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## Challenges of Marketing E-banking Services in a Developing Country: The Case of Ghana

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### Abstract

Even though there is a plethora of studies investigating the challenges of adopting e-banking services, a search through the literature indicates that prior studies have investigated either user adoption challenges or the bank implementation challenges. This study integrated both perspectives to provide a broader conceptual framework for investigating challenges banks face in marketing e-banking services in developing country such as 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. The strategic implications of the findings for marketing e-banking services are discussed to guide managers to implement e-banking services in Ghana.

**Keywords: Electronic banking, Developing countries, User challenges, Institutional challenges, Ghana.**

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## INTRODUCTION

The advent of Information and Communications Technology has led to the proliferation of electronic-based banking products as an alternative channel for routing banking services to customers. Electronic banking (e-banking) has changed the face of commercial banking in recent times by bridging geographical, industrial and regulatory gaps as well as creating innovative products and services and more market opportunities for both banks and customers (Liao and Cheung, 2002; Khan and Karim, 2010). Scholars and practitioners have identified benefits such as lower costs, wider reach, higher competitiveness and generation of higher long-term profits (Polatoglu and Ekin, 2001; Rotchanakitumnuai and Speece, 2003; Shah and Siddiqui, 2006) to be associated with the introduction of e-banking services.

As a result of its perceived benefits, e-banking has attracted a lot of scholarly attention. Hitherto, studies have focused on electronic service quality (Ibrahim *et al.*, 2006); factors affecting the adoption of internet banking by customers (Eriksson *et al.*, 2005; Jahangir and Begum, 2008); prospects and challenges of e-banking (Ainin *et al.*, 2005). Realizing that adoption levels have not matched provider expectations, scholars have recently begun to focus on the barriers of e-banking adoption (Rotchanakitumnuai and Speece, 2003; Gerrard *et al.*, 2006).

Most of these studies have focused on user adoption barriers (Pikkarainen *et al.*, 2004; Rotchanakitumnuai and Speece, 2003; Gerrard *et al.*, 2006; Alem and Alem, 2009), while a few have also focused on institutional barriers (Shah and Siddiqui, 2006).

To the best of our knowledge, no study has integrated both institutional and user barriers to study the challenges of marketing e-banking services, even though both constitute potential threats to the marketing of e-banking services. This study therefore addressed this research gap by integrating institutional and consumer based barriers into a broader framework for studying the challenges of marketing e-banking services within the banking industry. Scholars have found that implementation of e-banking has been more successful in other parts of the world than in Africa (Sayar and Wolfe, 2007). The study will provide bank managers with an insight into the critical factors that must be addressed in order to improve the overall adoption of electronic banking services in a developing country such as Ghana.

The objective of the study therefore is to determine the institutional as well as the user-related factors that affect the marketing of e-banking services in the Ghanaian retail banking industry.

The rest of the paper will proceed as follows. The next section discusses the Ghanaian banking industry in order to provide a context for the study. Subsequently, we will then discuss the literature review and the research model. The methodology is then presented followed by the data analysis. The next section discusses findings of the study

while the last section continues with the limitations of the study and directions for future research.

## **THE GHANAIAN BANKING INDUSTRY**

Commercial banking in Ghana predates colonial times. The literature indicates that the Bank of British West Africa (BBWA) now called Standard Chartered Bank Ghana Limited was the nation's first commercial bank. It was followed by Barclays Bank Ghana Limited, then subsequently the Bank of Ghana and the Ghana Commercial Bank (Woldie *et al.*, 2008). In recent times, more banks have entered the Ghanaian economy due to favourable economic conditions and a more liberalized financial sector; thereby, making the Ghanaian banking industry very competitive. Currently there are 28 banks operating in the Ghanaian banking industry with over 856 bank branches (Ghana Banking Survey, 2011).

Most of these banks have adopted new and innovative ways to improve service delivery in a bid to combat competition. One significant means of achieving competitive advantage has been the adoption of e-banking services. The earliest forms of ICT technology employed by Ghanaian banks were mainly office automation devices such as telephones, telex and the facsimile. For many years they remained the main technologies utilized in transacting bank business (Abor, 2004), until later in the 1980s when the personal computer (PC) gained popularity. Arguably, the most revolutionary electronic banking innovation in this country and the world over has been the Automated Teller Machine (ATM) and the numerous electronic cards. The first major cash card, called the 'Sika Card' was a product of Social Security Bank, which was introduced in May 1997 (Abor, 2004). As at today, in addition to ATMs, most of the banks have implemented internet banking, telephone banking, SMS alerts among others to deploy banking services to the customers. Anecdotal evidence however, indicates that the adoption of these electronic services is below expectation in Ghana thereby calling for a need to investigate the challenges affecting customer adoption of e-banking services.

## **LITERATURE REVIEW AND THEORETICAL MODEL**

E-banking has been defined by Pearce and Robinson (2009) as banking by which individuals transfer funds, make account balance enquiries, pay bills and manage such assets as stocks online. It is also described by Singh and Malhotra (2004) as the use of banking products and services over electronic and communication networks directly by customers. The common types of electronic banking mostly mentioned in the literature include SMS banking, mobile (m-banking), Automated Teller Machines (ATMs), telephone banking, personal computer banking, internet banking and electronic cheque clearing systems (Abor, 2004). According to Shah and Siddiqui (2006), the provision of banking services via the internet (e-banking) is increasing today and new channels may evolve very soon.

Dishaw and Strong (1999) indicate that the Technology Acceptance Model (TAM) and the Task-Technology Fit model (TTF) have been used extensively to explain the adoption of e-banking. The models provide quite different but sometimes overlapping perspectives on the utilization behavior of these electronic channels.

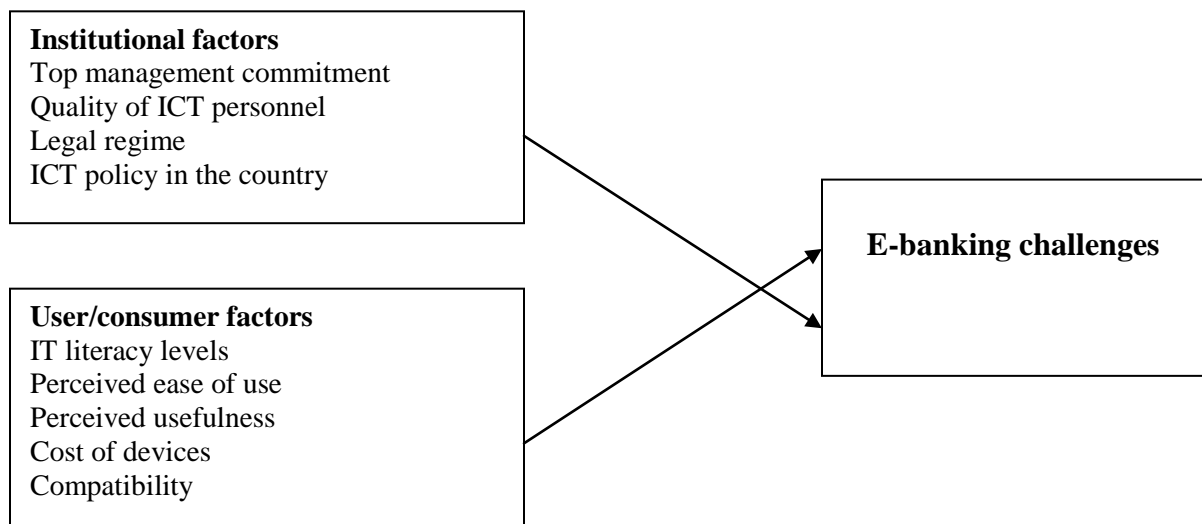
The Task-Technology Fit model (Irick, 2008) links technology to performance and posits that performance will be increased when a given technology provides features and support that correspond with the requirements of the task. Thus for banks, they will adopt e-banking technologies if it helps deliver better services to customers.

Technology Acceptance Model (Davis, 1989) however stands out as the most effective theory underpinning technology adoption by customers. It was developed to explain and predict computer-usage behaviour and has its theoretical foundation in the Theory of Reasoned Action by Ajzen and Fishbein (1980). The TAM (Davis, 1989) posits that the adoption of any technology is influenced by two related factors of perceived usefulness and perceived ease of use. The TAM thus examines the manner in which factors such as system characteristics ensure user friendliness of the technology. Here, the user utilizes information in a systematic way in order to decide whether or not to use the technology in question (Al-Hajri, 2008). In addition, it also postulates that users will adopt the technology if they find it useful.

TAM has been described as well-established and robust (Yuttapong *et al.*, 2009). According to Yuttapong *et al.*, (2009), the model consistently explained a significant proportion of the differences between usage intentions and actual behavior.

**CONCEPTUAL FRAMEWORK**

We conceptualize the factors affecting the marketing of e-banking services into institutional (bank) factors and user (customer) based factors. For this reason, the conceptual framework proposed for this study is a combination of both institutional and consumer factors. Figure 1 illustrates the conceptualization of the challenges of e-banking adoption in a developing country.



**Fig. 1: Proposed conceptual model.**

**INSTITUTIONAL FACTORS**

Though e-banking is ultimately used by retail customers, the institutions that implement e-banking strategies have a role to play in ensuring their final success. In this study, we

propose that the commitment from top management, the ability of the banks to raise the required IT personnel, the legal environment as well as the ICT policy prevailing in the country could impede or enhance the marketing and adoption of e-banking services. In the subsequent sections, these institutional factors are discussed.

### ***Top management commitment***

In order for e-banking to be successful in any institution, top management must be committed to this course both in word and in conduct. Turban *et al.*, (2000) posit that it is important that management be involved in the financing and participate in the day to day running of the e-banking project. Management may commit resources to information systems for various reasons including cost cutting, new revenue potential, improved competitiveness and quality of products and services. Among the various reasons, cost effectiveness stands out as the most significant factor influencing management adoption of electronic banking services (Bughin, 2001; Sayar and Wolfe, 2007). On the other hand, most organizations exhibit varying degrees of resistance to change leading to low levels of commitment among top management and employees (Sayar and Wolfe, 2007). Harris and Spence (2002), exploring the ethics of business-to-business e-commerce, posited that banks need to be actively involved in the development of internet infrastructure. They argued that internet technology for instance, must be matched with very strong software and networking systems, customer-value-perception-based strategies, benchmarking and sufficient training for staff. In order to overcome these challenges, banks need to employ additional strategies over and above routine technical solutions to doing business in cyberspace. Bovey and Hede (2001) suggest that management of banks must employ a balanced approach to e-banking, incorporating technical aspects as well as working with the human factor associated with the venture in order to carry it out smoothly.

### ***Qualification of information technology personnel***

Shah and Siddiqui (2006) found in their study on e-banking at the Woolwich bank in UK, that the availability of highly skilled human resources is critical in deploying e-banking projects. The greatest challenge facing developing countries is the development of the human capital needed to operate a modern economy and society effectively. Exploiting the human potential of both men and women is a major means to meeting the developmental needs of organizations and countries. It will also enhance their competitiveness in the global economy (Milek *et al.*, 2011). In the study by Shah and Siddiqui (2006), it was identified that in the implementation of internet and electronic device projects, the shortage of readily skilled human resources can be a severe handicap. Alawneh and Hattab (2009) found among others that the lack of trained and up to date IT personnel may affect value creation in the banking sector.

### ***Legal regime***

For e-banking to be effective, there must be a legal framework to support its implementation. Security has been described as very critical for the success of e-banking (Enos, 2001; Turban *et al.*, 2000; Regan and Macaluso, 2000). Lack of security and trust is perhaps the biggest obstacle to the growth of e-commerce in developing countries. Riyadh *et al.*, (2009) indicate that it is critical that legal support be made available for safeguarding customers. They add that another concern for customers is who bears the risk of financial loss as and when it occurs. Most banks pass on the risk to customers and this serves as a disincentive to adopt e-banking. They posit that in developing countries, the regulatory environment is more important than in developed

countries when it comes to the adoption of innovation.

### **General ICT policy in the country**

The prevailing Information Technology policy in the country in question must be favourable towards the adoption of innovative e-banking services. Nations have priorities which determine the national development agenda. In most developing countries, attention has always been focused on shelter, health, and education. The importance of ICT as a development tool has often been misplaced (Milek *et al.*, 2011). In order to address this pitfall, Ghana instituted The Ghana ICT for Accelerated Development (ICT4AD) policy in June 2003. This policy aimed at transforming the country into an information-rich knowledge-based society through the development, deployment and exploitation of ICTs within the economy (ICT4AD, 2003). However the policy faces a number of key challenges including the lack of finance, limited human resource capacity characterized by low professional, technical and managerial manpower base. As a result, ICT usage in most developing countries lag behind the developed world. For instance, in Africa, internet use penetration has been less than desirable. The International Telecommunication Union (ITU) projected that by the end of 2010, internet user penetration in Africa will reach 9.6%. This is relatively very low when compared with the world average of 30% and the developing country average of 21%. This means that generally, in Africa, very few people are familiar with the use of the internet. According to the ITU (2010), while in developed countries, 71% have a computer and 65.6% have internet access, in their developing country counterparts, only 22.5% have a computer and 15.8% have internet access. In addition, broadband subscriptions are no better in developing countries; they are at a mere 4.4% as compared with 24.6% in developed countries. Specifically, in Ghana, as at June 2010, internet users represented a paltry 5.3% of the estimated population of 24.3 million (ITU, 2010).

### **USER FACTORS**

The success of electronic banking is determined not only by banks, but also by customers' acceptance of the service (Hosein, 2010). Despite the numerous advantages of e-banking for retail bank customers, adoption rates are invariably low. Sayar and Wolfe (2007) noted that with the exception of retail bank customers in Scandinavia, not many customers desire to use e-banking services. That notwithstanding, banks must understand factors that influence the consumers' adoption of e-banking services in order to formulate strategies to increase patronage (Cheng *et al.*, 2006). A number of factors can be identified, some of which have been elaborated below.

### **ICT literacy levels**

Literacy levels of customers affect their willingness and ability to adopt e-banking services. It plays a major role with regard to their attitude toward technology use. Customers with higher education such as university graduates are more comfortable in using technology, like the internet and other forms of e-banking. A reason for this is that education is often positively correlated with an individual's level of IT literacy (Burke, 2002; Al-Somali *et al.*, 2010). Limited knowledge of internet banking services and their benefits however, have been identified as a significant obstacle to the adoption of e-banking, especially in developing countries like Ghana (Hosein, 2010). In an attempt to make internet services more user-friendly to customers with lower levels of formal education, companies like Google has come up with localized versions of their online

services.

### **Perceived ease of use**

Several researchers including Pikkarainen *et al.*, (2004) and Hosein (2010) concur on the definition of perceived ease of use as the extent to which a person accepts that using a certain method would be free of effort and at no cost to him or her. Ramayah and Lo (2007) affirmed it as a term that represents the degree to which an innovation is perceived as easy to understand, learn or operate. AC Nielsen Consult (2002) noted that the drivers of growth in electronic banking are determined by the perceived ease of use, thereby making perceived ease of use a major factor affecting the acceptance of any information system. Moon and Kim (2000) buttressed this point when they revealed that ease of use and usefulness are believed to be essential in determining the acceptance and the use of a number of corporate information technology. Determinants of ease of use have been noted to be closely associated with individual perceptions of complexity and, design of e-banking technology such as aesthetics and the ability of the component parts of a system to operate successfully together (Lichtenstein and Williamson, 2006). In a number of instances, complexity and design issues were found to have discouraged consumers from pursuing internet banking prompting Pikkarainen *et al.*, (2004) to argue that any novelty perceived to be easier to use than another is more likely to be accepted by users. Thus how Ghanaian customers perceive the ease with which e-banking products are used could impact on their acceptance of e-banking as alternative delivery channels.

### **Perceived usefulness**

Perceived usefulness has long been found to have a significant influence on attitude and intention to use or adopt an innovation (Yuttapong *et al.*, 2009; Sheikhshoaei and Oloumi, 2011; Zhou, 2011). It is the extent to which a user believes that a particular system would improve their performance (Hosein, 2010). Under the TAM, perceived usefulness has been found to significantly affect the acceptance of an information system (Pikkarainen *et al.*, 2004). Zahid *et al.*, (2010) observed that people who adopt a particular technology presume that the use of the technology and information system in question would enhance their performance. They hence asserted that perceived usefulness was a very strong determinant of a customer's decision to adopt e-banking. In a study conducted in Singapore, Liao and Cheung (2002) sought to measure consumer attitudes towards the usefulness of and willingness to use internet retail banking and found that expectations of accuracy, security, network speed, user involvement, convenience and user friendliness were the major quality attributes underlying perceived usefulness. Similarly, using the TAM model, Al-Somali *et al.*, (2004) also found that security, quality of Internet connection and awareness about Internet banking and its benefits have significant effects on the perceived usefulness and perceived ease of use in Internet banking acceptance.

### **Cost of ICT devices**

The cost of electronic devices affects the willingness and ability of customers to adopt e-banking services; especially those in developing countries like Ghana. Gerrard *et al.*, (2006), found that a number of consumers expressed concern about having to buy a personal computer along with its accessories in order to become an internet banking user. The consumers were of the opinion that such a capital outlay was largely uncalled-for.

In most countries in sub Saharan Africa, minimum wages are often very low and is used mostly on necessities such as food, clothing and shelter (Ghana Business News, 2011). However, the cost of IT devices is still very high. From personal computers to internet based services, the cost in developing countries such as Ghana is perhaps way above the pockets of many citizens. Factors such as this, according to Gerrard *et al.*, (2006) are most likely to differentiate electronic banking users from bank customers who will continue sourcing their banking services in traditional banking halls.

### **Compatibility**

Tat *et al.*, (2007) posit that compatibility shows the extent to which the use of an innovation is perceived by the individual as consistent with their user values, socio-cultural beliefs as well as past and present experiences. In Tornatzky and Klein (1982)'s meta-analysis of innovation adoption, they found that an innovation is more likely to be adopted when it is compatible with individuals' job responsibilities and value systems. Electronic banking has been viewed as a delivery channel that is compatible with the profile of the modern day banking customer, who is likely to be computer-literate and familiar with the Internet (*Straits Times*, 14 September 1997). In a study conducted by Tan and Teo (2000), the perceived compatibility of an innovation was found to have a positive influence on the adoption of the said innovation. In other words, customers will only adopt e-banking innovations that in their view are compatible with their values about living and working. Hence an innovation is more likely to be adopted when it is compatible with the job responsibilities, values and systems of the user. The study therefore posit that Ghanaian customers who find electronic banking to be consistent with their values will adopt it.

## **METHODOLOGY**

Both qualitative and quantitative approaches were applied to investigate the challenges of marketing e-banking services in Ghana. Goulding (2005) argues that qualitative research facilitates the ability to gain valid insights, develop theory and aid efficient decision making. It provides in-depth insights of respondents' motives, needs and values, anxieties, level of satisfaction and behaviours. A mixture of face to face interviews with e-banking managers and a survey with users were deemed appropriate for understanding the challenges of marketing e-banking services in Ghana. In the qualitative phase, interviews were conducted with e-banking managers of ten (10) banks in Ghana. The managers were conveniently selected based on their depth of knowledge about the subject and willingness and availability to participate in the interviews. All the interviews were transcribed and analysed using templates analysis (King, 2005). The aim was to understand the institutional challenges affecting the deployment of e-banking services in Ghana.

Furthermore, questionnaires were used to survey 640 e-banking customers of 13 banks who agreed to participate in the study. The questionnaire was a Likert type, based on 1 "strongly disagree" and 5 "strongly agree". The variables of the questionnaire were adopted from prior studies on e-banking (Kolodinsky *et al.*, 2004; Yuttapong *et al.*, 2009; Woldie *et al.*, 2008; Shah and Siddiqui, 2006).

The customers were conveniently selected from the data base of the thirteen banks who



were promised copies of the results of the study. The survey was conducted by five trained Teaching Assistants of the University of Ghana Business School. The data analysis from the interviews were analysed based on the themes identified in the literature review. Where possible, direct quotations from the respondents were used to spice up the discussions. The data from the survey were analysed using descriptive statistics and exploratory factor analysis.

## **RESULTS FROM THE STUDY**

### ***Institutional challenges***

Interviews were conducted with ten heads of e-banking within the Ghanaian banking industry. The objective of the interview was to explore how the top management commitment, government policy on ICT, legal regime, availability of qualified ICT personnel and ICT policy directives in the country affect e-banking adoption in their banks in Ghana.

### ***Top management commitment***

All the respondents agreed that top management played critical roles in deploying e-banking services because it has become a core issue in banking service delivery. Different opinions emerged about the role of top management in the implementation of e-banking. According to the head of IT at one bank;

*“Management of the bank decided about three years ago to deploy about 15 automated teller machines as the first phase of e-banking project. Within a short period of time, they were able to raise funds to execute this project. So from that perspective, we can say that top management is committed to the deployment of e-banking”.*

On the deployment of internet banking, one manager also had this to say,

*“We sold the idea to them and management said we should deploy it. We have deployed it even though the platform is not fully transactional”.*

The manager of a state bank also argued succinctly that top management influences not only the marketing aspect but the deployment of the solution itself. One manager in charge of Business Systems Development of a state bank who sounded skeptical about the role and commitment of top management to e-banking, also had this to say:

*“There is no doubt that top management understands that there is the need to do e-banking. However, whether the intention has been translated into concrete action on the ground is another thing. ....We are now implementing our e-banking project. It started towards the end of last year, but unfortunately, it faced some challenges so implementation has been halted for now”.*

He felt that the project had delayed because top management had failed to allocate the needed resources to buy equipment, servers and new application servers.

The finding suggests that top management will have to initiate or approve the e-banking project, provide resources for its deployment and ensure that proper systems are put in place in order that it works for the betterment of customers.

The finding confirms the work of Turban *et al.*, (2000) and Sayar and Wolf, (2007) who argued for the critical role of top management in e- banking adoption.

### **Availability of qualified ICT personnel**

Judging from the fact that ICT personnel could be a major driver of e-banking adoption, the study sought the views of the managers about the role of ICT personnel in marketing e-banking services. The consensus from the interviews is that a bank requires medium level of personnel to handle its ICT projects which were readily available within Ghana. The managers argue that the quality of the vendor personnel is more important than the quality of the banks' personnel because many of the e-banking structures are vendor-dependent. In-house ICT personnel are mostly used as liaison between the vendor of the infrastructure and the bank. They also argued that as a result of the proliferation of ICT courses, it is easy to attract personnel with the requisite qualification who could be easily trained to understand the e-banking structures of the respective banks. They also argued that attrition of ICT personnel in their banks was very low due to the high incentive packages banks design to attract and retain ICT personnel.

On the role ICT personnel play in e-banking success, the respondents also argued that ICT personnel are needed to handle the design and mostly operational issues for users. One manager had this to say:

*"ICT personnel influence e-banking services marketing because they should be able to provide quick resolution to user concerns to enable them develop confidence in the e-banking platforms.*

Even though prior studies have highlighted the critical role of the quality of in house IT personnel in e-banking adoption (Shah and Siddiqui; 2006 and Alawneh and Hattab , 2009), the current study suggests that both the vender personnel and in- house ICT personnel must play complimentary roles in ensuring e-banking success in the Ghanaian banking industry.

### **Legal regime**

Privacy and security are major concerns against ICT adoption (Turban *et al.*, 2000; Shah and Siddiqui, 2006). The study sought to investigate whether there is a strong legal environment to protect customers. The consensus from the ten respondents was that the legal regime is not strong enough to protect consumers. One General Manager, in charge of a bank from a West African country has this to say:

*"Consumer protection is non-existent and so if a consumer uses the service and there is identity theft for example, everything is pushed to the consumer".*

Probing further, one could notice that data protection and consumer privacy laws are not in existence in Ghana. With little laws for protection, banks exploit the situation to the disadvantage of the customer. To provide security, some of the banks have CCTV cameras installed at most ATM sites to protect customers. The study thus supports the view of Riyadh *et al.*, (2009) who mooted for the creation of the right legal framework to protect customers.

**IT policy regime in the country**

E-banking success rides on the shoulders of an effective national ICT policy. The study sought the views of the respondents on whether the ICT policy framework of the government is comprehensive enough to promote e-banking in Ghana. The consensus is that there is a national ICT policy but it is not comprehensive enough to promote e-banking. One manager argued that an effective ICT policy should encourage availability and use of ICT products. Another manager argues that:

*“Government has done very little about deploying network services such as internet, and mobile phone coverage to schools, villages and towns which limits the use of internet based services. A good policy could make the marketing of e-banking services much easier”.*

Another ICT manager also had this to say concerning e-banking or a general ICT policy in the country,

*“IT should be something that all of us must be able to recite..... I know Bank of Ghana is trying to set up the minimum information system standard for all banks. They are basically combination standards from all over, ISO, American Standards. If they legislate that all banks must operate with these standards, they would jump onto it and this would have solved problems with regard to minimum user security and more”.*

The finding suggests that the lack of an effective ICT policy for the country could impact negatively on the development of e-banking because it limits availability, accessibility, and use of information technology based products in the country.

**User Based Challenges**

This section reports the results of the survey conducted with 640 users of e-banking services in the Ghanaian banking industry.

**Profile of respondents**

The descriptive analysis indicates that 53.0 percent of the respondents were male while 47.0 percent were female. In terms of age, a greater part of them (66.0 percent) were above the age of 30 years reinforcing their working class age range. Furthermore, the educational background of the respondents revealed that 38.0 percent were first degree holders, 53.0 percent had post-graduate degrees while 2.0 percent and 5.0 percent had Secondary and Diploma certificates respectively. The remaining 2.0 percent had other professional qualifications. This is an indication that the respondents were all adults and well educated. With respect to the profession of the sampled respondents, 29.0 percent were students and 64.0 percent were on employment either as salaried workers or self-employed. Only 7.0 percent were not employed.

**Descriptive statistics**

Table I displays the means and standard deviations of the various variables used in the questionnaire. The results indicate moderate to high mean values. The highest means were 4.44 (ATMs make my banking life a lot easier) and 4.39 (ATMs are easy to use)

whilst the lowest was 2.50 (I prefer handling cash to e-banking). Hence evidence from Table I indicate that a large number of the respondents were of the view that using electronic banking makes life easier and faster.

**Table I – T test (descriptive statistics)**

Variables	Mean	Std. Dev.	T	Df	Sig. (2-tailed)
I am IT literate	4.31	0.775	55.647	99	.000
IT every day in my bank transactions	3.11	1.340	23.207	99	.000
I use IT in other transactions outside my normal banking transactions	3.92	1.107	35.405	99	.000
I am comfortable with using e-banking platforms	3.44	1.085	31.692	99	.000
ATMs are easy to use	4.39	0.751	58.480	99	.000
I use other e-banking services such as internet banking and SMS banking	2.62	1.309	20.020	99	.000
ATMs make my banking life a lot easier	4.44	0.857	51.834	99	.000
SMS banking has improved my banking transactions	3.22	1.160	27.764	99	.000
E-banking tools such as internet devices enhance my banking experience	3.38	1.187	28.468	99	.000
IT devices are too costly	3.41	1.190	28.656	99	.000
E-Banking transactions are too expensive	2.94	1.135	25.892	99	.000
E-banking is consistent with my cultural values, beliefs and norms	3.33	1.164	28.611	99	.000
I prefer handling cash to e-banking	2.50	1.345	18.592	99	.000
Cyber-crimes and other social vices make e-banking unattractive to use	3.47	1.185	29.294	99	.000
Lack of user protection laws make it difficult for me to use electronic banking	3.25	1.077	30.187	99	.000
E-banking enables me to utilize several banking services faster	3.44	1.209	28.460	99	.000
E-banking saves me time	3.43	1.312	26.136	99	.000
I generally have enough information about e-banking and all its benefits	3.43	1.328	25.835	99	.000
I can easily become skillful at using e-banking products	3.58	1.304	27.452	99	.000
I have easy access to IT devices	3.35	1.321	25.360	99	.000

### Exploratory Factor Analysis (EFA)

The variables measuring user based challenges were also factor analyzed. Prior to the extraction of factors, the Bartlett test of Sphericity (Approx: Chi-square= 665.183, df. 190, sig. 0.000) and the KMO measure of Sampling Adequacy (Value of .844) confirmed that there was significant correlation among the variables to warrant the application of exploratory factor analysis. Only factors whose eigen values were equal or greater than 1 were selected (Malhotra and Birks, 2007). Moreover variables with loadings of at least 0.5 (Hair *et al.*, 2006) and factors with a reliability threshold of 0.6 (Hair *et al.*, 2006) were included in the analysis.

The twenty (20) variables were factor analyzed and subsequently yielded eight factors which altogether explain satisfactorily 74.0% variance.

**Table III: Principal Component Factor Loadings**

Variables	Communality	Factor	Eigen Value	Percent of	Cumulative Percent
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				Variance	
I am IT literate	.666	1	3.094	14.904	14.904
IT every day in my bank transactions	.538	2	2.380	12.684	27.588
I use IT in other transactions outside my normal banking transactions	.544	3	1.674	9.525	37.114
I am comfortable with using e-banking platforms	.548	4	1.505	8.709	45.822
ATMs are easy to use	.758	5	1.316	7.836	53.658
I use other e-banking services such as internet banking and SMS banking	.701	6	1.221	7.590	61.248
ATMs make my banking life a lot easier	.653	7	1.092	6.422	67.670
SMS banking has improved my banking transactions	.654	8	1.040	6.339	74.009
E-banking tools such as internet devices enhance my banking experience	.753				
IT devices are too costly	.782				
E-Banking transactions are too expensive	.824				
E-banking is consistent with my cultural values, beliefs and norms	.544				
I prefer handling cash to e-banking	.746				
Cyber-crimes and other social vices make e-banking unattractive to use	.929				
Lack of user protection laws make it difficult for me to use electronic banking	.582				
E-banking enables me to utilize several banking services faster	.920				
E-banking saves me time	.700				
I generally have enough information about e-banking and all its benefits	.854				
I can easily become skillful at using e-banking products	.684				
I have easy access to IT devices	.640				

### Varimax Rotated Principal Component Loadings

Subsequently, the twenty (20) variables were rotated using the Varimax rotation as the extraction method. The results indicate that the variables loaded perfectly onto six factors. Four variables loaded highly on factor 1 and were all related to the perceived usefulness of e-banking services. The second Factor also had 3 variables which were all related to the socio-cultural factors that affect the consumer's use of electronic banking services. Factor 3 also had three variables which related to the costs involved in using IT devices. In addition, Factor 4 had 4 items related to ease of use of e-banking services. Moreover, Factor 5 related to the respondents' knowledge on ICT devices and had three items. Finally, Factor 6 had only one item. However two factors (I am comfortable with using e-banking platforms and e-banking is consistent with my cultural values, beliefs and norms) failed to load onto any of the factors and were as a result deleted.

### Re-specification and reliability of the exploratory factor analysis (EFA)

The internal reliability of the six factors was analyzed through Cronbach's coefficient alpha. Only factors that met the minimum value of 0.6 as postulated by Hair *et al.*, (2006) were accepted. Also, item-to total correlation was set above 0.3 (Parasuraman *et al.*, 1988). Factor 6 was merged with factor 1 due to conceptual fit. Hence Factor 1 now had five variables. The five Factors are named as: Perceived usefulness, Socio-cultural factors, Cost of IT devices, Ease of use and IT Knowledge. The final revised structure produced 18 variables altogether, presented in Table IV.

**Table IV: Internal consistency and final revised structure**

Factor and Items	Number of	Loadings	Cronbach's
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	items	Alpha
<b>Factor 1: Perceived Usefulness</b>	5	.719
E-banking tools such as internet devices enhance my banking experience	.823	
SMS banking has improved my banking transactions	.806	
ATMs make my banking life a lot easier	.681	
E-banking enables me to utilize several banking services faster	.937	
E-banking saves me time	.732	
<b>Factor 2: Socio-cultural factors</b>	3	.687
I prefer handling cash to e-banking	.798	
Cyber crimes and other social vices make e-banking unattractive to use	.940	
Lack of user protection laws make it difficult for me to use electronic banking	.573	
<b>Factor 3: ICT Costs</b>	3	.742
IT devices are too costly	.847	
E-banking transactions are too expensive	.859	
I have easy access to IT devices	.885	
<b>Factor 4: Ease of use</b>	4	.681
ATMs are easy to use	.855	
I use other e-banking services such as internet banking and SMS banking	.786	
I generally have enough information about e-banking and all its benefits	.930	
I can easily become skillful at using e-banking products	.588	
<b>Factor 5: IT Knowledge</b>	3	.673
I use IT every day in my bank transactions	.664	
I am IT literate	.683	
I use IT in other transactions outside my normal banking transactions	.522	

Pearson product-moment correlation analysis of the factors indicated that the factors are well correlated. The result of the correlation is depicted in Table V below.

**Table V: Correlation Analysis**

Variable	Perceived usefulness	Socio-cultural factors	IT Costs	Ease of use	of IT knowledge
Perceived usefulness	1				
Socio cultural factors	0.524**	1			
IT Costs	0.062	0.127	1		
Ease of use	0.408**	0.116	0.140	1	
IT knowledge	0.186*	0.018	0.091	0.490**	1

\*\*Correlation is significant at the 0.01 level, \*Correlation is significant at the 0.05 level

## DISCUSSION OF RESULTS

The current study was conducted to determine the challenges of marketing e-banking services in the Ghanaian banking industry. The research model developed proposed that the challenges of e-banking could be grouped into institutional and user based factors. Findings from this study corroborate the fact that adoption factors could be related either to the developments within the banking institutions or the economy and factors related to the users. The study thus provides an integrated perspective for studying the challenges of marketing e-banking services. This study therefore offers an improvement over prior studies which have studied either institutional factors (Shah and

Siddiqui, 2006) or user based factors (Hosein, 2010; Khalil and Pearson, 2007; Woldie *et al.*, 2008).

On the consumer based factors, the results indicate support for a five factor structure as the critical factors for e-banking adoption in the Ghanaian banking industry.

These factors are the perceived usefulness of e-banking, socio-cultural factors, cost of ICT devices, perceived ease of use, and ICT knowledge base of the customers. The findings support the multiple factor dimensions as critical for e-banking adoption (Padachi *et al.*, 2008).

On perceived usefulness, the results indicate that consumers perceive e-banking to be very useful as e-banking enhanced the execution of their daily banking duties in addition to helping them save on cost and time. This thereby reinforces the findings of Jahangir and Begum (2008) who found that customer attitude performs a mediating role between perceived usefulness and the adaptation of e-banking services. Considering the fact that many of the respondents were salaried employees and students who had busy life styles, e-banking provides real benefits over the traditional banking hall experience.

The result also indicates that e-banking must be compatible with the socio cultural environment of the customers in order to make it acceptable and usable to them. It is a known fact that most Ghanaians prefer to handle physical cash because most transactions are effected through cash payments. Attempts at ensuring a cashless society and introduce electronic payments such as the much touted E-zwich payment platforms have achieved little success. The use of credit and debit cards in the country for payments is also at its embryonic stage. Most sales points especially at the informal levels accept strictly cash. Sometimes, even cheques are viewed with suspicion. There is a general lack of trust among Ghanaian with regard to electronic payments. Thus socio-cultural issues with regard to payments impede the adoption of e-banking innovation. This is consistent with the studies of Tat *et al.*, (2007) as well as Tan and Teo (2000) on the adoption of electronic banking services.

Findings from the study, however suggested that customers perceived e-banking services as easy to use. Respondents agreed on a number of issues relating to the ease of use of e-banking. They confirmed that they used a number of e-banking services and agreed that ATMs were easy to use. Consumers hinted at the fact that e-banking services were not difficult to understand, learn or operate. The results also showed that the consumers generally had enough information on e-banking and all its benefits and could easily become skillful at using e-banking products. This buttresses the views of Pikkarainen *et al.*, (2004) and Hosein (2010) who concur that perceived ease of use influences consumers' e-banking adoption.

Furthermore, the results of the study suggested that the cost of ICT devices and services poses a challenge to customer adoption of e-banking. Respondents identified the price of IT devices as being too costly, although they were easily accessible. They also noted that the fees charged for the various e-banking services were too expensive. Income levels in Ghana are generally low (Modern Ghana, 2011), and this is most likely to cause a number of bank customers to continue sourcing their banking services through the conventional means rather than adopting e-banking. This point has been

corroborated in a study conducted by Gerrard *et al.*, (2006).

The study also found that consumers' level of education and ICT knowledge impacts their acceptance or otherwise of e-banking services. A number of the respondents were ICT literate and used it in their everyday transactions, which shows a fair amount of ICT knowledge. This however did not come as a surprise since majority of the customers interviewed had post graduate qualifications and bachelor degrees. Kolodinsky *et al.*, (2004) buttressed this in their study conducted on the adoption of electronic banking technologies by US consumers.

On the institutional based factors, the study also found that top management, quality of ICT personnel, the ICT policy framework of the country and the ICT legal framework for the country could impact on the marketing of e-banking products in Ghana. While some of these factors such as top management commitment and quality of ICT personnel relate directly to the efforts of banks, others can be traced directly to the door steps of the government which must enact the right policies to ensure ICT development receives national priority.

## **CONCLUSION**

Theoretically, the study has demonstrated that user-based factors and provider based factors could be integrated to form a comprehensive conceptual framework for investigating e-banking adoption in the retail banking sector. This is an improvement over prior studies which have focused solely on provider or user challenges.

The findings from this study also have important implications for managers within the banking industry in Ghana. Managers, in promoting their e-banking services should concentrate on increasing the overall awareness of the service among customers. Government and corporate policies are key factors in the development of efficient e-banking platforms to facilitate customer satisfaction. Based on the outcome of this study, it is evident that the average consumers will continue to weigh the benefits of e-banking services against issues related to trust, security and privacy, the desire to handle physical cash as well as the ability to access personal services directly from their bank. No e-banking laws exist in areas such as cyber crime, security and user privacy. Government must therefore pass laws on issues concerning ICT and its administration in order to protect Ghanaian consumers. Moreover, government must lower tariffs on ICT products such as computers to make them affordable to customers.

On the banks, there must be enough ICT professionals, well trained, who will manage the e-banking system in order to ensure its smooth running on a continuous basis (Shah and Siddiqui, 2006). Similarly, the banks must also highlight corporate policies related to e-banking services in their marketing communication messages in order to assure their customers that they are protected while using any form of e-banking services.

Furthermore, banks need to increase the confidence of their customers as well as develop their skills and knowledge in using e-banking services. Managers could employ the use of video presentations at bank branches and on television to showcase the user-friendliness of such services. This will help customers to be more familiar with the e-banking services. Ideally, e-banking services should come at a very low cost; however



some transactions would still require certain administrative charges. Hence banks offering e-banking services should look for opportunities to lower the charges on the service and transfer the cost savings to customers. Banks, in their promotional efforts should also emphasize the lower charges for online transactions as one of the key benefits of the service. Already Barclays Bank Ghana Limited has waived all ATM transactional charges since the middle of 2011. Other banks should also respond to this demand and make e-banking services more affordable to customers.

### **LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH**

A major limitation of the study is that it is based entirely on Ghana which might have, to some extent, impacted the results. Therefore, future studies must be conducted in similar socio-cultural contexts to validate the results of this study. Moreover, this study was conducted within the banking industry and the results may have little utility outside the banking sector. Researchers in subsequent studies must examine the challenges facing the electronic service platform within other sectors of the economy such as the insurance, tourism and online retail industry.

Even though the current study utilized a number of institutional and consumer based variables to examine e-banking adoption challenges in the Ghanaian retail banking industry, the list is not exhaustive. Other researchers have confirmed the importance of gender, convenience, accessibility, organizational flexibility, financial resource availability and brand name (Hosein, 2010; Shah and Siddiqui, 2006) on e-banking adoption. Researchers must consequently explore the effects of these other variables on the marketing of e-banking services. Furthermore, only 13 of the 28 banks in Ghana as at the time of the study were interviewed and surveyed. Future studies must involve more banks and respondents.

## REFERENCES

- Abor, J. (2004). Technological innovations and banking in Ghana: An evaluation of customers' perceptions, *American Academy of Financial Management*, 1, 1-16. [Online] Available: <http://www.financialcertified.com/armstrong.html> (June 6, 2011)
- AC Nielsen Consult (2002). China online banking study. Available at: <http://estore.chinaonline.com/chinonlbanstu.html>.
- Ainin, S., Lim, C.H. & Wee, A. (2005). Prospects and challenges of e-banking in Malaysia, *The Electronic Journal of Information Systems in Developing Countries*, 22 (1), 1-11.
- Ajzen, I. and Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*, Prentice-Hall, Englewood Cliffs, NJ.
- Alawneh, A. & Hattab, E. (2009). An empirical study of sources affecting e-Business value creation in Jordanian banking services sector, *International Arab Journal of e-Technology*, 1 (2), 1-8.
- Al-Hajri, S. (2008). The adoption of e-Banking: The case of Omani Banks, *International Review of Business Research Papers*, 4 (5), 120-128.
- Al-Somali, S. A., Gholami, R. & Clegg, B. (2004), Internet banking acceptance in the context of developing countries: An extension of the Technology Acceptance Model, *Operations and Information Management Group, Aston Business School, Birmingham B47ET, UK*
- Al-Somali, S., Gholami, R. & Clegg, B. (2010). An investigation into the adoption of electronic business in Saudi Arabia using the technology-organisation-environment framework, *UK Academy for Information Systems Conference proceedings*, paper 6.
- Bovey, W.H. & Hede, A. (2001). Resistance to organizational change: The role of defense mechanisms, *Journal of Managerial Psychology*, 16 (7), 534-548
- Bughin, J. (2001), E-Push or e-Pull? laggards and first movers in European online banking, *Journal of Computer Mediated Communication*, 7 (1), 1-19
- Burke, R.R. (2002). Technology and the customer interface: what consumers want in the physical and virtual store?, *Journal of the Academy of Marketing Science*, 30 (4), 411- 432.
- Cheng, T. C. E., Lam, D.Y.C & Yeung, A.C.L. (2006). Adoption of internet banking: An empirical study in Hong Kong *Decision Support Systems*, 42 (3), 1558-1572.
- Davis, F.D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology, *MIS Quarterly*, 13 (3), 319-339.
- Dishaw, M. T. and Strong, D. M. (1999). Extending the technology acceptance model with task-technology fit constructs, *Information and Management*, 36 (1), 9-21.
- Enos, L. (2001), Report: Critical errors in online banking, *E-Commerce Times*. <http://www.ecommercetimes.com/story/8867.html>
- Eriksson, K., Kerem, K. & Nilsson, D. (2005). Customer acceptance of internet banking in Estonia, *International Journal of Bank Marketing*, 23 (2), 200-216.
- Gerrard P., Cunningham, B. & Devlin, J.F. (2006). Why consumers are not using internet banking: a qualitative study, *Journal of Services Marketing*, 20 (3), 160-168.
- Ghana Banking Survey (2011). Sustaining growth: challenges and opportunities, *PricewaterHouseCoopers and Association of Bankers in Ghana*.
- GhanaBusinessNews.com (2011), *Minimum wage up by 20%*. Available at: <http://www.ghanabusinessnews.com/2011/02/15/minimum-wage-up-by-20/>
- Goulding, C. (2005). Grounded theory, ethnography and phenomenology: a comparative analysis of three qualitative strategies for marketing research, *European Journal of Marketing*, 39 (3/4), 294-308.

- Hair, J.F., Anderson, R. E. Tatham, R. L. & Black, W. C. (2006), *Multivariate data analysis*, (5<sup>th</sup> ed.), Upper Saddle River, NJ Prentice Hall International.
- Harris, L. & Spence, L.J. (2002). The ethics of banking, *Journal of Electronic Commerce Research*, 3 (2) 1-59.
- Hosein, N.Z. (2010). *Internet banking: Understanding Consumer Adoption Rates Among Community Banks*, Shantou University, Shantou, China.
- Ibrahim, E.E., Joseph, M. & Ibeh, K.I.N. (2006). Customers' perception of electronic service delivery in the UK retail banking sector, *International Journal of Bank Marketing*, 24 (7), 4475-493.
- Zahid, N., Mujtaba, A. & Riaz, A. (2010). Consumer acceptance of online banking, *European Journal of Economics, Finance and Administrative Sciences*, No. 27.
- Irick, M. L., (2008) Task-Technology Fit and Information Systems Effectiveness, *Journal of Knowledge Management Practice*, (9)3 <http://www.tlinc.com/articl165.htm> (retrieved March 2010)
- ITU (2010). The World in 2010 – ICT Facts and Figures, *Working Papers, Market Information and Statistics Division, Telecommunication Development Bureau, International Telecommunication Union ITU*, pp. 1 – 8.
- Jahangir, N. & Begum, N. (2008). The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking, *African Journal of Business Management*, 2(1), 32-40.
- Keh, H.T., Nguyen, T.T.M., & Ng, H.P. (2007). The effects of entrepreneurial orientation and marketing information on the performance of SMEs. *Journal of Business Venturing*, 22 (4) 592-611.
- Khalil, M. N. & Pearson, J. M. (2007). The influence of trust on internet banking acceptance, *Journal of Internet Banking and Commerce*, 12 (2), 1-9.
- Khan, A.R. and Karim, M. (2010). E-Banking and extended risks: How to deal with the challenge, *Paper Presented to the Department of Finance and Banking*, Rajshahi University, pp.17.
- King, N. (2005). In Symon, G. and Cassell, C. (Eds), *Qualitative Methods and Analysis of Organisational Research*, Sage, London, pp. 118-34.
- Kolodinsky, J.M., Hogarth J.M. & Hilgert M.A. (2004). The adoption of electronic banking services by US consumers, *International Journal of Bank Marketing*, 22 (4), 238-259.
- Liao, Z. & Cheung, M.T. (2002). Internet-based e-banking and consumer attitudes: an empirical study, *Journal of Information and Management*, 39 (4), 283 – 295.
- Lichtenstein, S. & Williamson, K. (2006). Understanding consumer adoption of Internet banking: an interpretive study in the Australian banking context, *Journal of Electronic Commerce Research*, 7(2), 50-66.
- Malhotra, N.K. & Birks, D.F.K (2007). *Marketing Research, an Applied Approach*, Prentice Hall, UK.
- Milek A., Stork C. & Gillwald A. (2011). Engendering communication: a perspective on ICT access and usage in Africa, *Info*, 13(3), 125-141.
- Moon, J. & Kim, Y. (2000). Extending the TAM for a World-Wide-Web Context, *Journal of Information and Management*, 38 (4), 217-230.
- Nunnally, J. (1978). *Psychometric theory* (2<sup>nd</sup> ed.), New York, NY.

- 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.
- Parasuraman, A., Zeithaml, V.A. & Berry, L.L. (1988). SERVQUAL; a multiple-item scale for measuring consumer perception of service quality, *Journal of Retailing*, 64 (1), 12-40.
- Pearce, J.A. & Robinson, R.B. (2009). *Strategic Management – Formulation, Implementation, and Control* (11<sup>th</sup> ed.), McGraw-Hill International Edition.
- Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnala, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model, *Internet Research*, 14 (3), 224–235.
- 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.
- Ramayah T. & Lo M. (2007). Impact of shared beliefs on “perceived usefulness” and “ease of use” in the implementation of an enterprise resource planning system, *Management Research News*, 30 (6), 420-431.
- Regan, K. & Macaluso, N. (2000). Report: Consumers cool to net banking, *e-Commerce Times*, October 3, 2000. Available at: <http://www.ecommercetimes.com/news/articles2000/001003-4.shtml>.
- Riyadh, A., 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.
- 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.
- Sayar, C. & Wolfe, S. (2007). Internet banking market performance: Turkey versus the UK, *International Journal of Bank Marketing*, 25 (3), 122-141.
- Shah, M.H. & Siddiqui, F.A., (2006). Organisational success factors in adoption of e-banking at the Woolwich bank, *International Journal of Information Management*, 26 (6), 442-456.
- Sheikhshoaei, F. and Oloumi, V. (2011). Applying the technology acceptance model to Iranian engineering faculty libraries, *The Electronic Library*, 29 (11), 367-378.
- Singh, B. & Malhotra, P. (2004). Adoption of internet banking: an empirical investigation of Indian banking sector, *Journal of Internet Banking and Commerce*, 9 (2).
- Straits Times (1997). *Cyberbanking Will Open New Windows*, p.5.
- Tan, M. & Teo, T. S. H. (2000), Factors influencing the adoption of Internet banking, *Journal of the Association for Information Systems*, 1(5), 1-42.
- The Ghana ICT for Accelerated Development (ICT4AD) policy (2003). Available at: [http://img.modernghana.com/images/content/report\\_content/ICTAD.pdf](http://img.modernghana.com/images/content/report_content/ICTAD.pdf)
- Tornatzky, L. G. & Klein, K. J. (1982). Innovation characteristics and innovation adoption-implementation: a meta-analysis of findings, *IEEE Transactions on Engineering Management*, 29 (1), 28-45.
- Turban, E., Lee, J., King, D. & Chung, H.M. (2000). *Electronic Commerce: A managerial Perspective*, Prentice Hall International Inc.
- Woldie, A., Hinson, R., Iddrisu, H., & Boateng, R. (2008). Internet banking: an initial look at Ghanaian bank consumer perceptions, *Banks and Bank Systems*, 3 (3), 35-46.
- Yuttapong, C., Sirion, C. & Howard, C. (2009). An investigation of the factors impacting customers' willingness to adopt internet banking in Thailand, *Proceedings of ASBBS*, 16 (1).
- Zahid, N., Mujtaba, A. & Riaz, A. (2010). Consumer acceptance of online banking, *European*

*Journal of Economics, Finance and Administrative Sciences*, 27, 44-52.

Zhou, T. (2011), An empirical examination of users' post-adoption behaviour of mobile services, *Behaviour and Information Technology*, 30 (2), 241-250.