bank branch is estimated to be $1.07 (Sarel and Marmorstein, 2003; Nath, Schrick and Parzinger, 2001). These cost reductions in operational service provision account for the reason why many banks are investing in IB technology while trying to maintain the same service level and satisfaction to their customers.

Since the first IB services based on the world wide web (WWW) or the internet were provided by Stanford Federal Credit Union (SFCU) in October 1994 (Zimucha, 2012), IB has spread rapidly in many countries of the world as a result of its convenience and ease in conducting banking activities at anytime and anywhere as long as there is internet connectivity (Auta, 2010). IB has become not just a delivery channel but also a driver for comprehensive industrial change within the banking sector, resulting in the diffusion of IB technology worldwide.

The diffusion of IB is the process which IB communicates technology through certain channels over time to members of the banking community and bank users (Rogers, 1995). The diffusion if IB rapidly became one of the main EC applications together with online retail (e-business) and e-services at the start of the 21st century. Despite the benefits that come with this new delivery channel for banking services, many banks and consumers in some least developed and developing countries are yet to adopt and implement IB services (Fonchamnyo, 2013). This is not surprising because humans have always been known to resist change especially if the change will affect their way of working or interacting with each other. This reluctance to change is even greater when it comes to technological changes that will impact company culture and pose other uncertainties such as security risks and trust issues. Rogers (1995) posited that adopters of innovation can be divided into five categories – innovators, early adopters, early majority, late majority and laggards. Many sub-Saharan African countries and Caribbean countries fall within this group of late/slow/non-adopters of IB and classified under late majority and laggards in Rogers' (1995) categorisation.

IB started gaining scholarly attention from the mid to late nineties when banks started implementing information and communication technologies (ICTs) for IB service provision. Previous studies that have been carried out on the research trends in the diffusion of IB from 1998 to 2006, focused on developed countries, notably European countries and North America. Towards the later years (2003 – 2006) research on IB in developing countries, especially those from the Asian bloc started to gain rapid grounds. However, a review of these works has revealed that very little research was being done on IB in African countries. According to Shao (2007) only 3 research articles were uncovered in the trend analysis of IB in African countries while there were no articles found for the South American and the Caribbean countries.

The main aim of this research study is to investigate the trends in the adoption of IB in developing countries. This has been done by exploiting the gaps identified in Shao's (2007) trend study by focusing on research trends for developing countries only. The main objective of this research is to investigate what has been studied on the diffusion and adoption of IB in least developed and developing countries, and to uncover any gaps in the research. The results of this research will provide the current roadmap in the diffusion and adoption of IB research in developing countries, especially those in the

African continent. Webster and Watson (2002) stipulated that a methodological review of past literature is crucial for any academic research to help us uncover what is already known in the body of knowledge and where more research attention is needed. The findings will be useful for academics intending to carry out research in this area, and also for practitioners looking to implement or advise banks on the adoption of IB. This work will also help to provide a theoretical and conceptual framework for future research studies in this growing field of study.

RESEARCH METHODOLOGY

This study focuses on IB research trends in developing countries from 2000 to 2013. This research trend follows the steps in a systems approach to conducting an effective literature review in support of information systems research (Levy and Ellis's 2006). They proposed a framework that follows the systematic data processing approach that comprises of the following three major stages: inputs (literature gathering and screening); processing (following Bloom's Taxonomy) and outputs (writing the literature review). This review is therefore systematic-following the above steps; is explicit by explaining the procedures used in conducting the review; is comprehensive in scope by including all relevant material and hence reproducible by others if they follow the same steps in reviewing the topic (Nchise, 2012).

A qualitative content analysis of journal research papers on IB in developing countries was conducted to identify categories of factors impacting IB adoption that have been studied, research methodologies that have been used, theoretical frameworks, sampling types, sample population, countries and regions that have been studied and areas that need more scholarly attention. The selection of papers for this study was limited to journal articles because these are peer reviewed, and considered the best medium used by researchers and scholars to share recent and new scholarship on various topics.

Article Selection Strategy

Although IB just became popular in the late 90's to warrant scholarly interest, many research studies have been carried out on this topic during this period. Given the overlap between IB and banking as a whole, there are quite a few journals that deal with issues of IB as their main focus. These include the Journal of Internet Banking and Commerce (JIBC) and the International Journal of Bank Marketing (IJBM). Articles for the review were sourced by searching major electronic library databases such as EBSCOHOST, which is the most used online information resource for thousands of universities and institutions around the world with over 50 databases including: Business source Premier, Business source complete, Academic search complete, Computer source and Computer science index.

Other databases searched and cross-referenced included: Emerald, ABI-Inform and Google Scholar. These databases have a good coverage of academic research including IB research with more than 6000 journals covering various fields of research and over 200 conference proceedings indexed on EBSCOHOST databases alone. The articles retrieved from the database searches revealed that most of the IB research came from two journals that focus specifically on the issues of IB, banking commerce and bank management - JIBC and IJBM.

These two journals were therefore searched thoroughly by looking at each volume and issue from the year 2000 to 2013 to retrieve further articles focusing on IB adoption and diffusion. This resulted in additional articles being uncovered and together with the articles from the databases searches produced a reference library of 369 journal articles.

The databases were searched using search keywords that assisted in constricting the search results to articles relevant to our study. The search keywords used were: "internet banking and developing countries", "e-banking and developing countries", "electronic banking and developing countries", "online banking and developing countries", "digital banking and developing countries". It was noticed that when "internet banking, online banking or e-banking" were used on their own as a single criteria in the database searches, the number of articles returned were over 4000. Therefore, additional parameters such as "developing countries" were added in the search to ensure that the results returned were relevant to the topic of interest. This drastically reduced the number of articles to a reasonable number on EBSCOHOST for "e-banking and developing countries" showing that the additional parameter was having the desired effect. Also, when "internet banking" was used on its own in the database search on EBSCOHOST, this returned over 13000 articles. However, when "developing countries" was added to the search criteria ("internet banking" & "developing countries"), the results were again drastically reduced to a reasonable number of articles.

Three additional delimiters were then added on the articles returned by selecting the year 2000 as the start date for the publications to date. The Full Text checkbox was selected so that the search can only return full text articles and Scholarly (peer reviewed) Journals checkbox to return only academic peer reviewed journals. These delimiters further reduced the number of articles on EBSCOHOST for "e-banking and developing countries" and for "internet banking" & "developing countries". The same procedure was repeated on the other databases and for each of the keyword combination stated above. It was noticed that using Google Scholar for the searches brought back too many results, in most cases over 100000 even when the search is changed to include developing countries delimiters ("internet banking" & "developing countries"). Google Scholar was therefore limited to backward reference search, backward author search and forward author searches. Using backward and forward author searches is very useful for systematic literature reviews because authors are known to focus their research interests in one field of study and there is a likelihood of finding other articles on the same topic published by them that was not picked up by the database search or that are not indexed on the selected databases used for the initial search (Levy and Ellis, 2006).

Inclusion Criteria

Initially IB and EB were used interchangeably by researchers to refer to the same concept. However, given that EB is a broader term that embodies other electronic banking channels such as telephone banking, ATM, mobile banking, etc., this study had to include both terms in its search criteria to cover all possible electronic banking research articles and then filter the articles based on the following inclusion criteria:

- Peer reviewed research journal articles
- Articles whose study population was based on a developing country or emerging economy (classification of developing or emerging economy based on world bank classification 2012)

- Articles that focused on IB or online banking
- Articles written in English language

Exclusion Criteria
Articles that were excluded are:

- White papers, government reports, periodicals, news reports and sponsored research projects
- Conference proceedings
- Articles based on mobile banking or other forms of EB
- Articles whose study population is in the developed countries (Based on world bank classification 2012)
- Articles written in non-English language

Studies from developed countries were excluded because this research is aimed at looking at the adoption and implementation of IB in developing and emerging economies. Secondly there has been a lot of research done on the adoption and implementation of IB in the developed countries, and their IB systems are now beyond the adoption stage and more focused on improvements and assessment measures of its benefits. Another reason for excluding developed countries as mentioned earlier is that a trend research on this topic has been done in developed countries-notably Europe and North America (Shao, 2007). Shao's (2007) paper revealed a big research gap in studies on internet banking adoption in Africa and South America. Hence this study has evaluated the progress that has been made in the developing countries following a methodology similar to the review made by Shao (2007) to unearth areas and countries that need more research attention in the developing and least developed nations. Though there was a sharp rise in studies on IB in the Asian continent in the last 3 years of Shao's (2007) research, most of these studies were based in a few countries of the Asian region-notably India, Malaysia and Singapore. This review investigates the progress that has been made in the other developing countries in the Asian region and determines any gaps that need further scholarly attention in that region.

Quality Assessment
All the articles reviewed in this work were scanned through focusing on the abstract, methodology and results to determine if they should be included or excluded using the above inclusion and exclusion criteria. This process identified duplicate articles and many articles that were not addressing the internet or online banking diffusion, adoption and usage. All the resulting articles from the search were also digitally organized by using "authors surnames and year of publication" to avoid duplication when the same article is returned from different searches (Levy and Ellis, 2006). The assessment resulted in a usable library of 188 articles.

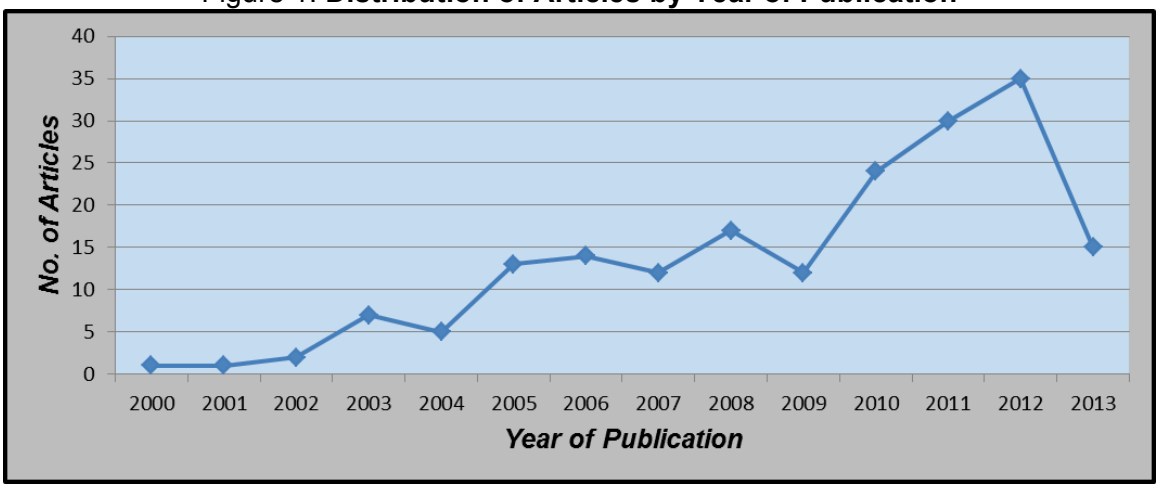
PRESENTATION OF FINDINGS

The 188 articles resulting from the quality assessment were classified following the classification method akin to one used by Nchise (2012) in his review of the trends in e-democracy research. The articles were classified into the following categories: Year of publication, Region, Journal, IS theory used, Research methods, Adoption variables, Sample Types, Population studied and Countries in Africa. A detailed bibliographic list of all articles used in the classification is provided in Appendix 1.

Classification of Articles by Year Of Publication

Figure 1 shows the classification of articles by year of publication from the year 2000 to 2013. It shows that there was very little research on IB in developing countries in the early part of the 21st century. This can be explained by the fact that IB was a fairly new phenomenon then and was still being adopted in developed countries (Shao, 2007). It also shows that academics interest into research on IB diffusion and adoption in developing countries became more prominent after 2010 and has continued rising since then. The numbers of articles for 2013 are lower compared to the previous 3 years (2010, 2011, and 2012). This can be explained by the natural diffusion curve where research into IB diffusion and adoption is beginning to slow down and giving way to the implementation and improvement phase. Another reason might be due to the fact that this content analysis was carried out during December 2013 when many articles for 2013 had either not been indexed on the various databases used for the search or were published in other databases that were not part of our selected databases.

Figure 1: **Distribution of Articles by Year of Publication**

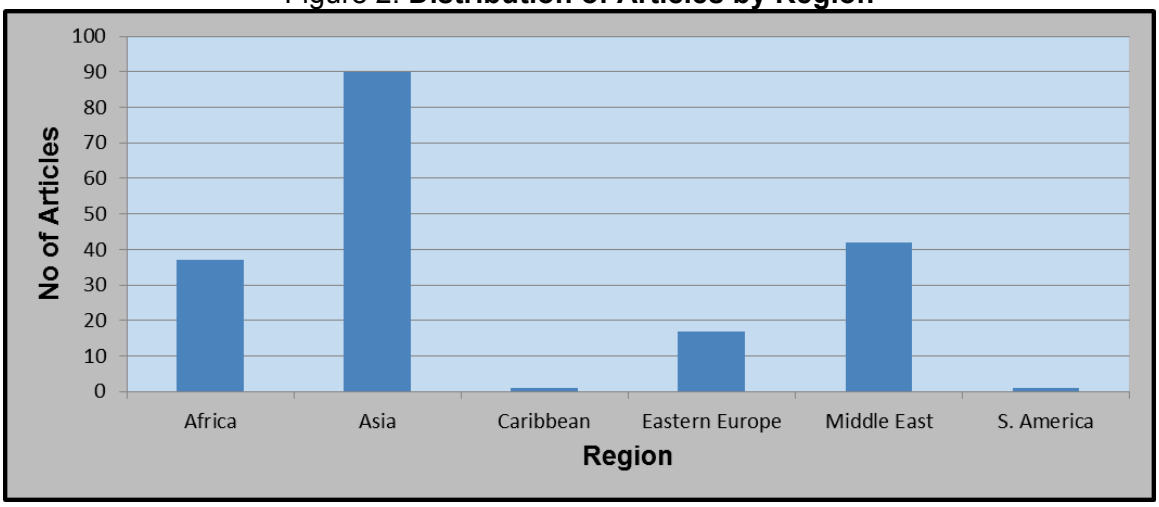


Distribution of Articles by Region

It was a bit problematic to divide the various regions of the world when trying to classify which countries fall under the Middle East region and which ones were considered to be within the Asian or African region. For the purpose of this review, Egypt, which is classified as a Middle East country will be considered under African countries based on the continental settings of the world. Also the countries in Eastern Europe have been classified under this review as developing or emerging economies based on the World Bank's 2012 classification. For the purpose of this review, six regional classifications has been used to represent developing countries and emerging economies of the world – Africa, Asia, Caribbean, Eastern Europe, Middle East and South America

Figure 2 below shows the distribution of research articles by region. It shows that most of the research on IB in developing countries has been carried out in Asia (90 articles, 47.9%). This is closely followed by the Middle East (42 articles, 22.3%), Africa (37 articles, 19.7%), Eastern Europe (17 articles, 9.0%), Caribbean (1 article, 0.5%) and South America (1 article, 0.5%).

Figure 2: **Distribution of Articles by Region**



The surprisingly low percentage of research articles from Eastern Europe may be explained by the fact that this review focused on English Language articles only and most of the countries in Eastern Europe use different languages. The same language barrier can be attributed to the South American region (0.5%), which had just one article in the review. The Caribbean (0.5%) remains a highly under-researched region as well based on this review with just 1 article. Though the Asian region is highly researched, this study still shows most of the research focused on just a sub-section of countries in that region. The review however shows a marked improvement for the African region compared to the data from Shao's (2007) review where Africa had just 3 articles. This regional classification still reveals a low focus of researchers in the study of IB diffusion and adoption in many developing regions of the world. This can be attributed to a shortage of case study opportunities of banks that have implemented IB hence limiting the research options or other environmental, cultural or socio-economic and political factors that are inhibiting research interest. It will therefore be relevant for Information System (IS) researchers to carry out exploratory studies in these regions especially the Caribbean and South America to determine the factors contributing to this low interest in research studies on IB in these regions.

Classification of Articles by Journal

This review has revealed that there are so many journals interested in academic research into the diffusion, adoption and usage of IB in the developing and emerging economies. However as shown in Table 1 below, the publishing of research studies on IB is dominated by 2 journals out of the 75 journals returned from our database searches – JIBC (56 articles, 29.8 %) and IJBM (27 articles, 14.4%). By their nature, these journals are focused on IB information technology research in particular and banking research in general. The first edition of the JIBC was published in 1996 when IB was beginning to gain prominence among academics and practitioners. The main aim of the journal was to provide a channel where research and knowledge on this emerging phenomenon could be shared to advance understanding of the technology. Meanwhile the IJBM, which was first published in 1983, focuses on research and innovation in banking hence also providing a good outlet for IB diffusion and adoption research. The increased number of articles from these journals can also be explained by the fact that most researchers in IB submit their research to them for publication as well as the fact

that all editions of these two journals were purposively reviewed from the year 2000 to 2013 as part of the article search process as has been explained above. The resultant article library from our database search had 75 journals in total with 60 of them having just 1 article on IB diffusion and adoption in developing countries (classified under others in the table below).

Table 1: **Distribution of Articles by Journal**

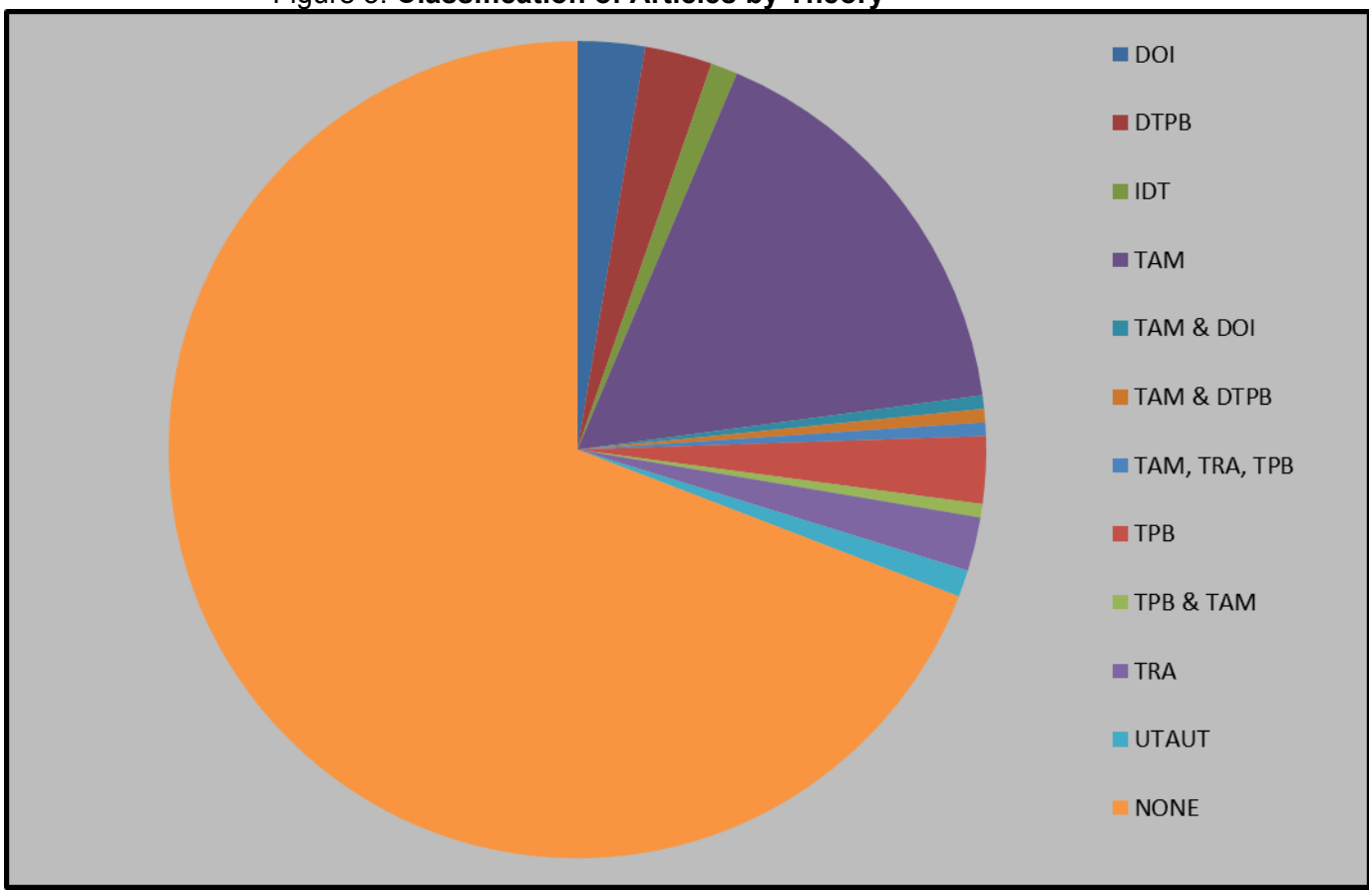
Journal Name	**Number of Articles**
Business and Management Review	2 (1.1%)
Indian Streams Research Journal	3 (1.6%)
Information Technology for Development	2 (1.1%)
Interdisciplinary Journal of Contemporary Research in Business	5 (2.7%)
International Journal of Bank Marketing	27 (14.4%)
International Journal of Business Administration	2 (1.1%)
International Journal of Business and Management	3 (1.6%)
International Journal of Business and Social Science	3 (1.6%)
International Journal of Economics and Finance	2 (1.1%)
Internet Research	7 (3.7%)
Journal of Financial Services Marketing	6 (3.2%)
Journal of Internet Banking and Commerce	56 (29.8%)
Journal of Services Marketing	2 (1.1%)
The IUP Journal of Marketing Management	6 (3.2%)
The Service Industries Journal	2 (1.1%)
Others (60 Journals with 1 Article each)	1 (0.5%) x 60
Total	**188 (100%)**

Classification of Articles by Theories

Findings from this review shows that the majority of the research on IB conducted in developing countries was not based on any theoretical framework (69 % of the articles) as shown in Figure 3. Many of the researchers focused on the adoption and diffusion concept without specifically stating the theory on which their research was grounded. However, among the articles that used a theory to underpin their research, the Technology Acceptance Model (TAM) was the one commonly used with 31 articles (16.5%) of the total number of articles (n=188) reviewed. The other theories used were Diffusion of Innovation (DOI), 5 articles(3%); Decomposed Theory of Planned Behaviour (DTPB), 5 articles(3%); Innovation Diffusion Theory (IDT), 2 articles(1%); Theory of Planned Behaviour (TPB), 5 articles(3%);Theory of Reasoned Action (TRA), 4 articles (2%); Unified Theory of Acceptance and use of Technology (UTAUT), 2 articles(1%); TAM & DOI, 1 article (1%); TAM & DTPB, 1 article(1%); TAM, TRA & TPB, 1 article (1%); and TPB & TAM, 1 article,(1%). A few articles used multiple theories to underpin their research but this was generally limited as revealed by the findings of this review. According to many researchers, TAM is very useful in determining user intentions to use a system and actual use of the system based on the perceived usefulness (PU) and

perceived ease of use (PEOU) of the system (Davis, 1989).

Figure 3: **Classification of Articles by Theory**



Article Classification by Research Method

Each article from the included list of 188 articles was coded for the research method used by the researchers in their study. Articles that used survey, content analysis or experimentation (technical implementation) were classified under quantitative research method while articles that used case studies, interviews, focus groups, observations or exploratory studies were classified under qualitative research methods. Articles using a combination of quantitative and qualitative methods were classified under mixed methods. Table 2 below shows the check list used during article classification by research method as adapted from Nchise (2012). It was found that most of the research done on IB adoption in developing countries has been based on quantitative research (171 articles, 91%) while a few have been done through qualitative research (11 articles, 6%) and 6 (3%) articles were found to have used a mixed method approach. The data collection methods used for the quantitative research included questionnaires, surveys and case studies with statistical data analysis; while the qualitative research included face to face interviews, qualitative case studies, observations and focus groups.

Table 2: **Article Classification by Research Method**

Research Method	Data Collection Method	Method of Analysis	No. of Articles (Percentage)
Qualitative	• Interviews • Focus groups • Observation • Exploratory • Case study	• Coding • Textual analysis	11 (6%)
Quantitative	• Questionnaires • Surveys • Experimental Implementation • Content analysis	• Descriptive statistics • Multivariate statistics • Correlation • Regression • Factor analysis	171 (91%)
Mixed Method	• Used both methods of data collection	• Used both methods for data analysis	6 (3%)

Article Classification by Adoption Variables

The 188 articles were coded for adoption variables used by the various authors to investigate IB adoption. The grouping for the factors impacting IB adoption was intuitively decided by the researchers based on the literature since many authors could refer to the same factor in a different way. For example, adoption variables such as risk, privacy, safety, confidentiality, security and trust were grouped together because they all address issues such as data security faced by customers online. The classification revealed 22 groups of variables that have been regularly investigated by researchers as independent variables impacting adoption of IB in developing countries. As shown in Table 3, the most researched variable identified by the authors that impacts IB adoption and diffusion in developing countries is data security (107 articles, 56.9%). Also due to many authors using TAM as the theoretical underpinning for their research, the investigation of TAM constructs of perceived ease of use (59 articles, 31.4%) and perceived usefulness (50 articles, 26.6%) were also extensively studied. Demographic factors such as age, educational level, gender, income and occupation were also frequently studied (39 articles, 20.7%) as well as computer self-efficacy, internet knowledge and education (35 articles, 18.6%). The percentages and numbers in Table 3 represent the proportion of articles that studied a particular variable since most articles investigated more than one variable.

Table 3: **IB Adoption Variables Studied**

Variable Ranking		
Risk, security, privacy, safety & trust	107	56.9%
Ease of use / usability	59	31.4%
Perceived usefulness and benefits	50	26.6%
Demographic factors(education, age, gender, income, occupation)	39	20.7%
Education & computer literacy/ self-efficacy / internet knowledge	35	18.6%
Social norms / image / status / behavioural control / attitude / culture	32	17.0%
Cost (implementation and user charges)	27	14.4%
Complexity, compatibility & compliance	24	12.8%
Performance expectancy & reliability	21	11.2%
Convenience	21	11.2%
Organisational credibility, reputation & capability	20	10.6%
Accessibility, availability &connectivity of internet	20	10.6%
Quality of services	20	10.6%
Infrastructure & technology	18	9.6%
Relative or competitive advantage & ROI	17	9.0%
Customer satisfaction	15	8.0%
Awareness & advertising of IB services	14	7.4%
Bank website design	14	7.4%
Triability, observability & results demonstrability	11	5.9%
Support (governmental and user support)	7	3.7%
Efficiency & effectiveness	4	2.1%
Diversity	2	1.1%

Article Classification by Sampling Type

The articles were also coded for the type of sampling used by the researchers in their investigation into IB adoption and diffusion in DC. As shown in Table 4, most of the IB adoption research used non-probability sampling (56.7%) for survey of respondents. This value includes those studies which specifically used common non-probability sampling methods such as researcher judgment (20.2%), Purposive sampling (17%) and convenience sampling (16.5%). Probability sampling (44.7%) was also commonly used with simple random sampling being the most frequently used probability sampling method (39.9%). The classification also revealed that many researchers were using purposive sampling for the qualitative studies.

Table 4: **Sampling Types**

Sampling Type			
Probability			
	Simple Random	75	(39.9%)
	Stratified	5	(2.7%)
	Cluster	4	(2.1%)
Non-Probability			
	Judgment	38	(20.2%)
	Convenience	31	(16.5%)
	Purposive	32	(17.0%)
	Snowball	3	(1.6%)
Total		188	(100%)

Article Classification by Population Studied

Table 5: **Sample Population**

Sample Population		
Bank Customers	64	(34%)
Internet bank users	37	(19.7%)
Students / Academicians	18	(9.6%)
Banks / Bank websites	18	(9.6%)
General public	15	(8%)
Internet users	14	(7.4%)
Bank staffs and managers	13	(6.9%)
Secondary data / Content analysis	10	(5.3%)
Business / Corporate customers / SMEs	5	(2.7%)
Non-Users of IB	5	(2.7%)

Our classification revealed that bank customers (64 articles, 34%) represented the study population frequently used by the authors to investigate IB adoption in developing countries. Researchers also took interest in evaluating IB usage, performance, concerns and accessibility issues by sampling users who have already adopted and registered for IB (37 articles, 19.7%). As shown in Table 5 above, other commonly used population sample included university students and lecturers (9.6%), Banks (9.6%) and bank managers or bank staffs (6.9%).

The percentages and article numbers for population studied shown in Table 5 are only indicative measures because some of the studies employed more than one sample type leading to double counting. For example some studies sampled both internet bank users and non-internet bank users to make a comparative analysis of their perception towards IB adoption and usage.

Article Classification by Countries

The article review revealed that most of the research into IB adoption and implementation has been carried out in India (31 articles, 16.5%) followed closely by Malaysia (20 articles, 10.6%). The number of articles from China were surprisingly low (6 articles, 3.2 %) given the rapid economic growth and the use of ICT in China. This can be explained by the fact that research in china may not have been carried out in the English language hence are not indexed in the databases we searched or published in the two key journals that were individually searched.

Given that the research interests of the researchers on this study revolves around ICT diffusion, adoption and implementation in Africa, the articles were further coded for research studies with samples based on countries in the African region. Nigeria emerged as the most researched country from the classification among the African countries represented in the review with 12 articles (6.4%) of the 188 articles reviewed.

Figure 4: **Article Classification for African Countries**

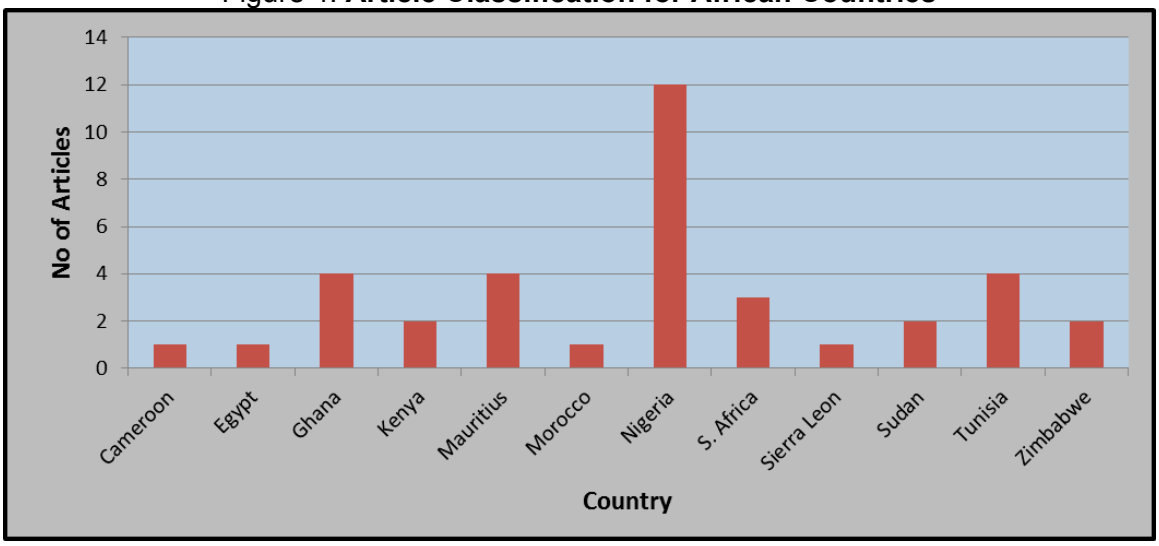


Figure 4 shows the African countries represented in the review. Cameroon which is the location from which this research study was instigated has just 1 article showing that there is a big gap in research into IB adoption and usage there. Also, the African continent has many countries which are not even represented in the review. This indicates that more research work needs to be carried out in Africa to evaluate the factors affecting the adoption and implementation of IB in the region. The researchers were surprised by the low number of research articles from South Africa (3 articles, 1.6%), which is one of the more advanced emerging economies in the African region.

This can be attributed to the fact that many of their research studies might not have been published in journals that were indexed on the databases that were searched as part of this study.

DISCUSSION

The current trend study is the first to focus entirely on research into IB diffusion and adoption in developing countries. The main aim of the study was to present the current status and rigorousness of IB adoption research in developing countries. This would provide an insight into future research for researchers and academics interested in this area. This work has also justified the need to embark on the study of IB diffusion in Africa in general, and Cameroon in particular where little has been done in this area of research.

The result of this review shows an improvement on IB adoption in developing countries, especially African countries compared to the results of the previous trend study carried out by Shao (2007) on IB in the world. The pattern shown in figure 1 for the diffusion of IB in developing countries from the year 2000 to 2013 is consistent with the diffusion of technology curve. It shows a steady growth in the diffusion research peaking in 2012. However, since the review reveals that many developing countries are still under-researched in the area of IB, we expect a continuation of the growth of research articles especially as many of them try to catch up with the developed countries on the IB phenomenon.

The classification revealed that internet and computer literacy (just 18.6%) are some of the important factors that affect user acceptance and usage of this new technology. Internet bank awareness (7.4%), infrastructure (9.6%) and accessibility to computers and internet (10.6%) were also seen to be imperative to adoption of IB since many customers in these developing countries lack access to a computer and the internet (Sukkar and Hasan, 2005; George and Gireeshkumar, 2012; Ezeoha, 2005; Agwu, 2012). The classification also showed that many researchers used demographic factors (20.7%) such as age, gender, education and income as well as social norms as study variables.

Customer attitude, culture and behavioural control (17%) were also very important factors in IB adoption in developing countries (Sukkar and Hasan, 2005; Boateng and Molla, 2006; Echchabi, 2011).

Relative or competitive advantage (9%), risk & security (56.9%), complexity & compatibility (12.8%) were very important factors considered by bank managers when investing into IB technology with risk and security being the most consistent factor studied (Agwu, 2012; Ezeoha, 2006; Akhlaq and Ahmed, 2013; Daud, Mamud and Aziz, 2011; George and Gireeshkumar, 2012). Cost savings (14.4%) and return on investment (9%) were also important factors for implementation of IB by bank management and decision makers who faced the conundrum of non-usage of IB by majority of customers (AbuShanab, Pearson and Setterstrom, 2010; Sarel and Marmorstein, 2004; Boateng and Molla, 2006).

The review revealed that most studies were not underpinned by a theoretical framework and the commonly used theories which were adapted and extended by the researchers included TAM (16.5%), DOI (2.7%), DTPB (2.7%), TRA (2.1%) and UTAUT (1.1%) (AbuShanab, Pearson and Setterstrom, 2010; Sukkar and Hasan, 2005; Adesina and Ayo, 2010; Echchabi, 2011).

Analysis of the results for the African Continent shows that Nigeria has had a good number of research articles in the area of EB and IB adoption-12 articles (6.4%) of all articles reviewed. Many African countries have no research articles on IB at all and Africa continues to be the highly under-researched continent in the area of information and communication technology and information systems research as a whole (Mbarika and Okoli, 2005). This review therefore justifies the existence of a research gap on the adoption and implementation of IB in many African countries including Cameroon (0.5%) where the researchers are basing their ICT research, which had just 1 article in the review. This research classification also considered the work of Shao (2007) to focus on developing countries only and has shown that more research is needed in the Caribbean, African and South American regions in the area of IB diffusion, adoption and implementation.

CONCLUSION

This work is one of the first attempts to map the trend in the research on IB or EB in the developing and emerging economies. The main purpose was to give a current picture of research endeavours in the area of IB, expose any gaps in the research and propose future directions into IB adoption and usage research in developing countries. The key findings have shown that most research into IB has been carried out in Asia while the most under-researched regions are South America and the Caribbean. In the African continent, the highest research on IB has been done in Nigeria, followed by Ghana, Mauritius and Tunisia. Results also reveal that research on IB adoption is yet to be done in many African countries. This shows a huge research gap which indicates that more research work has to be carried out in Africa to evaluate the factors affecting the adoption and implementation of IB in the region.

Even though all efforts were made during the literature search covering four major databases indexing over 8000 journals in various academic areas, this review cannot be considered exhaustive due to the diverse outlets for publications of research on IB and the continuous increase in journals around the world. Also, the article inclusion criteria focused on peer reviewed journals hence research studies that were published in conference proceedings and other non-academic outlets which could also contribute to the research trends were eliminated from the analyses. However, we are confident that the scope of the library of articles consulted and the findings that have emerged from the analysis is representative of the current research trends on IB in developing countries.

REFERENCES

Abbad, M., Abed, J. M., & Abbad, M. (2012).The Development of E-Banking in Developing Countries in the Middle East. Journal Of Finance, Accounting & Management, 3(2), 107-123.

AbuShanab, E., Pearson, J. M., & Setterstrom, A. J. (2010).Communications of the Association for Information Systems.

Adesina, A. A., & Ayo, C. K. (2010).An Empirical Investigation of the Level of Users' Acceptance of E-Banking in Nigeria.Journal Of Internet Banking & Commerce, 15(1), 1-13

Agwu, E. (2012). A Qualitative Study of the Problems and Prospects of Online Banking in Developing Economies–Case of Nigeria.Journal of Internet Banking and Commerce, 17(3).

Akhlaq, A., & Ahmed, E. (2013).The effect of motivation on trust in the acceptance of internet banking in a low income country. International Journal of Bank Marketing, 31(2), 115-125.

Akinci, S., Aksoy, S., & Atilgan, E. (2004). Adoption of internet banking among sophisticated consumer segments in an advanced developing country. International Journal of Bank Marketing, 22(3), 212-232.

Auta, E. M. (2010). E-banking in developing economy: Empirical evidence from Nigeria. Journal of applied quantitative methods, 5(2), 212-222.

Boateng, R., & Molla, A. (2006).Developing e-Banking capabilities in a Ghanaian Bank: Preliminary lessons. Journal of Internet Banking and Commerce, 11(2), 2006-08.

Daud, N. M., Mamud, N. I., & Aziz, S. A. (2011). Customer's Perception Towards Information Security in Internet Banking System in Malaysia. Journal of Applied Sciences Research, 7(9).

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319-339.

Dong, J., & Bliemel, M. (2008).Strategies for Increased Integration of Online and In-Branch Services of Banks in Canada.Journal of Internet Banking and Commerce, 13(3).

Echchabi, A. (2011). Online Banking Prospects in Morocco: An Extension of Technology Acceptance Model. Journal of Internet Banking and Commerce, 16(3).

Ezeoha, A. E. (2006). Regulating Internet Banking in Nigeria: some success prescriptions–part 2.Journal of Internet Banking and Commerce, 11(1).

Fonchamnyo, D. C. (2013). Customers' Perception of E-banking Adoption in Cameroon: An Empirical Assessment of an Extended TAM. International Journal of Economics & Finance, 5(1).

George, A., & Gireeshkumar, G. S. (2012). Risks in Internet Banking: Sample Evidence from Idukki District, Kerala. The IUP Journal of Bank Management, 11(3), 53-63.

Hsu, C. L., & Lu, H. P. (2004). Why do people play on-line games? An extended TAM with social influences and flow experience. Information & Management, 41(7), 853-868.

Levy, Y., & Ellis, T. J. (2006).A systems approach to conduct an effective literature review in support of information systems research.Informing Science: International Journal of an Emerging Transdiscipline, 9, 181-2

Mbarika, V. W., Okoli, C., Byrd, T. A., & Datta, P. (2005). The neglected continent of IS research: A research agenda for sub-Saharan Africa. Journal of the Association for Information Systems, 6(5), 130-170.

Nath, R., Schrick, P., & Parzinger, M. (2001).Bankers' perspectives on Internet banking.E-service Journal, 1(1), 21-36.

Nchise, A. C. (2012, June). The trend of e-democracy research: summary evidence and implications. In Proceedings of the 13th Annual International Conference on Digital Government Research (pp. 165-172).ACM.

Rogers, E. M. (1995). Diffusion of Innovations, Fourth Edition. New York, The Free Press

Sarel, D., & Marmorstein, H. (2003). Marketing online banking services: the voice of the customer. Journal of Financial Services Marketing, 8(2), 106-118.

Shao, G. (2007). The diffusion of online banking: research trends from 1998 to 2006. Journal of Internet Banking and Commerce, 12(2), 1-13.

Sukkar, A. A., & Hasan, H. (2005).Toward a model for the acceptance of internet banking in developing countries. Information Technology for Development, 11(4), 381-398.

Webster, J., & Watson, R. T. (2002).Analyzing the Past to Prepare for the Future: Writing a Literature Review. MIS Quarterly, Vol. 26, No. 2, pp. xiii-xxiii

Zimucha, T. (2012). An Evaluation of the Effectiveness of E-banking Security Strategies in Zimbabwe: A Case Study of Zimbabwean Commercial Banks. Journal of Internet Banking and Commerce, 17(3).

Zwass, V. (2003). Electronic commerce and organizational innovation: aspects and opportunities. International Journal of Electronic Commerce, 7, 7-38.

APPENDIX 1

NO	Reference
1	Abbad, M., Abed, J. M., & Abbad, M. (2012). The Development of E-Banking in Developing Countries in the Middle East. Journal Of Finance, Accounting & Management, 3(2), 107-123.
2	AbuShanab, E., & Pearson, J. M. (2007). Internet banking in Jordan: The unified theory of acceptance and use of technology (UTAUT) perspective. Journal of Systems and information Technology, 9(1), 78-97.
3	Adesina, A. A., & Ayo, C. K. (2010). An Empirical Investigation of the Level of Users' Acceptance of E-Banking in Nigeria. Journal Of Internet Banking & Commerce, 15(1), 1-13
4	Agwu, E. (2012). A Qualitative Study of the Problems and Prospects of Online Banking in Developing Economies–Case of Nigeria. Journal of Internet Banking and Commerce, 17(3).
5	Ahmad, A. M. K., & Al-Zu'bi, H. A. (2011). E-banking functionality and outcomes of customer satisfaction: an empirical investigation. International Journal of Marketing Studies, 3(1), p50.
6	Akhlaq, A., & Ahmed, E. (2013). The effect of motivation on trust in the acceptance of internet banking in a low income country. International Journal of Bank Marketing, 31(2), 115-125.
7	Akinci, S., Aksoy, S., & Atilgan, E. (2004). Adoption of internet banking among sophisticated consumer segments in an advanced developing country. International Journal of Bank Marketing, 22(3), 212-232.
8	Akinyosoye–Gbonda, O. O. (2011). Customers 'preference for e–banking services: a case study of selected banks in Sierra Leone. Australian Journal of Business and Management Research Vol, 1(4), 108-116.
9	Akram,s.,& Asghar, N. (2012). An empirical analysis of Customer satisfaction on adoption of internet Banking in Pakistan.Interdisciplinary journal of contemporary research in business, 3(9).
10	Al Nahian Riyadh, M., Akter, S., & Islam, N. (2009). The adoption of E-Banking in developing countries: A theoretical model for SMEs. International review of business research papers, 5(6), 212-230.
11	Alam, N., Magboul, I. H., & Raman, M. (2010). Challenges Faced by Sudanese Banks in Implementing Online Banking: Bankers' Perception. Journal of Internet Banking and Commerce, 15(2), 1-9.
12	Alam, S. S., Khatibi, A., Santhapparaj, A. S., & Talha, M. (2007). Development and prospects of internet banking in Bangladesh. Competitiveness Review: An International Business Journal Incorporating Journal of Global Competitiveness, 17(1/2), 56-66.
13	Al-Fahim, N. H. (2012). Factors Affecting the Adoption of Internet Banking Amongst IIUM'students: A Structural Equation Modeling Approach. Journal of Internet Banking and Commerce, 17(3).

14	Al-Hajri, S., & Tatnall, A. (2008). Adoption of Internet technology by the banking industry in Oman: a study informed by the Australian experience. Journal of Electronic Commerce in Organizations (JECO), 6(3), 20-36.
15	Aliyu, A. A., Younus, S., & Tasmin, R. (2012). An Exploratory Study on Adoption of Electronic Banking: Underlying Consumer Behaviour and Critical Success Factors. Case of Nigeria. Business and Management Review, 2 (1), 01, 6.
16	Al-Majali, M., & Nik Mat, N. K. (2010). Application of Decomposed Theory of Planned Behavior on Internet Banking Adoption in Jordan. Journal of Internet Banking and Commerce, 15(2), 1-7.
17	AL-Muala, A., AL-Majali, M., & AL Ziadat, M. (2012). The usage of internet banking services among Jordanian consumers. Journal Of Internet Banking & Commerce, 17(1), 1-10.
18	Alnsour, M. S., & Al-Hyari, K. H. A. L. I. L. (2011). Internet banking and Jordanian corporate customers: issues of security and trust. Journal of Internet Banking and Commerce, 16(1), 1-14.
19	Al-Sabbagh, I., & Molla, A. (2004). Adoption and use of internet banking in the Sultanate of Oman: an exploratory study. Journal of Internet Banking and Commerce, 9(2), 1-12.
20	Al-Smadi, M. O., & Al-Wabel, S. A. (2011). The impact of e-banking on the performance of Jordanian banks. Journal of Internet Banking and Commerce, 16(2), 1-10.
21	Amin, H. (2007). Internet banking adoption among young intellectuals. Journal of Internet Banking and Commerce, 12(3), 1-13.
22	Amin, H. (2009). An analysis of online banking usage intentions: an extension of the technology acceptance model. International Journal of Business and Society, 10(1), 27-40.
23	Anuar, M. M., Adam, F., & Mohamad, Z. (2012). Muslim Consumers' Perception on Internet Banking Services. International Journal of Business and Social Science, 3, 63-71.
24	Aslam, H. D., Khan, M., Tanveer, A., & Amber, T. (2011). Perceived Barriers Towards Adoption Of Internet Banking Among Non-Metropolitan Internet Users Of Pakistan. International Business & Economics Research Journal (IBER), 10(4), 45-56.
25	Auta, E. M. (2010). E-banking in developing economy: Empirical evidence from Nigeria. Journal of applied quantitative methods, 5(2), 212-222.
26	Awamleh, R., & Fernandes, C. (2006). Diffusion of internet banking amongst educated consumers in a high income non-OECD country. Journal of Internet Banking and Commerce, 11(3), 2.
27	Awamleh, R., & Fernandes, C. (2006). Internet banking: an empirical investigation into the extent of adoption by banks and the determinants of customer satisfaction in the United Arab Emirates. Journal of Internet Banking and Commerce, 91(83), 86.
28	Ayadi, A. (2006). Technological and organizational preconditions to Internet banking implementation: case of a Tunisian bank. Journal of Internet Banking and Commerce, 11(1), 1-15.

29	Ayo, C. K., Adewoye, J. O., & Oni, A. A. (2010). The state of e-banking implementation in Nigeria: A post-consolidation review. Journal of Emerging Trends in Economics and Management Sciences, 1(1), 37-45.
30	Azouzi, D. (2009). The adoption of electronic banking in Tunisia: An exploratory study. Journal of Internet Banking and Commerce, 14(3), 1-11.
31	Barbole, A., & Parakh, S. D. (2013). The study of consumer's perspective about internet banking: empirical evidence from western Maharashtra. Indian Streams Research Journal, 3(3).
32	Baten, M. A., & Kamil, A. A. (2010). E-banking of economical prospects in Bangladesh. Journal of Internet Banking and Commerce, 15(2), 1-10.
33	Behara, S. R., & Suryanarayana, M. (2013). Factors influencing behavioural intention to adopt net banking. Indian Streams Research Journal, 2(12).
34	Boateng, R., & Molla, A. (2006). Developing e-Banking capabilities in a Ghanaian Bank: Preliminary lessons. Journal of Internet Banking and Commerce, 11(2), 2006-08.
35	Boyacioglu, M. A., Hotamis, T. H., & Cetin, H. (2010). An Evaluation of Internet Banking in Turkey. Journal of Internet Banking and Commerce, 15(2), 1-32.
36	Brown, I., & Alemayehu Molla, I. D. P. M. (2005). Determinants of Internet and cell phone banking adoption in South Africa. Journal of Internet Banking and Commerce, 20, 20-29.
37	Brown, I., Hoppe, R., Mugera, P., Newman, P., & Stander, A. (2004). The impact of national environment on the adoption of internet banking: comparing Singapore and South Africa. Journal of Global Information Management (JGIM), 12(2), 1-26.
38	Butt, M. M., & Aftab, M. (2013). Incorporating attitude towards Halal banking in an integrated service quality, satisfaction, trust and loyalty model in online Islamic banking context. International Journal of Bank Marketing, 31(1), 6-23.
39	Çelik, H. (2008). What determines Turkish customers' acceptance of internet banking?. International Journal of Bank Marketing, 26(5), 353-370.
40	Chawla, S., & Sehgal, R. (2012). An Empirical Analysis of the Awareness and Satisfaction Level of Internet Banking Users with Respect to Demographic Profile. The IUP Journal of Marketing Management, 11(1), 62-83.
41	Cheah, K. G., Sanmugam, A., & Soon Yin, T. A. N. (2005). The profiling the Internet banking adopter. Journal of Internet Banking and Commerce, 29, 0-00597.
42	Chiemeke, S. C., Evwiekpaefe, A. E., & Chete, F. O. (2006). The adoption of internet banking in Nigeria: an empirical investigation. Journal of Internet Banking and Commerce, 11(3), 1-10.
43	Chong, A. Y. L., Ooi, K. B., Lin, B., & Tan, B. I. (2010). Online banking adoption: an empirical analysis. International Journal of Bank Marketing, 28(4), 267-287.
44	Daneshvar, P., & Ramesh, H. N. (2011). Gaining Competitive Advantage through Quality of Internet Banking Services--An Empirical Study in the Indian Private Bank Sector. Journal of Marketing & Communication, 6(3).

45	Dash, M., & Mohanty, A.K., (2011). Using the TAM Model to Explain How Attitudes Determine Adoption of Internet Banking. European Journal of Economics, Finance & Administrative Sciences, Issue 36, p50.
46	Datta, S. K. (2010). Acceptance of e-banking among adult customers: An empirical investigation in India. Journal of Internet Banking and Commerce, 15(2).
47	Daud, N. M., Mamud, N. I., & Aziz, S. A. (2011). Customer's Perception Towards Information Security in Internet Banking System in Malaysia. Journal of Applied Sciences Research, 7(9).
48	Dauda, Y., Santhapparaj, A. S., Asirvatham, D., & Raman, M. (2007). The impact of e-commerce security, and national environment on consumer adoption of internet banking in Malaysia and Singapore. Journal of Internet Banking and Commerce, 12(2), 20.
49	Echchabi, A. (2011). Online Banking Prospects in Morocco: An Extension of Technology Acceptance Model. Journal of Internet Banking and Commerce, 16(3).
50	El-Qirem, I. A. (2013). Critical Factors Influencing E-Banking Service Adoption in Jordanian Commercial Banks: A Proposed Model. International Business Research, 6(3), p229.
51	Eriksson, K., Kerem, K., & Nilsson, D. (2005). Customer acceptance of internet banking in Estonia. International Journal of Bank Marketing, 23(2), 200-216.
52	Eriksson, K., Kerem, K., & Nilsson, D. (2008). The adoption of commercial innovations in the former Central and Eastern European markets: The case of internet banking in Estonia. International Journal of Bank Marketing, 26(3), 154-169.
53	Ezeoha, A. E. (2005). Regulating Internet Banking in Nigeria: Problems and Challenges Part 1. Journal of Internet Banking and Commerce, 10(3), 1-5.
54	Ezeoha, A. E. (2006). Regulating Internet Banking in Nigeria: some success prescriptions–part 2. Journal of Internet Banking and Commerce, 11(1).
55	Fatima, A. (2011). E-banking security issues–Is there a solution in biometrics. Journal of Internet Banking and Commerce [online], 16(2).
56	Fonchamnyo, D. C. (2013). Customers' Perception of E-banking Adoption in Cameroon: An Empirical Assessment of an Extended TAM. International Journal of Economics & Finance, 5(1).
57	Foon, Y. S., & Fah, B. C. Y. (2011). Internet banking adoption in Kuala Lumpur: an application of UTAUT model. International Journal of Business and Management, 6(4), p161.
58	George, A., & Gireeshkumar, G. S. (2012). Risks in Internet Banking: Sample Evidence from Idukki District, Kerala. The IUP Journal of Bank Management, 11(3), 53-63.
59	Gerrard, P., & Cunningham, J. B. (2003). The diffusion of internet banking among Singapore consumers. International Journal of Bank Marketing, 21(1), 16-28.
60	Gerrard, P., Cunningham, J. B., & Devlin, J. F. (2006). Why consumers are not using internet banking: a qualitative study. Journal of Services Marketing, 20(3), 160-168.

61	Gikandi, J. W., & Bloor, C. (2010). Adoption and effectiveness of electronic banking in Kenya. Electronic Commerce Research and Applications, 9(4), 277-282.
62	Gilaninia, S., Alipour, H., Rahpeyma, P., & Mousavian, S. J. (2011). Effective Factors on Behavior Tendency in the Acceptance of Electronic Banking Based on Planned Behavior Model (TPB). International Journal of Business Administration, 2(4), p54.
63	Gilaninia, S., Fattahi, A., & Mousavian, S. J. (2011). Behavioral factors tend to use the internet banking services case study: system (SABA), the Melli Bank, Iran, Ardabil. International Journal of Business Administration, 2(3), p173.
64	Goi, C. L. (2006). Factors influence development of e-banking in Malaysia. Journal of internet banking and commerce, 11(2), 1-21.
65	Gupta, P. (2008). Internet Banking in India–Consumer Concerns and Bank Strategies. Global Journal of Business Research, 2(1), 43-51.
66	Guraau, C. (2002). Online banking in transition economies: the implementation and development of online banking systems in Romania. International Journal of Bank Marketing, 20(6), 285-296.
67	Hanafizadeh, P., & Khedmatgozar, H. R. (2012). The mediating role of the dimensions of the perceived risk in the effect of customers' awareness on the adoption of Internet banking in Iran. Electronic Commerce Research, 12(2), 151-175.
68	Hassanuddin, N. A., Abdullah, Z., Mansor, N., & Hassan, N. H. (2012). Acceptance towards the use of internet banking services of cooperative bank. International Journal of Academic Research in Business and Social Sciences, 2(3).
69	Heinonen, K. (2007). Conceptualising online banking service value. Journal of Financial Services Marketing, 12(1), 39-52.
70	Hernandez, J. M. C., & Mazzon, J. A. (2007). Adoption of internet banking: proposition and implementation of an integrated methodology approach. International Journal of Bank Marketing, 25(2), 72-88.
71	Ho, S. H., & Ko, Y. Y. (2008). Effects of self-service technology on customer value and customer readiness: The case of Internet banking. Internet research, 18(4), 427-446.
72	Hojjati, S. N., & Rabi, A. R. (2013). Effects of Iranian online behavior on the acceptance of internet banking. Journal of Asia Business Studies, 7(2), 123-139.
73	Hua, G. (2009). An Experimental Investigation of Online Banking Adoption in China. *Journal of Internet Banking & Commerce*, *14*(1).
74	Huang, J., Makoju, E., Newell, S., & Galliers, R. D. (2003). Opportunities to learn from'failure'with electronic commerce: a case study of electronic banking. Journal of Information Technology, 18(1), 17-26.
75	Hussien, M. I., & El Aziz, R. A. (2013). Investigating e-banking service quality in one of Egypt's banks: a stakeholder analysis. The TQM Journal, 25(5), 557-576.

76	Hway-Boon, O., & Yu, C. M. (2003). Success factors in e-channels: the Malaysian banking scenario. International Journal of Bank Marketing, 21(6/7), 369-377.
77	Ismail, H. B., & Panni, M. F. A. K. (2009). Factors affecting customer retention toward internet banking in Malaysia. Journal of Information & Knowledge Management, 8(01), 35-43.
78	ISMAIL, M. A., & OSMAN, M. A. (2012). Factors Influencing the Adoption of E-banking in Sudan: Perceptions of Retail Banking Clients. Journal of Internet Banking and Commerce, 17(3).
79	Jahangir, N., & Begum, N. (2007). Effect of perceived usefulness, ease of use, security and privacy on customer attitude and adaptation in the context of E-Banking. Journal of Management Research, 7(3), 147-157.
80	Jahangir, N., & Parvez, N. (2012). Factors Determining Customer Adaptation to Internet Banking in the Context of Private Commercial Banks of Bangladesh. Business Perspectives & Research.
81	Jaruwachirathanakul, B., & Fink, D. (2005). Internet banking adoption strategies for a developing country: the case of Thailand. Internet research, 15(3), 295-311.
82	Jenkins, H. (2007). Adopting internet banking services in a small island state: assurance of bank service quality. Managing Service Quality, 17(5), 523-537.
83	Joshua, A. J., & Koshy, M. P. (2011). Usage patterns of electronic banking services by urban educated customers: Glimpses from India. Journal of Internet Banking and Commerce, 16(1), 1-12.
84	Jui-Chu, L., Jin-Li, H., & Kang-Liang, S. (2005). The Effect of Electronic Banking on the Cost Efficiency of Commercial Banks: An Empirical Study. International Journal Of Management, 22(4), 605-611.
85	Juwaheer, T. D., Pudaruth, S., & Ramdin, P. (2012). Factors influencing the adoption of internet banking: a case study of commercial banks in Mauritius. World Journal of Science, Technology and Sustainable Development, 9(3), 204-234.
86	Kaleem, A., & Ahmad, S. (2008). Bankers' perceptions of electronic banking in Pakistan. Journal of Internet Banking and Commerce, 13(1), 1-16.
87	Kannabiran, G., & Narayan, P. C. (2005). Deploying Internet banking and e-commerce—case study of a private-sector bank in India. Information Technology for Development, 11(4), 363-379.
88	Karjaluoto, H., Mattila, M., & Pento, T. (2002). Factors underlying attitude formation towards online banking in Finland. International Journal of Bank Marketing, 20(6), 261-272.
89	Kassim, N. M., & Abdulla, A. K. M. A. (2006). The influence of attraction on internet banking: an extension to the trust-relationship commitment model. International Journal of Bank Marketing, 24(6), 424-442.
90	Kavak, B., & Demirsoy, C. (2009). Identification of adopter categories for online banking in Turkey. The Service Industries Journal, 29(8), 1037-1051.

91	Kazi, A. K. (2013). An empirical study of factors influencing adoption of Internet banking among students of higher education: Evidence from Pakistan. International Journal of Finance & Banking Studies (ISSN: 2147-4486), 2(2), 87-99.
92	Kesharwani, A., & Bisht, S. S. (2012). The impact of trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model. International Journal of Bank Marketing, 30(4), 303-322.
93	Khan, M. Z. A., & Khan, S. (2012). Internet versus Mobile Banking: A Study of Peshawar City (Pakistan). Journal of Internet Banking and Commerce, 17(3).
94	Khare, A. (2010). Online banking in India: An approach to establish CRM. Journal of Financial Services Marketing, 15(2), 176-188.
95	Khare, A., Khare, A., & Singh, S. (2010). Role of consumer personality in determining preference for online banking in India. Journal of Database Marketing & Customer Strategy Management, 17(3), 174-187.
96	Khurana, S. (2009). Managing service quality: An empirical study on internet banking. The IUP Journal of Marketing Management, 8(3), 96-113.
97	Kuo, T-H. (2011). The antecedents of CRM in e-banking industry. Journal of Computer Information Systems, 51 (3), 57-66.
98	Laforet, S., & Li, X. (2005). Consumers' attitudes towards online and mobile banking in China. International Journal of Bank Marketing, 23(5), 362-380.
99	Laukkanen, T. (2007). Customer preferred channel attributes in multi-channel electronic banking. International Journal of Retail & Distribution Management, 35(5), 393-412.
100	Liao, Z., & Wong, W. K. (2007). The determinants of customer interactions with internet-enabled e-banking services. Journal of the Operational Research Society, 59(9), 1201-1210.
101	Liu, C. H., Jing, J., & Huang, L. (2005). Internet banking: strategic responses to the accession of WTO by Chinese banks. Industrial Management & Data Systems, 105(4), 429-442.
102	Maenpaa, K., Kanto, A., Kuusela, H., & Paul, P. (2006). More hedonic versus less hedonic consumption behaviour in advanced internet bank services. Journal of Financial Services Marketing, 11(1), 4-16.
103	Malhotra, P., & Singh, B. (2007). Determinants of internet banking adoption by banks in India. Internet Research, 17(3), 323-339.
104	Malhotra, P., & Singh, B. (2010). An analysis of Internet banking offerings and its determinants in India. Internet Research, 20(1), 87-106.
105	Manafi,M.,Salehi, M., Hojabri, R., Gheshmi, R., Jamshidi, D., & Khatabi, P.(2011). The impact of regulatory framework and bank initiatives on the adoption of internet banking in Iran. Interdisciplinary journal of contemporary research in business, 3(5).

106	Mansor, N., Shariff, A. M., & Manap, N. R. A. (2012). Determinants of Awareness on Islamic Financial Institution E-Banking among Malaysian SMEs. International Journal of Business and Social Science, Vol. 3 No. 5
107	Mansumitrchai, S., & Chiu, C. (2012). Adoptation of Internet Banking in UAE: Factors Underlying Adoption Characteristics. International Journal of Management and Marketing Research, 5(1), 103-115.
108	Marakarkandy, B., & Yajnik, N. (2013). Re-examining and empirically validating the End User Computing Satisfaction models for satisfaction measurement in the internet banking context. International Journal of Bank Marketing, 31(6), 440-455.
109	Marfo-Yiadom, E., & Ansong, A. (2012). Customers' Perception of Innovative Banking Products in Cape Coast Metropolis, Ghana. International Journal of Business and Management, 7(3), p162.
110	Mat, N. K. N. (2011). Modeling the antecedents of internet banking service adoption (IBSA) in Jordan: A Structural Equation Modeling (SEM) approach. Journal of Internet Banking and Commerce, 16(1).
111	Mattila, M., Karjaluoto, H., & Pento, T. (2003). Internet banking adoption among mature customers: early majority or laggards?. Journal of Services Marketing, 17(5), 514-528.
112	Mermod, A. Y. (2011). Customer's perspectives and risk issues on e-banking in Turkey; Should We Still be Online. Journal of Internet Banking and Commerce, 16(1), 2011-04.
113	Modi, A. G., Patel, K. J., & Patel, K. M. (2013). Acceptance of Internet Banking Among Retail Customers: Survey Evidence from Ahmedabad Region. IUP Journal Of Bank Management, 12(1), 63-71.
114	Moghadam, B. A. (2012). Does Internet Advertising Affect the Internet Banking Effectiveness? A Three Dimensional Model for Iran. Journal of Internet Banking and Commerce, 17(3).
115	Muhammad, L. (2012). Factors Distressing Internet Banking Adoption among Adult Students: Evidence from Kingdom of Saudi Arabia. Business & Management Review, 2(1).
116	Mukherjee, A., & Nath, P. (2003). A model of trust in online relationship banking. International Journal of Bank Marketing, 21(1), 5-15.
117	Munusamy, J. (2012). Adoption of Retail Internet Banking: A Study of Demographic Factors. Journal of Internet Banking and Commerce, 17(3).
118	Munusamy, J., Annamalah, S., & Chelliah, S. (2012). Perceived Barriers of Innovative Banking Among Malaysian Retail Banking Customers. Journal of Internet Banking and Commerce, 17(1).
119	Mzoughi, N., & M'Sallem, W. (2013). Predictors of internet banking adoption: Profiling Tunisian postponers, opponents and rejectors. International Journal of Bank Marketing, 31(5), 5-5.
120	Narteh, B. (2012). Challenges of Marketing E-banking Services in a Developing Country: The Case of Ghana. Journal of Internet Banking and Commerce, 17(2).

121	Nasri, W. (2011). Factors influencing the adoption of internet banking in Tunisia. International Journal of Business and Management, 6(8), p143.
122	Ndubisi, N. O., & Sinti, Q. (2006). Consumer attitudes, system's characteristics and internet banking adoption in Malaysia. Management Research News, 29(1/2), 16-27.
123	Njuguna, P. K., MBA, P. S., Ritho, C., Olweny, T., & Wanderi, M. P. (2012). Internet Banking Adoption in Kenya: The Case of Nairobi County. International Journal of Business and Social Science, Vol. 3 No. 18
124	Nor, K. M., & Pearson, J. M. (2008). An exploratory study into the adoption of internet banking in a developing country: Malaysia. Journal of Internet Commerce, 7(1), 29-73.
125	Nor, K. M., Sutanonpaiboon, J., & Mastor, N. H. (2010). Malay, Chinese, and internet banking. Chinese Management Studies, 4(2), 141-153.
126	Nor, K., Barbula-Misu, N., & Stroe, R. (2011). A model for analysing the determinant factors of adoption e-banking services by Romanian customers. Economic Computation & Economic Cybernetics Studies & Research, 45(4), 1-18.
127	Oghenerukevbe, E. A. (2008). Customers Perception of Security Indicators in Online Banking Sites in Nigeria. Journal of Internet Banking and Commerce, vol. 13 , no.3
128	Omar, A., Sultan, N., Zaman, K., Bibi, N., Wajid, A., & Khan, K. (2011). Customer Perception towards Online Banking Services: Empirical Evidence from Pakistan. Journal of Internet Banking and Commerce, 16(2).
129	Omari, H., & Bataineh, T. (2012). The Impact of e-Banking on Achieving Competitive Advantage for Banks in Jordan. Interdisciplinary journal of contemporary research in business, 4(7).
130	Onyia, O. P., & Tagg, S. K. (2011). Effects of demographic factors on bank customers' attitudes and intention toward Internet banking adoption in a major developing African country. Journal of Financial Services Marketing, 16(3), 294-315.
131	Ozdemir, S., & Trott, P. (2009). Exploring the adoption of a service innovation: a study of internet banking adopters and non-adopters. Journal of Financial Services Marketing, 13(4), 284-299.
132	Ozdemir, S., Trott, P., & Hoecht, A. (2008). Segmenting internet banking adopter and non-adopters in the Turkish retail banking sector. International Journal of Bank Marketing, 26(4), 212-236.
133	Padachi, K., Rojid, S., & Seetanah, B. (2008). Investigating into the factors that influence the adoption of internet banking in Mauritius. Journal of Internet Business, 5, 99-120.
134	Panait, N. G. (2009). Modern solutions for the banking distribution channels: e-banking–strategy, cost and benefits. Revista Tinerilor Economisti (The Young Economists Journal); 1(12):28-33
135	Patil, U. N. (2012). Internet banking in India: Risk analysis and adoption in an emerging economy. Indian Streams Research Journal, 2.

136	Pikkarainen, K., Pikkarainen, T., Karjaluoto, H., & Pahnila, S. (2006). The measurement of end-user computing satisfaction of online banking services: empirical evidence from Finland. International Journal of Bank Marketing, 24(3), 158-172.
137	Polasik, M., & Wisniewski, T. P. (2009). Empirical analysis of internet banking adoption in Poland. International Journal of Bank Marketing, 27(1), 32-52.
138	Polatoglu, V. N., & Ekin, S. (2001). An empirical investigation of the Turkish consumers' acceptance of Internet banking services. International Journal of Bank Marketing, 19(4), 156-165.
139	Poon, W. C. (2007). Users' adoption of e-banking services: the Malaysian perspective. Journal of Business & Industrial Marketing, 23(1), 59-69.
140	Popoola, S. O., & Haliso, Y. (2010). Management perceptions of internet-based banking services in Nigerian commercial banks. African Research & Documentation, (112).
141	Prabhu, S., & Raghurama, A. (2011). Modeling the Adoption of Basic E-Banking Services in Urban and Semi-Urban Regions in India. The IUP Journal of Bank Management, Vol. X, No. 3, pp. 98-114
142	Qureshi, T. M., Zafar, M. K., & Khan, M. B. (2008). Customer acceptance of online banking in developing economies. Journal of Internet Banking and Commerce, 13(1), 1-9.
143	Rajarathinam, V., & Mba, M. (2013). Internet Banking Users's Competence and its Influence On Usage Satisfaction–A View from India. Journal of Internet Banking and Commerce, 18(3).
144	Raman, M., Stephenaus, R., Alam, N., & Kuppusamy, M. (2008). Information Technology in Malaysia: E-service quality and Uptake of Internet banking. Journal of Internet Banking and Commerce, 13(2), 1-18.
145	Ramseook-Munhurrun, P., & Naidoo, P. (2011). Customers' Perspectives of Service Quality in Internet Banking. Services Marketing Quarterly, 32(4), 247-264.
146	Ravi, V., Carr, M., & Sagar, N. V. (2006). Profiling of internet banking users in India using intelligent techniques. Journal of Services Research, 6(2).
147	Redlinghuis, A., & Rensleigh, C. (2010). Customer perceptions on Internet banking information protection. SA Journal of Information Management, 12(1), 6-pages.
148	Reid, M., & Levy, Y. (2008). Integrating trust and computer self-efficacy with TAM: An empirical assessment of customers' acceptance of banking information systems (BIS) in Jamaica. Journal of Internet Banking and Commerce, 12(3), 2008-12.
149	Riffai, M. M. M. A., Grant, K., & Edgar, D. (2012). Big TAM in Oman: Exploring the promise of on-line banking, its adoption by customers and the challenges of banking in Oman. International Journal of Information Management, 32(3), 239-250.
150	Riquelme, H. E., Mekkaoui, K. A., & Rios, R. E. (2009). Internet banking customer satisfaction and online service attributes. Journal of Internet Banking and Commerce, 14(2), 1-6.

151	Rotchanakitumnuai, S., & Speece, M. (2003). Barriers to internet banking adoption: a qualitative study among corporate customers in Thailand. International Journal of Bank Marketing, 21(6/7), 312-323.
152	Rusu, R. F., & Shen, K. N. (2011). An Empirical Study on E-banking Acceptance in the United Arab Emirates (UAE). Journal of Internet Banking and Commerce, 91(83), 86
153	Sadeghi, T., & Hanzaee, K. H. (2010). Customer satisfaction factors (CSFs) with online banking services in an Islamic country: IR Iran. Journal of Islamic Marketing, 1(3), 249-267.
154	Saeednia, H., & Abdollahi, H. (2012). Factors affecting client trust in online banking–a case study of saman bank. International Journal of Economics and Business Modeling, 3(1), 149-151.
155	Safeena, R., & Date, H. (2010). Customer perspectives on e-business value: Case study on Internet banking. Journal of Internet Banking and Commerce, 15(1), 1-13.
156	Safeena, R., Date, H., & Kammani, A. (2011). Internet Banking Adoption in an Emerging Economy: Indian Consumer's Perspective. Int. Arab J. e-Technol., 2(1), 56-64.
157	Salehi, M., & Alipour, M. (2010). E-banking in emerging economy: empirical evidence of Iran. International Journal of Economics and Finance, 2(1), P201.
158	Sanayei, A., Shaemi, A., & Salajegheh, M. (2011). Analysis of the factors affecting of Internet banking: Case study of customers of Mellat Bank in Isfahan city. Interdisciplinary journal of contemporary research in business, 3(4).
159	Seyal, A. H., & Rahim, M. M. (2011). Customer Satisfaction with Internet Banking in Brunei Darussalam: Evaluating the Role of Demographic Factors. e-Service Journal, 7(3), 47-68.
160	Shah, A. (2011). Internet banking in Pakistan: finding complexities. Journal of Internet Banking and Commerce, 16(1), 1-14.
161	Sharma, N. (2012). An Empirical Study of Rural Customer's Satisfaction from E-Banking in India. Journal of Internet Banking and Commerce, 17(3).
162	Sharma, S., & Singh, R. (2012). Factors Influencing Internet Banking: An Empirical Investigation. The IUP Journal of Bank Management, 10(4), 71-80.
163	Shih, Y. Y., & Fang, K. (2004). The use of a decomposed theory of planned behavior to study Internet banking in Taiwan. Internet Research, 14(3), 213-223.
164	Shih, Y. Y., & Fang, K. (2006). Effects of network quality attributes on customer adoption intentions of internet banking. Total Quality Management & Business Excellence, 17(1), 61-77.
165	Singh, B., & Malhotra, P. (2004). Adoption of Internet banking: An empirical investigation of Indian banking Sector. Journal of Internet Banking and Commerce, 9(2), 9909-05.
166	Singh, J., & Kaur, P. (2013). Customers' attitude towards technology based services provided by select Indian banks: Empirical analysis. International Journal of Commerce and Management, 23(1), 56-68.

167	Singh, T., & Kaur, M. (2012). Internet Banking: Content Analysis of Selected Indian Public and Private Sector Banks' Online Portals. Journal of Internet Banking and Commerce, 17(1).
168	Singhal, D., & Padhmanabhan, V. (2008). A study on customer perception towards internet banking: identifying major contributing factors. Journal of Nepalese business studies, 5(1), 101-111.
169	Siu, N. Y. M., & Mou, J. C. W. (2005). Measuring service quality in internet banking: the case of Hong Kong. Journal of International Consumer Marketing, 17(4), 99-116.
170	Sohail, M. S., & Shaikh, N. M. (2008). Internet banking and quality of service: perspectives from a developing nation in the Middle East. Online Information Review, 32(1), 58-72.
171	Sudhahar, C., & Karthikeyan, S. (2010). Diffusion of Internet Banking in India: An Empirical Study. Advances In Management, Vol.3, No.11, pp.15–20.
172	Suki, N. M. (2010). An empirical study of factors affecting the internet banking adoption among Malaysian consumers. Journal of Internet Banking and Commerce, 15(2), 2-11.
173	Sukkar, A. A., & Hasan, H. (2005). Toward a model for the acceptance of internet banking in developing countries. Information Technology for Development, 11(4), 381-398.
174	Tan, M., & Teo, T. S. (2000). Factors influencing the adoption of Internet banking. Journal of the AIS, 1(1es), 5.
175	Tandrayen-Ragoobur, V., & Ayrga, A. (2011). Is Mauritius Ready to E-Bank? From A Customer and Banking Perspective. Journal of Internet Banking & Commerce, 16(1).
176	Thulani, D., Tofara, C., & Langton, R. (2009). Adoption and Use of Internet Banking in Zimbabwe: An Exploratory Study. Journal of Internet Banking & Commerce, 14(1).
177	Twum, F., & Ahenkora, K. (2012). Internet Banking Security Strategy: Securing Customer Trust. Journal of Management and Strategy, 3(4), p78.
178	Waince, A. G., & Ramzan, M. (2013). Opportunities and constraints in expending e- banking in developing countries. Interdisciplinary journal of contemporary research in business, 4(11).
179	Wan, W. W., Luk, C. L., & Chow, C. W. (2005). Customers' adoption of banking channels in Hong Kong. International Journal of Bank Marketing, 23(3), 255-272.
180	Wang, Y. S., Wang, Y. M., Lin, H. H., & Tang, T. I. (2003). Determinants of user acceptance of internet banking: an empirical study. International Journal of Service Industry Management, 14(5), 501-519.
181	Yu, C. S. (2008). Assessing and differentiating the quality of Internet-based services: a case of online banking in Taiwan. The Service Industries Journal, 28(5), 581-602.
182	Yuan, X., Lee, H. S., & Kim, S. Y. (2010). Present and future of Internet banking in China. Journal of Internet Banking and Commerce, 15(1), 1-10.

183	Zhao, A. L., Hanmer-Lloyd, S., Ward, P., & Goode, M. M. (2008). Perceived risk and Chinese consumers' internet banking services adoption. International Journal of Bank Marketing, 26(7), 505-525.
184	Zhao, A. L., Koenig-Lewis, N., Hanmer-Lloyd, S., & Ward, P. (2010). Adoption of internet banking services in China: is it all about trust? International Journal of Bank Marketing, 28(1), 7-26.
185	Zhu, Y. Q., & Chen, H. G. (2012). Service fairness and customer satisfaction in Internet banking: exploring the mediating effects of trust and customer value. Internet Research, 22(4), 482-498.
186	Zimucha, T. (2012). An Evaluation of the Effectiveness of E-banking Security Strategies in Zimbabwe: A Case Study of Zimbabwean Commercial Banks. Journal of Internet Banking and Commerce, 17(3).
187	Zolait, A. H. S. (2010). An examination of the factors influencing Yemeni Bank users' behavioural intention to use Internet banking services. Journal of Financial Services Marketing, 15(1), 76-94.
188	Zolait, A. H. S., Mattila, M., & Sulaiman, A. (2009). The effect of User's Informational-Based Readiness on innovation acceptance. International Journal of Bank Marketing, 27(1), 76-100.