

Adoption of Electronic Banking: Evidence from Ghana

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Abstract

This paper sought to examine the adoption of Electronic Banking products by customers as well as the perceived benefits and the barriers experienced by Ghana Commercial Bank customers. Both primary and secondary data were used in the study. The population for this study was customers of Ghana Commercial Bank. Sample size of 520 customers was selected using convenience sampling. SPSS was used for the data analysis. It was observed from the analysis that GCB has implemented E-banking products to stay in tune with its competitors for the market share and customers acceptability of the various banking products. The study shown that of all the electronic banking products, ATM was rated high on the attribute of simplicity, enjoy-ability and less difficult when it comes to its usage. In addition, ATM was the preferred choice of the respondents in relation to the security of the various e-banking products and how comfortable the products have made banking easier. Finally, it was observed that 77% rarely have problems with the services and 86% sometimes seek assistance before using the products. The study recommends that GCB should improve on the technical and functional quality of their ATM since it is the most preferred electronic banking product by customers. In order to enhance customer retention, product innovation should be carried out on GCB's, ATM.

Keywords: Banking; Electronic; Adoption

1.0 INTRODUCTION

Technology has gained rapid acceptance in this contemporary world. In every sector of the economy, technology is used in one form or the other (Alu, 2002). Electronic banking, popularly known as e-banking, represents a variety of different services that range from text messaging to confirm transaction that has taken place to automated teller machines (A.T.Ms), electronic funds transfer and other services. The introduction of electronic banking has created the situation whereby financial institutions have no option than to embrace it since it has become a prerequisite for competitiveness as an organization and leads to innovation which is required in order to be ahead of your competitors. In undertaking this research, the focus would be on the retail banking, using Ghana commercial bank as a case study.

Banking creates equilibrium in the business sector and society at large. Electronic banking now permeates every sector of the economy. The experiences that have been seen in Europe prompted this research to be carried out to see how best Ghana and Africa as a whole can embrace electronic banking that has really helped the developed countries such as United Kingdom and the United States of America. In the course of reviewing existing literature on the subject matter, it was realized that most writers put much emphasis on the need to adopt electronic banking without so much emphasis on the problems leading to its implementation. Research on electronic banking was undertaken to verify if contemporary technology has really enhanced its efficacy in terms of usage and how customers have embraced it. This research seeks to examine the types of electronic banking products and the trends in adoption by customers. It also looks at the types of customers that patronize electronic banking products and the problems and challenges faced by Ghana commercial bank in adopting electronic banking products.

2.0 LITERATURE REVIEW

2.1 ELECTRONIC BANKING IN GHANA

The banking industry in Ghana is undergoing rapid growth with the liberalization of the financial sector by the bank of Ghana. Not only has the central bank introduced universal banking but it has also introduced the Ghana interbank payment and settlement system enabling common electronic platforms for payments across financial institutions (Bank of Ghana, 2008). One of these platforms is the national switch and smartcard payments systems dubbed 'E-ZWICH'

According to the UNCTAD Report (2007 and 2008 report on information economy), internet banking has achieved a high level of penetration in developed and emerging economies but dwindling in the majority of developing countries.

Boateng (2006) notices that research on electronic banking in Sub-Sahara Africa is scanty even though the region stood in dire need for development. Even, with the proliferation of electronic banking, banking in Ghana is beset by long queues and is energy exacting and time consuming (Appiah and Agyemang, 2005). In examining electronic banking in Ghana, Boateng (2006) emphasized the need for African banks to understand customer needs, the corresponding services to offer, and the resources and partnership required to offer it.

2.2 FORMS OF ELECTRONIC BANKING

Automated Teller Machines (ATMs)

Rose (1999), describes ATMs as follows: “an ATM combines a computer terminal, record-keeping system and cash vault in one unit, permitting customers to enter the bank’s book keeping system with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank’s computerized records 24 hours a day. However, due to advancements in technology, ATMs are able to provide a wide range of services, such as making deposits, funds transfer between two or more accounts and bill payments. Banks tend to utilize this electronic banking device, as all others for competitive advantage.

Telephone Banking

According to Leow (1999), Tele-banking has numerous benefits for both customers and banks. As far as the customers are concerned, it provides increased convenience, expanded access and significant time saving. On the other hand, from the banks’ perspective, the costs of delivering telephone-based services are substantially lower than those of branch based services. It has almost all the impact on productivity of ATMs, except that it lacks the productivity generated from cash dispensing by the ATMs.

Personal Computer Banking

“PC-Banking is a service which allows the bank’s customers to access information about their accounts via a proprietary network, usually with the help of proprietary software installed on their personal computer”. The increasing awareness of the importance of computer literacy has resulted in increasing the use of personal computers. This certainly supports the growth of PC banking which virtually establishes a branch in the customers’ home or office, and offers 24-hour service, seven days a week.

Internet Banking

The idea of Internet banking according to Essinger (1999) is: “to give customers access to their bank accounts via a web site and to enable them to enact certain transactions on their account, given compliance with stringent security checks”.

Internet banking by its nature offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking. Service delivery is informational (informing customers on bank’s products, etc) and transactional (conducting retail banking services).

Branch Networking

Networking of branches is the computerization and inter-connecting of geographically scattered stand-alone bank branches, into one unified system in the form of a Wide Area Network (WAN) or Enterprise Network (EN); for the creating and sharing of consolidated customer information/records.

It offers quicker rate of inter-branch transactions as the consequence of distance and time are eliminated.

Electronic Funds Transfer at Point of Sale (EFTPoS)

An Electronic Funds Transfer at the Point of Sale is an on-line system that allows customers to transfer funds instantaneously from their bank accounts to merchant accounts when making purchases (at purchase points). A POS uses a debit card to activate an Electronic Fund Transfer Process (Chorafas, 1988).

2.3 WHY BANKS ARE ADOPTING ELECTRONIC BANKING PRODUCTS.

Wang et al (2003) posited that in the 1990s electronic banking was under utilized as business organization used it only to market their products and services, hence the need to take full advantages of the benefits of electronic banking. Thornton and White (2001) who examined customer orientations and usage of financial distribution channels in the financial industry found that more recently most financial institutions faced with competitive pressure after the introduction of deregulation in 1983 have rethought their strategies to take full advantage of internet technology. Jasimuddi (2004) also suggested that banks that fail to respond to the emergence of electronic banking in the market are likely to lose customers.

According to Cheng et al (2006), Banks are adopting electronic banking because it reduces the transaction cost of banking for both SMEs and banks. Based on existing literature this research identified that among many, three internal factors have more influence on e-banking adoption by banks.

- **Organizational Capabilities:** Organizational capabilities may take several forms including human capital, IT literacy, and slack resources. Hence, banks with more IT experience are more likely to adopt information system innovation. Technological readiness of banks is important for e-commerce adoption and it includes not only

physical assets, but also human resources, as human resources are complementary to physical asset (Mata et al.1995).

• **Perceived Benefits:** Numerous literature states that perceived benefit is a key reason for technology adoption. Benefits of e-banking include lower administrative cost, increased internal efficiency, improved relationship with business partners, improved competitiveness, improved quality of information outcome'. E-banking provides benefits to SMEs like 24/7 access to bank account, fund transfer and bill payment. E banking also widens the scope of financing from both local and global players. Therefore, we can conclude that perceived benefits are one of the main factors for e-banking adoption by small firms (Mehrtens et al. 2001).

• **Perceived Risk:** Perceived risk is the consumer's subjective expectation of suffering a loss in pursuit of a desired outcome (Wang et al., 2003).

2.3.1 WHY CONSUMERS ARE EMBRACING ELECTRONIC BANKING PRODUCTS

Rogers (1983) proposed a model of the diffusion of innovations that included five product or service characteristics postulated to influence consumer acceptance of new products and services: relative advantage, compatibility, simplicity/complexity, observability, and trial ability. Several researchers have incorporated pieces of Rogers' model in empirical work that examined technological innovations (Raju, 1980;Rogers, 1983)

Trial ability refers to the ability of consumers to experiment with a new innovation and evaluate its benefits. The extent to which various financial institutions offer "introductory" e-banking to their customers impact the trial ability and accessibility of the innovation. Empirical studies on the acceptance of technologies have found consistently positive relationships between usefulness and to a lesser extent, ease of use, and the adoption of a variety of specific technologies, ranging from computer software to e-mail (Davis, 1989).

Relative advantage is the degree to which consumers perceive a new product or service as different from and better than its substitutes. In the case of e-banking, savings of time, money and convenience have been cited as relative advantages. At the same time, financial management conducted online raises concerns of privacy. Consumers who must supply myriad personal information before being permitted to use the innovation may be inhibited from adopting given e-banking service.(Karjaluoto et al, 2002).

Observability is the extent to which an innovation is visible and communicable to consumers. For example, seeing ATMs on the street corners and in grocery stores may make this technology more observable than PC banking conducted inside the home.

Simplicity/complexity is the extent to which consumers perceive a new innovation as easy to understand or use. For consumers without previous computer experience, or for those who believe that e-banking is difficult to use, adoption of these innovations may be thwarted.

Compatibility is the extent to which a new product or service is consistent and compatible with consumers' needs, beliefs, values, experiences, and habits. In the case of e-banking, we must consider the degree to which a given technology adapts with the banking behavior of a consumer, and the way in which they have historically managed their finances. Technological service innovations differ from other commodities insofar as their adoption may require behavior different from consumers' typical routines (Gatignon and Robertson, 1985). This includes "bricks and mortar" issues such as not having a branch bank to visit, as well as "paper" issues including receiving statements electronically and not in the mail.

2.3.2 PROBLEMS FACED BY BANKS IN ADOPTING ELECTRONIC BANKING PRODUCTS

Organizational ability to utilize Web technology capabilities is one barrier to electronic banking, and may include management attitudes, resource constraints, and knowledge issues. A few studies have cited negative attitudes among some managers as a major hindrance (Farhoomand et al., 2000)

Negative attitudes cause resistance to change and lack of management commitment, reducing the company's resource allocation and motivation to use the technology. Implementing Web technology as a business channel requires some additional investment and resources, such as hardware and software. Shortages of information technology infrastructure remain a critical barrier in some cases to the continuing growth of online businesses (Chircu and Kauffman, 2000)

Finally, **technology readiness of corporate customers** plays a role in their attitudes toward technology. Parasuraman (2000) conceptualized technology readiness as a combination of positive and negative feelings/attitudes toward technology. Roughly, people's confidence of technology helps improve their lives, or simply makes things more difficult and less secure. Other research has similarly indicated that customers' attitudes and beliefs about technology are correlated with their intentions to use it.

3.0 METHODOLOGY

The study is designed to use both primary and secondary data. The primary data was gathered through a structured questionnaire. The primary data forms the core information needed to achieve the research objectives. The secondary data used in the study included existing material such as publications in journals, relevant literature on the topic, books and internet materials. The secondary data is also important to the researchers because it helps to identify concepts, perspectives, models which relate to adoption of electronic

banking in Ghana.

A convenience sampling technique was used to elect the five hundred and twenty (520) customers of GCB in Ghana. Convenience sampling technique was used because of the nature of the topic and the scattered nature of the targeted population for the study

The research used structured questionnaires and semi-structured interviews in collecting data. The questions were designed in line with the objectives of the study. This instrument gave expected information about the adoption of the various electronic banking products by customers of GCB and the challenges faced by the bank in adopting electronic banking products. The data was organized into tables and figures based on the questionnaire given to respondents. The results were then analyzed and converted into percentages and presented them in charts and tables. The result was subsequently computed into percentages. SPSS was used for the computation and subsequent analysis of the data collected from the respondents.

4.0 DATA ANALYSIS

4.1 INTRODUCTION

This chapter presents the data gathered, discusses and analyses the responses obtained from the questionnaire administered and interview conducted and thus addresses the research problems and objectives.

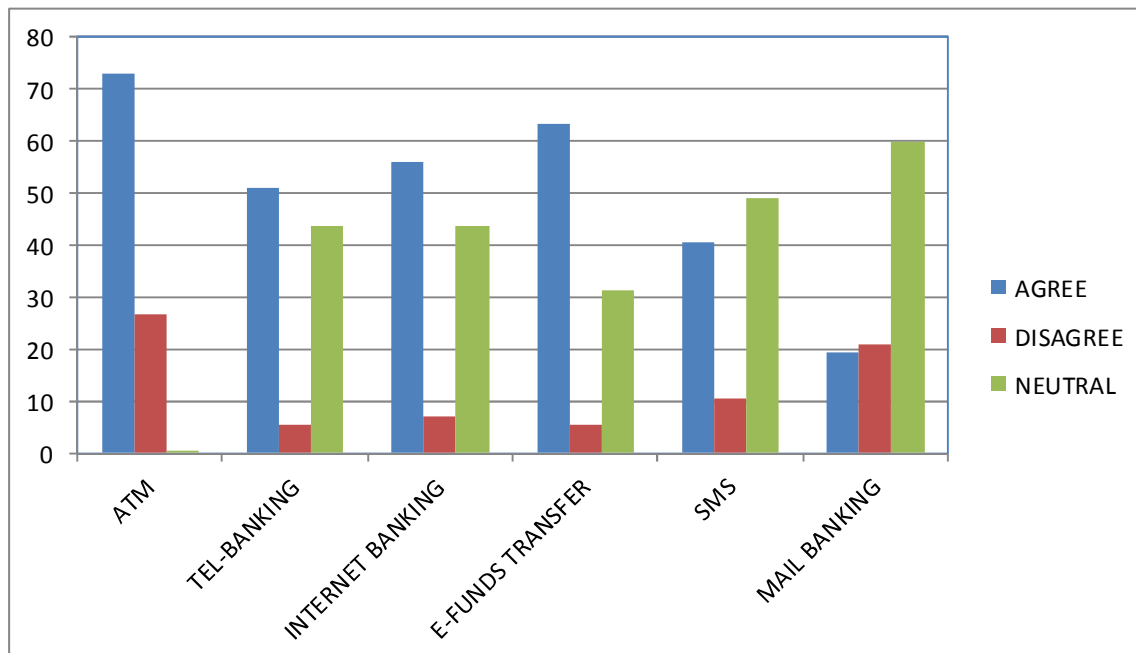
4.2 RESPONSE RATE

Out of the 520 questionnaires distributed, a total of 456 questionnaires were returned, representing a response rate of 87.7%. With the exception of very few people who left one or two questions unanswered, almost all the respondents completed all the questions on the questionnaire. Thus, the response rate can be described as very high as respondents found the questions convenient and easy to interpret. This finding reinforces the observation made by Warren and Frankel (1997) that questionnaires administered personally by the respondent generate a higher response rate, as the researcher is able to build rapport and explain the questions well to the respondents.

4.3 WHAT BENEFITS MAY BE DERIVED BY CUSTOMERS USING ELECTRONIC BANKING PRODUCTS

In assessing the benefits derived by customers in using electronic banking products, certain questions were asked by the researcher which was tailored to get the views of the benefits customers derive from using electronic banking products. Customers were asked questions on the simplicity and convenience of using the various electronic banking products in order to assess the service quality inherent in the usage of these products.

FIGURE 1 CHART SHOWING SERVICES ARE SIMPLE AND CONVENIENT.



Source: Researchers' Field Survey, 2012

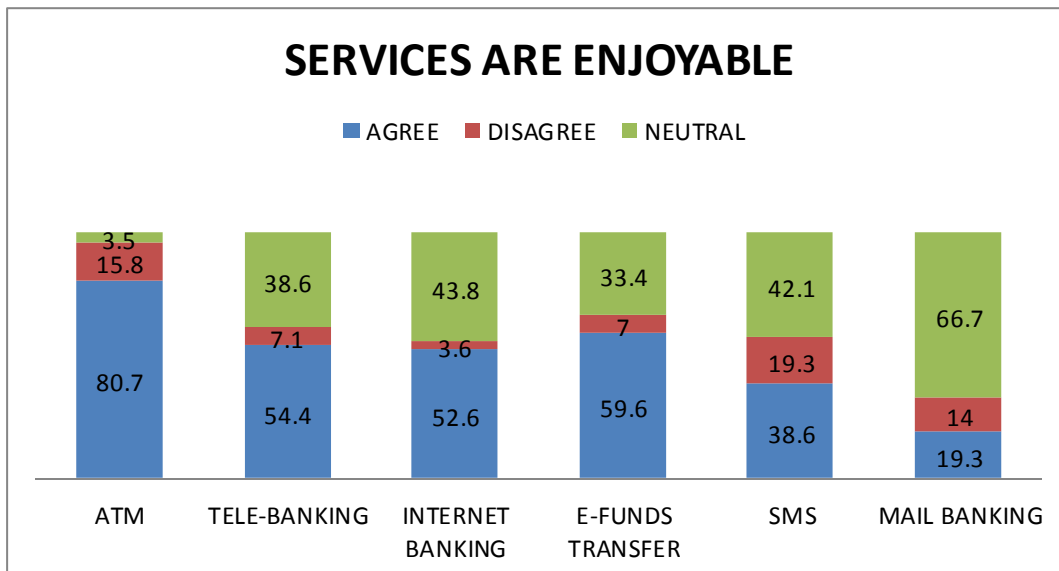
From chart Fig 1, when respondents were asked about the convenience and simplicity of the various products, 73% agree that ATM was very simple to use and 26.5% disagree that it was simple to use. However a small number of respondents stayed neutral. With regards to telephone banking product 51% agree that the service is simple and convenient while 5.4% disagree and 43.6% stayed neutral. With the internet banking

majority of respondents agree that it was convenient and simple while only 7.1% disagree and 36.8% remained neutral. 63.2% agreed that E-funds transfer is simple while 5.3% disagree, 40.4% agreed that SMS is simple while 10.4% disagree. 19.3% agreed that Mail banking is simple to use while 21.0% disagree.

According to Rogers (1983) observability, simplicity and trial ability are some of the reasons why customers like to use electronic banking products. Here because ATM is very observable and simple to use. It was rated high in terms of convenience and simplicity by customers.

In order to affirm the convenience of electronic products, customers were asked whether the electronic banking products were enjoyable.

FIGURE 2 SERVICES ARE ENJOYABLE



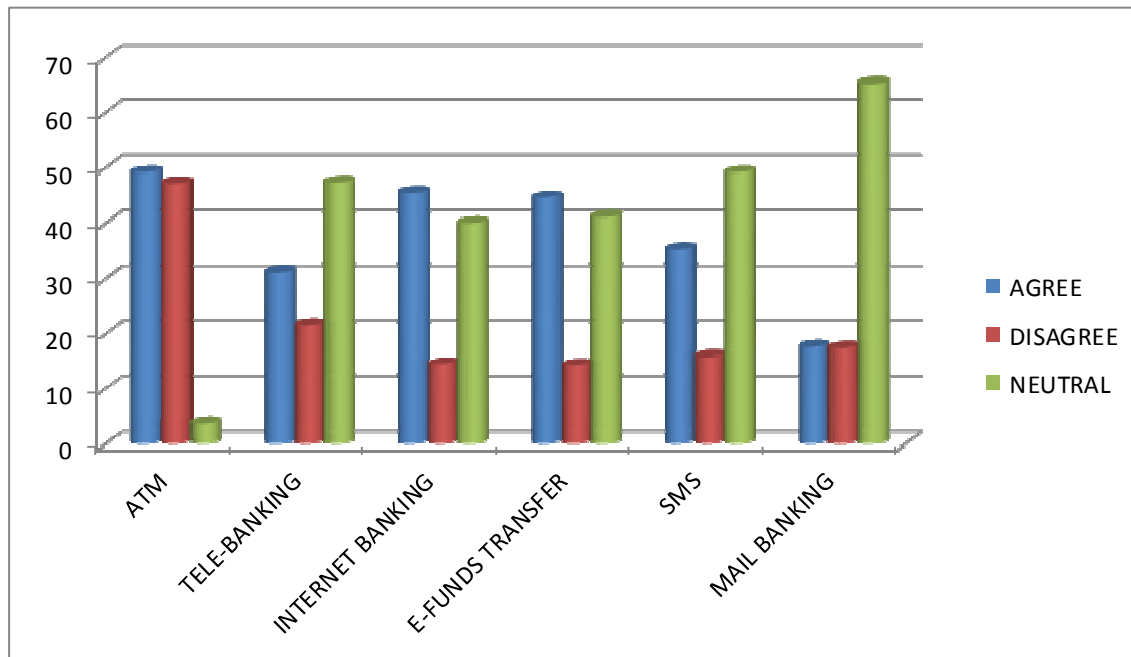
Source: Researchers' Field Work, 2012

When customers were asked about their enjoyment of the various electronic banking products, ATM was ranked as the highest with 80.7%, followed by E-funds transfer with 59.6% which was followed by Tele-banking with 54.4%, internet banking with 52.6%, SMS with 38.6% and Mail banking with 19.3% in that order. This shows that most of the customers have embraced the use of ATM which confirms that it is most simple and convenience hence reflects an enjoyable experience.

According to Karjaluoto et al (2002) consumers who must supply myriad personal information before being permitted to use the innovation may be inhibited from adopting a given e-banking products since with the internet and the other products, customer information and verification of ID's is required before given access to the accounts hence not as convenient as ATM usage. This goes to explain the theory of karjaluoto et al, (2002) who postulated that Management need to educate their customers about the other electronic banking products apart from the ATM.

Again these products should be enhanced by improving their convenience and simplicity in using the products.

FIGURE 3 NO DIFFICULTY WITH THOSE SERVICES

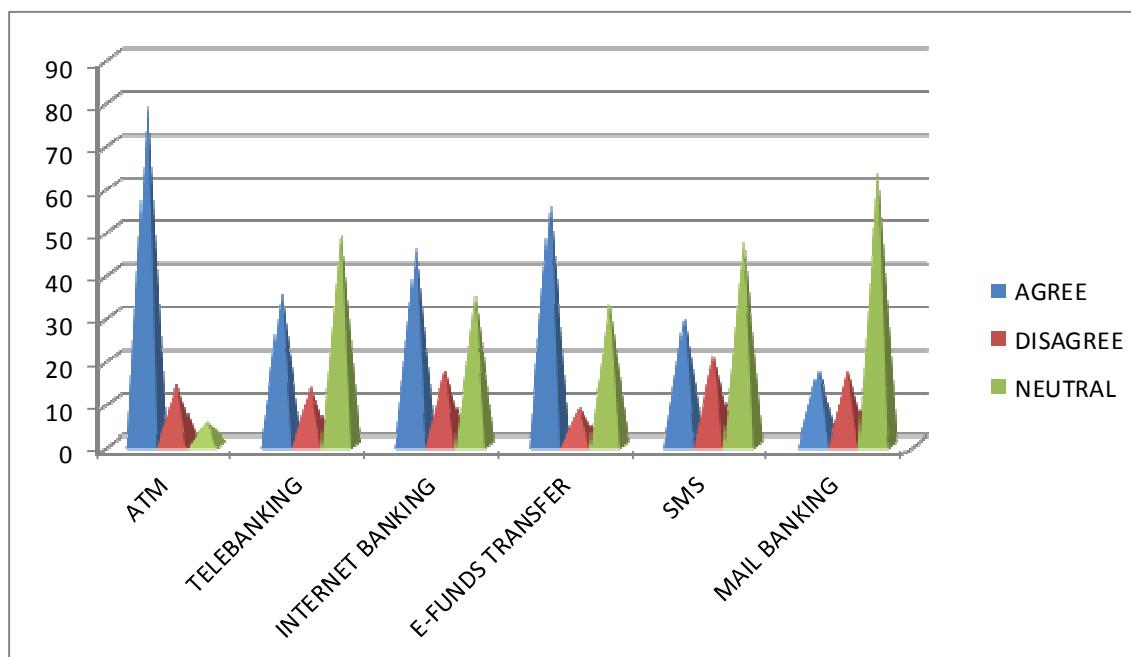


Source: Researchers' Field Work, 2012

When customers were asked about their difficulty of the service, it seems the difficulty cut across all the electronic banking products including ATM. Even though ATM was rated very enjoyable by customers, they still find it difficult to use it as there is frequent breakdown of G.C.B ATM machines. This explains why the United Nation Conference on Development and Trade (UNCTAD.2002) contended that developing countries like Ghana have some problems to overcome before they achieve the full benefits of e-banking products. Some of the suggestions they enumerated include the following:

- Ability to overcome challenges in adopting global technology
- Ability to strengthen public support for e-banking
- Create a necessary level of regulatory and institutional framework.

FIGURE 4 PROVISION OF CUSTOMER SECURITY



Source: Researchers' Field Work, 2012

In this era, where the activities of computer hackers and crackers are on the ascendency, security of an electronic product is one of the attributes desired by customers.

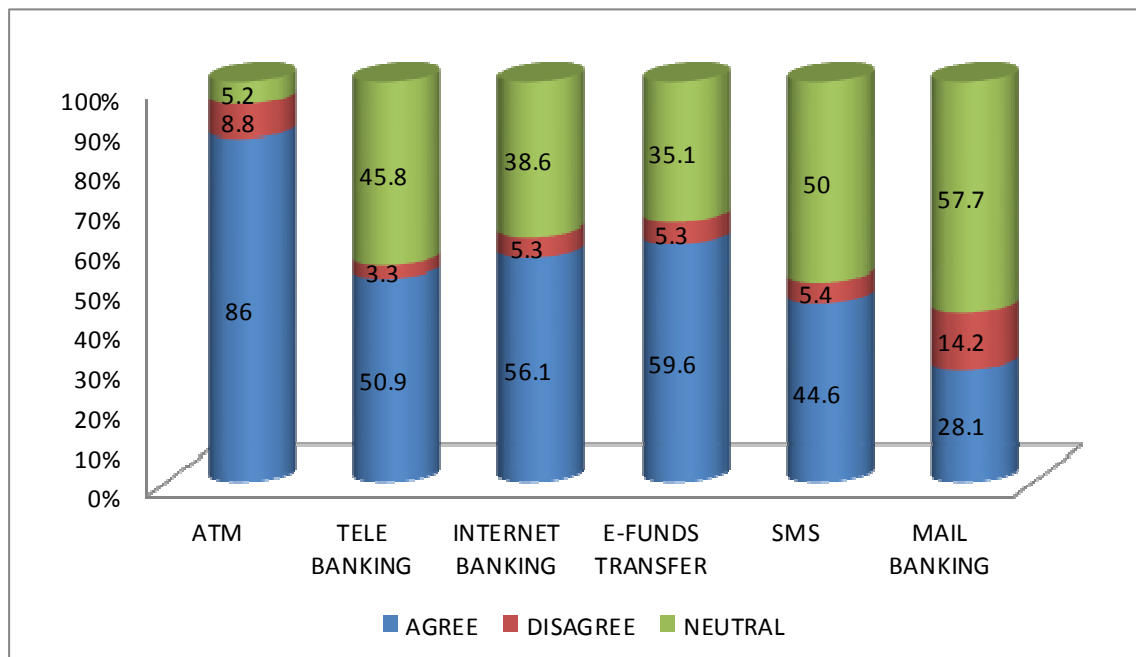
An item was introduced to illicit response on the security of banking products so as to reveal its impact on product preference.

Most respondents agree that using ATM is more secured than the rest, followed by E-funds transfer. Internet banking, Tele banking, SMS and Mail banking followed in that order. This shows why most of the customers are not comfortable using the other products apart from the ATM.

According to Sathye (2002) security reasons are the main reasons why customers are reluctant to adopt innovative products. This research is supported by Sathye's findings which show why customers are not embracing the other products apart from ATM.

When respondents were asked if e- banking products have made banking easy, these were the responses.

FIGURE 5 WHETHER E-BANKING PRODUCTS HAVE MADE BANKING COMFORTABLE

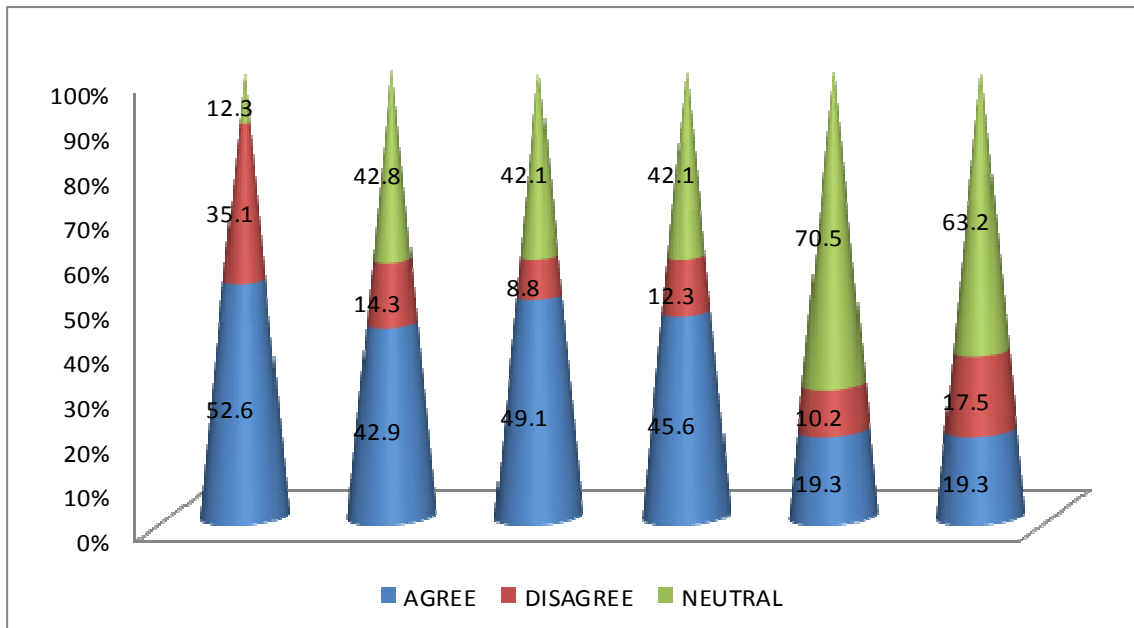


Source: Researchers' Field Work, 2012

In general, most of the respondents believed that e-banking has made banking very comfortable especially with the use of ATM, E-funds transfer and the internet banking.

Rogers (1962, Raju 1980) enumerated some variables like trial ability, observability, compatibility, simplicity as some of the reasons why customers are embracing electronic banking products but still the banks should intensify their education on the various products because apart from the ATM, patronage of the others are not encouraging and most of the people that use internet are the very few professionals whiles ATM cuts across all ages and educational background

FIGURE 6 HOW CUSTOMERS WILL RATE G.C.B



Source: Researchers Field Work, 2012

When customers were asked how they will rate G.C.B by ranking it as first among equals, Most customers of the respondents interviewed agreed that GCB is doing well in the electronic banking products but did not put GCB first because about 50% of respondents maintained that GCB is performing well across all the products, with the exception of SMS and Mail banking, which means that GCB is not encouraging SMS and Mail banking.

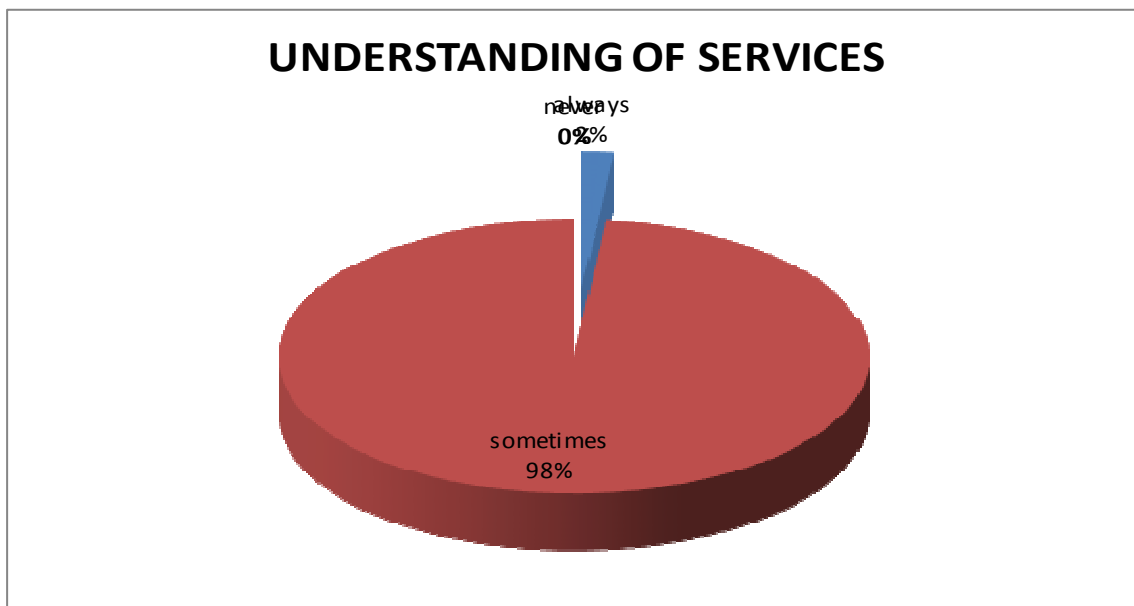
4.4 PROBLEMS AND CHALLENGES FACED BY CUSTOMERS USING E-BANKING PRODUCTS

In order to find out some of the problems customers faced in using e-banking products, the researcher asked questions pertinent to ascertain the problems they encounter in using the products. These were some of the questions asked and how they responded as to the problems customers encounter in their daily activities.

4.4.1 WHAT CUSTOMERS DO NOT UNDERSTAND ABOUT E-BANKING PRODUCTS

About 98.2% of respondents said they rarely or sometimes do not understand the e-banking products and only about 1.8% said they do not understand the product as captured in the chart below.

FIGURE 7 UNDERSTANDING OF SERVICES



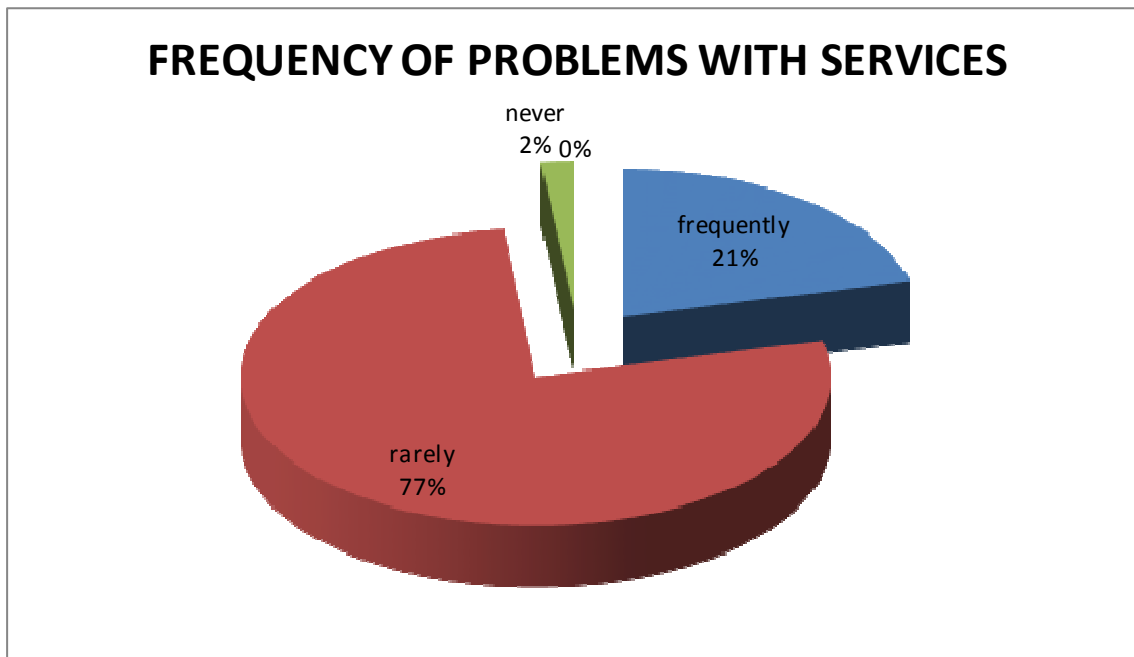
Source: Researchers' Field Work, 2012

This means that GCB customers find products to be easily understood particularly ATM and the other products, it is just that they are refusing to adopt the other electronic products and this is because they do not have enough education on the other products and simplicity is curtailed, hence do not have confidence in some of the other products like the SMS and the mail banking. Jasimuddi (2004) suggested that banks that fail to respond to the emergence of electronic banking in the market are likely to lose customers hence should fully educate its customers about the products.

4.4.2 FREQUENCY OF PROBLEMS WITH THE SERVICES

When customers were asked about the frequency of problems with the various e-banking products, about 77.2% maintained that they only encounter problems sometimes and about 21.1% stated they always encounter problems with the services while 1.8% stayed neutral. This means that the services are not difficult to use but are also refusing to embrace the other e-banking products with the exception of more people using ATM and the only few educated using internet banking and E-funds transfer. This gives credence to the notion that GCB should employ skilled people to market their products since the problem is not the services but its adoption by customers.

FIGURE 8 FREQUENCY OF PROBLEMS WITH SERVICES

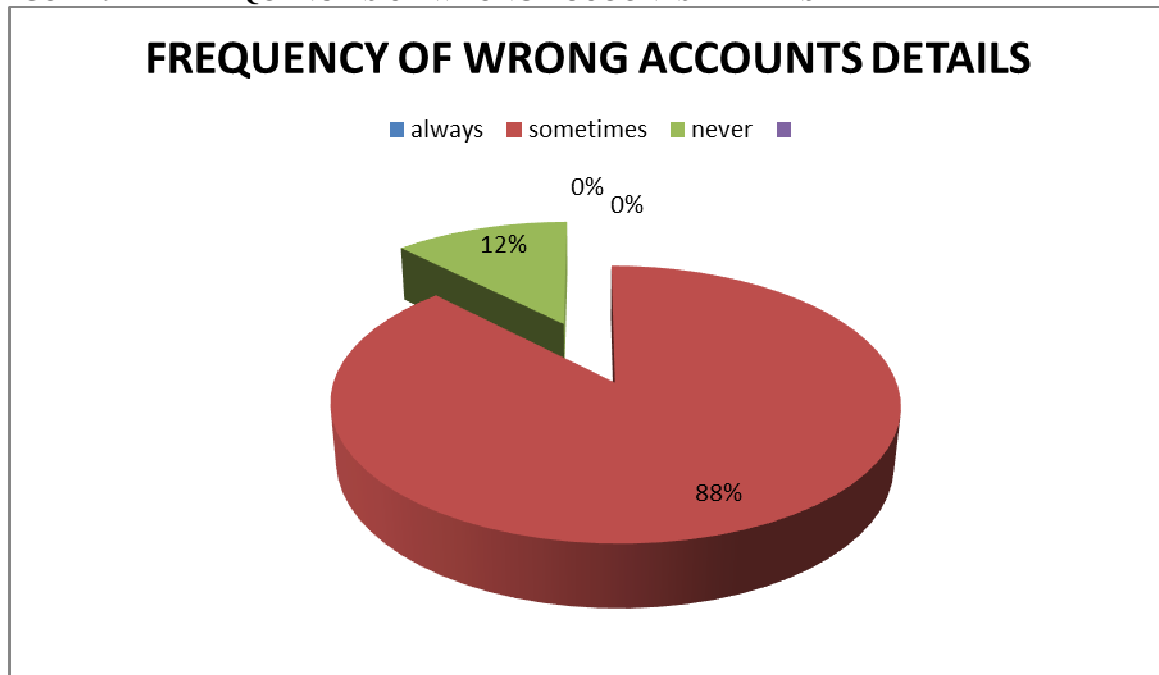


Source: Researchers Field Work, 2012

4.4.3 FREQUENCY OF SEEKING ASSISTANCE USING SERVICES

When customers were asked about the rate at which they seek assistance in using the various banking products, 86% responded they hardly seek assistance in using the various e-banking products and 8.8% responded they always seek assistance in using the various e-banking products while only around 5.3% remained neutral. This highlights that the various e-banking products are not all that very difficult to use yet still patronage of most of the e-banking products is on the low.

FIGURE 9 FREQUENCIES OF WRONG ACCOUNTS DETAILS



Source: Researchers Field Work, 2012

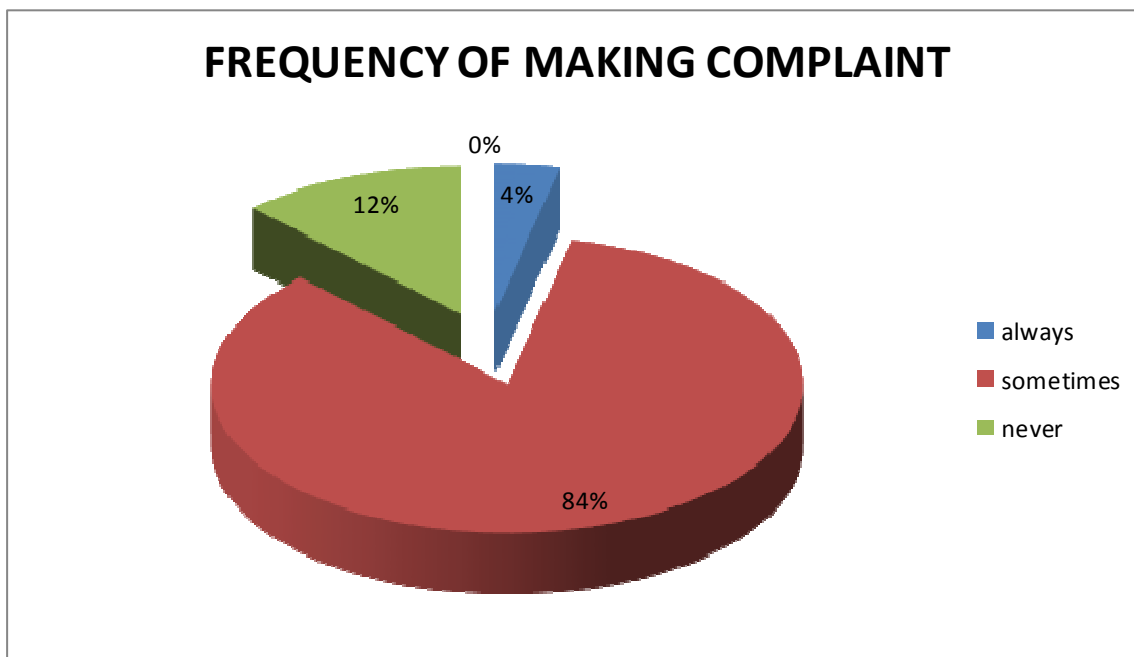
This shows that GCB customers hardly encounter discrepancies in their account details. This may be attributed to the employment of qualified skilled staff to deal with customers or as a result of using the modern technology to prevent hackers going into people's account.

According to Rotchanakitumnuai and Speece (2003) Customers hesitate to use the e-banking services if there are inadequate laws on it. Therefore legal support for e-banking for safeguarding customers is most important. This study supports the assertion why customers hardly encounter problems with accounts because banks are offering the necessary regulatory support for customers.

4.4.5 FREQUENCY OF MAKING COMPLAINTS TO THE BANK

When customers were asked about the rate at which they make complaints to the bank, around 84.3% of the respondents contented that they rarely make complaints to the bank and 12.3% responded they have never make complaints to the bank and just around 3.5 responded they make complaints to the bank

FIGURE 10 FREQUENCY OF MAKING COMPLAINT



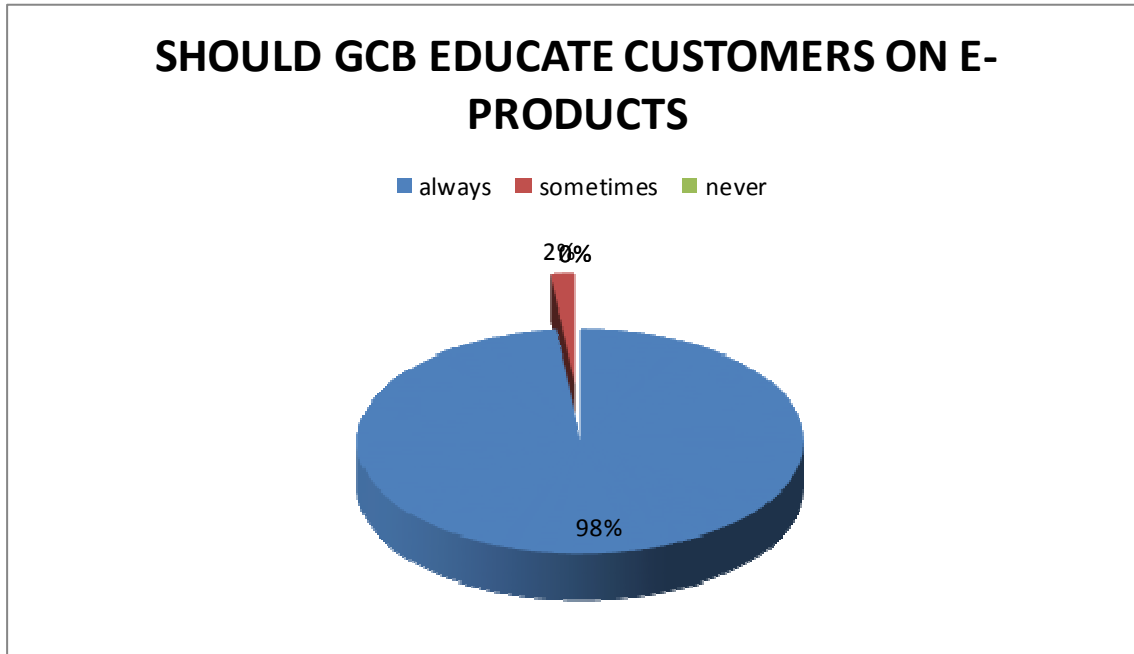
Source: Researchers Field Work, 2012

Customers of GCB sometimes make complaint about either the services or their accounts details. The frequent breakdown of the ATM may be the reason why customers sometimes make complaints to the bank.

4.4.6 SHOULD GCB EDUCATE CUSTOMERS ABOUT E-PRODUCTS

Almost all the respondents answered in the affirmative that GCB should educate customers about e banking products and none of the respondents stated that they do not like to be educated, which means that education is very necessary if electronic banking is to thrive in developing countries like Ghana.

FIGURE 11 SHOULD GCB EDUCATE CUSTOMERS ON E-PRODUCTS



Source: Researchers' Field Work, 2012

Education is the bedrock if e-banking products are to be fully embraced by customers.

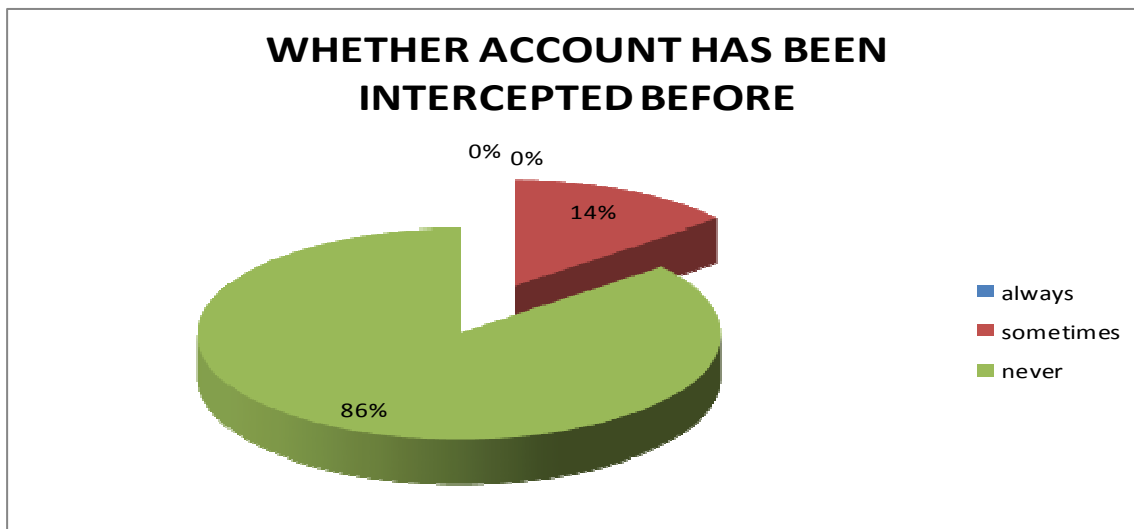
A few studies have cited negative attitudes among some managers as a major hindrance.

According to Basu et al 2002, negative attitude of customers causes resistance to change. Therefore effective education can change customers' attitude towards the other electronic banking products like the SMS and the Mail banking.

4.4.7 WHETHER CUSTOMERS' ACCOUNTS HAVE BEEN INTERCEPTED BEFORE

When customers were asked whether their accounts has been intercepted before, almost all the responded answered no, represented by 86.0% and 14.1% responded sometimes while none of them answered always. This is shown in the pie chart below

FIGURE 12 WHETHER ACCOUNT HAS BEEN INTERCEPTED BEFORE



Source: Researchers' Field Work, 2012

This shows that GCB is doing well in terms of security of customers' accounts. With the advancement in technology, customers' accounts are able to safeguard by the banks.

5.0 CONCLUSIONS

The study revealed that because of the numerous benefits associated with the adoption of E-banking products, G.C.B has adopted it in order to be competitive in the banking industry. Customers are also embracing E-banking products because of the benefits they derive from using the products. Additionally, they were of the view that it makes business much simple, convenient, and saves time.

It was observed that the penetration rate of ATM usage in the Ghanaian banking industry is very high and the other electronic banking products need customer education before customers may accept to use them. Again Technology keeps changing and advancing. Therefore innovative products should be discovered by GCB to frog leap the competition.

Through this study, it was also noted that the higher the educational level of the customer, the higher their usage of electronic banking products. Besides, it was revealed that there is no gender bias when it comes to GCB customer base. It was also observed that security of customers' accounts is assured according to the findings.

The study gave credence to the notion that SMS and Mail banking are the electronic products that have least penetrated the Ghanaian financial service market. Therefore, extensive education needs to be undertaken to revamp those products in the Ghanaian financial sector.

RECOMMENDATIONS

Based on the empirical findings of the study, the following recommendations are worth the attention of stakeholders of Ghana commercial bank in order to inform policy and to ensure the elevation of GCB to the apex of the competition.

Firstly, G.C.B should intensify its education on the various e-banking products especially SMS, Mail banking and Tele-banking since their patronage is very low. Also, with regards to Tele-banking, none of the respondents were using it due to lack of education on the product or customers do not know the benefits of using the products.

Secondly, GCB should improve on the technical and functional quality of their ATM since it is the most preferred electronic banking product by customers. In order to enhance customer retention, product innovation should be carried out on GCB's, ATM

Thirdly, Management attitude towards the implementation of E-banking products should be improved, since simple lack of skills can inhibit the smooth implementation of E-banking products and therefore its adoption by customers.

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