Assessing the Impact of the ATM in Delivering Service in the Banking Industry. A case of GCB Bank Ltd

Gabriel Asante-Gyabaah[1]*,   Eugene Ofori-Appiah Danquah[2],   Daniel Kojo Tetteh-Wayoe[1]

1. GCB Bank Ltd, Ahinsan Branch, P.O Box AH 8818, Ahinsan, Kumasi, Ghana

2. GCB Bank Ltd, Corporate Banking Division, Kumasi Zone, Kumasi, Ghana

Abstract

In Ghana, developments in information and communication technology are radically changing the way businesses are done. These developments in technology have resulted in new delivery channels for banking products and services such as Automated Teller Machines (ATMs), Telephone Banking, PC-Banking, and Electronic Funds Transfer at Point of Sale (EFTPoS). This study assesses the impact of the ATM technology in delivering service quality in the banking industry. The study focused on customers and staff of GCB Bank Ltd in ten (10) branches in Greater Accra Region. The purposive sampling technique was used in selecting 272 customers and staff from these 10 branches in the Greater Accra Region. The results of the study generally indicated that, 30% of respondents use the ATM services once a week while 26.4 % often use the ATM on alternate days and 22.8% use it once a month. A high percentage of 84.8% of respondents asserting that they watch out for the location of the ATM before going to transact means customers who go to the ATM are becoming more security conscious and banks must consider this factor in locating an ATM. Respondents also use the ATM as and when needed and since banks also must satisfy them should make the ATM available to them at all times. The three top-most challenges customers are faced with at the ATM were also identified in the study and these included," accounts being debited without dispensing" (92.4%), followed by "ATM being sited at an obscured area" (86%) and "the ATM not dispensing the denomination required" by customers ranked third with an average of 62.4%. These show that the ATM service has contributed positively to the provision of banking services in GCB Bank Ltd. and the Ghanaian Banking industry as a whole.

Keywords: E-banking, Internet banking, ATM, SMS, POS

1.0 Introduction

In recent decades, investment in IT by commercial banks has served to streamline operations, improve competitiveness, and increase the variety and quality of services provided. According to (Yasuharu, 2003), implementation of information technology and communication networking has brought revolution in the functioning of the banks and the financial institutions. It is argued that dramatic structural changes are in store for financial services industry as a result of the Internet revolution; others see a continuation of trends already under way. Arguably, the most revolutionary electronic innovation in this country and the world over has been the Automated Teller Machine (ATM) and Ghana is not an exception. Most banks currently operate ATMs in Ghana. The ATM has been the most successful delivery medium for consumer / retail banking in this country; As (Abor, 2004) puts it, the ATM is the most widely used electronic delivery channel for banks in Ghana. Customers consider the ATM as an important service and this influences their choice of banks, and banks that have delayed the implementation of their ATM systems, have suffered irreparably to this service. (Jordan and Katz, 1999) stated that the introduction of the ATM has made the distribution of banks services more efficient. ATMs have been able to entrench the "one-branch" philosophy in this country by being networked, so people do not necessarily have to go to their branch to do some banking. Before ATMs, withdrawals, inquiries, internal funds transfers, mini statement inquiry, among others, all required the face-to-face interaction between the consumer and the bank teller. Networking ATM's has therefore increased banking services to customers.

The focus of the study were to;

- To identify factors that influence the use of ATM.
- To establish customer perception of ATM location and uptimes and its effect on usage;
- To identify the challenges involved in the use and operations of the ATM; and
- To identify the extent of customer satisfaction with respect to service quality towards ATMs and the bank.

2.0 OVERVIEW OF THE BANKING INDUSTRY AND ATMs

The surfacing of technological advancement coupled with globalization had called for the implementing of ICT into business process of which financial institutions are no exception. The increase in customer base as well as increase in demand for more innovative products and services has also required the need for ICT in banking industry. In Ghana however, banking institutions have been subjected to many criticisms for not providing their customers with innovative and convenient banking services, with the results that some customers especially

businesswomen, find it more convenient keeping their savings at homes than in the banks. This call has led to the central bank to deregulate the banking sector. In the end the industry has become far opened to many players and more importantly attractive to the general populace to do more business with their respective banks. The banking industry in Ghana has seen a high level of activity in the last five years with the number of banks increasing from 18 in 2000 to 28 as at 2013. There have also been a number of new non-banks financial organizations as well as micro-finance institutions all joining the competition to offer banking services to the Ghanaian population. In an industry analysis undertaken by Price Waterhouse Coopers (PWC) Ghana, of the Banking survey in 2010 on banks in Ghana as at year end 2009, there was a growth in the banking industry with most banks in Ghana making profits. The exception has been the new entrants to the banking industry in the last three years who are working to break-even to start making profits. One of the observations made is the strong competition among players in the banking industry. The strong competition has led to all banks offering unique products and services that will allow them retain existing customers and attract more prospective customers, (PWC Ghana, 2010, Ghana Banking Survey, 2010, Accra: Ghana Association of Bankers). Technological development has therefore become one of the surest ways that players are using to differentiate their activities and products from each other. This development is more pronounced in the area of service/products delivery and communicating with clients. The Central Bank has been one of the leading proponents of technology based products in Ghana. This is essential since Ghana has been described as a high currency circulation economy where greater volumes of transactions are done with cash. For a typical economy with high cash circulation, there is a tendency of experiencing high inflation rate. It also has an adverse effect on the currency notes in circulation which are handled badly and are often mutilated. When the currency note gets mutilated, the Central Bank has to spend funds to print new notes to replace worn out ones. This is a very costly exercise and justifies the promotion and adoption of electronic banking, thereby reducing the use of cash. Also, the tastes of consumers have and continue to change vis-à-vis the need for flexible access to deposits at all times at no charge for offering such services by the universal banks. Thus, the universal banks have all shown a strong indication to meet the needs of their customers. This is amply demonstrated by the universal banks exploiting all delivering channels available to offer banking services to their customers. The main channels of banking operations in Ghana are Branch Banking, Automated Teller Machines (ATM), Point of Sale Terminal (POS), Internet Banking, and telephone banking among others. Abor (2004), states that, on the average, customers visit their branches at least three times in a month. It is estimated that branch banking handles over 60% of all transactions done by banks in Ghana as at Close of year 2009, (Ghana Banking Survey, 2009). Tomasofsky of Two Sparrows Consulting in a presentation at the Electronic Payments conference in 2009 predicted that card payments would form about 54% of all payment system for transactions by 2012. Banks in Ghana are making a lot of efforts to ensure that a lot of customers embrace the electronic products. They have demonstrated the commitment by increasing investment in the other delivery channels apart from the branch network, especially in the ATM and POS delivery channels. (Rose et al., 1998), defines ATM: "as a combined computer terminal, record-keeping system and cash vault in one unit. This permits 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". Once access is gained, the ATM offers several retail banking services to customers. They are mostly located outside of banks, and are also found at airports, malls, and places far away from the home bank of customers. The ATM was introduced first to function as cash dispensing machine, however, due to advancements in technology, it is 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 to gain competitive advantages over others. The combined services of both the automated and human tellers imply more productivity for the bank during banking hours. Also, it saves customers time in service delivery as an alternative to queuing in bank halls, customers can invest such time into other productive activities. ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human tellers. An average of about 6,400 transactions per month for ATMs compared to 4,300 for human tellers (Rose et al., 1998). Furthermore, when human tellers stop work, the ATM continues, thus, there is continual productivity for the banks even after banking hours. Therefore, per the service proposition, the ATMs are available 24hours a day and every day of the week. This explains the "24/7" mark that are often placed on the ATM signage.

2.1 CONCEPT OF THE ATM
The idea behind the ATM was to automate the duties of a bank teller which subsequently will remove the "face to face" interaction between the customer and the bank teller. In the service sector such as banks, the ATM technology is used to standardize services by way of reducing the employee/customer interaction. The ATMs are expected to provide the same service wherever the customer goes. It is also expected that the service provided by the ATM from one customer to the other will be consistent, for example, the speed of the transaction process. There are a number of services that are carried out on the ATM such as withdrawals, cash deposit, balance

enquiries, funds transfer between accounts and payments of utility bills. The initial essence of the ATM was for the use of cash withdrawals which was expected on a 24 hour basis. Later the ATM technology incorporated the deposit facility where the customer was able to deposit either cash or cheques. This is a good substitute for the night safe facility which banks were providing, but to a few customers for the purpose of cash and cheque deposits. Customers are also able to check their account balances off the ATM which gives the actual bank balance as well as the balance available to the customer for withdrawal purposes. A mini statement showing the most recent (usually the last five (5) debit/credit) transactions on the account can also be obtained off the ATM, reducing the frequency of the customer going into the bank which contributes to the reduction of congestion in the banking hall.

2.2 CUSTOMER RISK PERCEPTION ON THE CHANNEL

As with any device containing objects of value, ATMs and the systems they depend on to function are the targets of fraud. Fraud against ATMs and people's attempts to use them takes several forms. In order to reduce the effects of fraud on the books of the banks, it is prudent for the banks to make provisions for the handling of funds. There are many factors that could lead to loses, ranging from negligence to fraudulent activities. Negligence on the part of the ATM custodian could lead to the stocking of the ATM cash handlers with the wrong denominations. Negligence on the part of the customer service officer or the help desk officer could also lead to cardholder requests to block cards not handled on time leading to fraudulent cash withdrawals. A big concern about information technology on service delivery channels is security. According to (Buchanan and Gilles, 1990), security is the condition of being protected against danger, loss, and criminals. In the general sense, security is a concept similar to safety. It is a condition that results from the establishment and maintenance of protective measures that ensures a state of inviolability from hostile acts or influences. The condition prevents unauthorized persons from having access to official information that is safeguarded in the interests of security. (Drennan et al. 2006), voiced out that, general perceived risk of online purchase and system security issues, such as unauthorized access to personal and credit card information, have directly affected ATM uses. Risk perception is the subjective judgment that people make about the characteristics and severity of a risk or consumer's subjective belief of suffering a loss in pursuit of a desired outcome" (Pavlou, 2001). Pavlou (2001) further suggests that behavioral uncertainty is created as a result of banks misrepresenting products, leaking private information, stealing of people identities and their money. From his explanation, perceived risk can be specifically categorized into monetary losses (economic risk), the imperfect monitoring of products and malfunctioning of the medium (seller performance risk), and disclosure of private information (privacy risks). Environmental uncertainty is also an important issue, leading consumers to fear theft of personal information. In addition, most people are more likely to have their transaction at more known and secure environment than using the service at strange and obscured places. In the consumers attempt to avoid risk it leads individuals to various assessment behaviors which includes; well-known major brand, brand loyal behavior, seeking information, wider search, a preference for bank branch hall services rather than using the channel (Campbell and Goodstein, 2001). When viewed as a dynamic process, perceived risk for ATM/e-banking shows more radical changes in risk levels than traditional banking services. The analyses by (Cunningham et al., 2008) indicate that financial risk drives the risk premium while psychological, physical and time risk play ancillary roles as risk drivers at certain stages of the consumer buying process. A major implication of this study is that there is a risk premium for using Auto Teller Machines and the risk is relevant.

2.3 CUSTOMER ACCESSIBILITY TO AUTOMATED TELLER MACHINES (ATM)

One of the key factors in determining competitive advantage in such a turbulent banking environment is the method of distribution of banking services/products (Delvin, 2001). Convenient and value driven distribution channels add worth to the service offered. ATMs must provide convenience to the customer. In this regard, ATMs are located at convenient places such as within the bank premises (on site ATMs) and away from the bank premises (off site ATMs) , such as at the airports, super markets, fuel filling stations, shopping malls etc. According to, (Mountinho et al., 1997) new-age banks operate with minimal number of physical branches and use remote banking for the bulk of their operations. The remote channels are used to provide basic services while more sophisticated services are provided on a face to face basis. Customers have less time to spend on activities such as visiting a bank and therefore want a higher degree of convenience and accessibility (Delvin, 2001). Since attitudes are less beyond the control of banking executives, attitudes are difficult to change. But to understand consumer attitudes toward ATM is extremely important, but managers can help predict the usage rate and evaluates the future growth of the channel. (Loudon and Della Bitta, 1993), therefore said it is imperative for mangers to understand that attitudes are developed from personal experiences and learning with reality, as well as information from both inside and outside the banking halls. As well as those derived from both direct and indirect experiences in life. It is thus important for managers to recognize that numerous factors precede attitude

formation and change.

2.4 CUSTOMER SATISFACTION

Kotler (1997) defines satisfaction as a person's feelings of pleasure or disappointment resulting from comparing a products perceived performance or outcome in relation to his or her expectations. Satisfaction can therefore be taken as a function of perceived performance and expectations. (Heskett, et. al., 1990) pointed out that total customer satisfaction is the highest form of service quality. Increased competition and customer demand for quality have compelled corporations to devote much of their market research budgets to studies of customer satisfaction. The performance of a financial service institution is driven largely by its ability to attract and retain customers who have a wide range of alternatives to choose from. Dr. Noriaki Kano, a Japanese quality engineer and quality satisfaction expert who spent years studying customer needs and expectations brought about the idea of the Kano Model. This model classifies product or service attributes and their importance based on how they are perceived by customers and their effect on customer satisfaction. It highlights some salient features of customer satisfaction in line with self-service technologies. Figure 2 below, shows a diagrammatic expression of the Kano model.
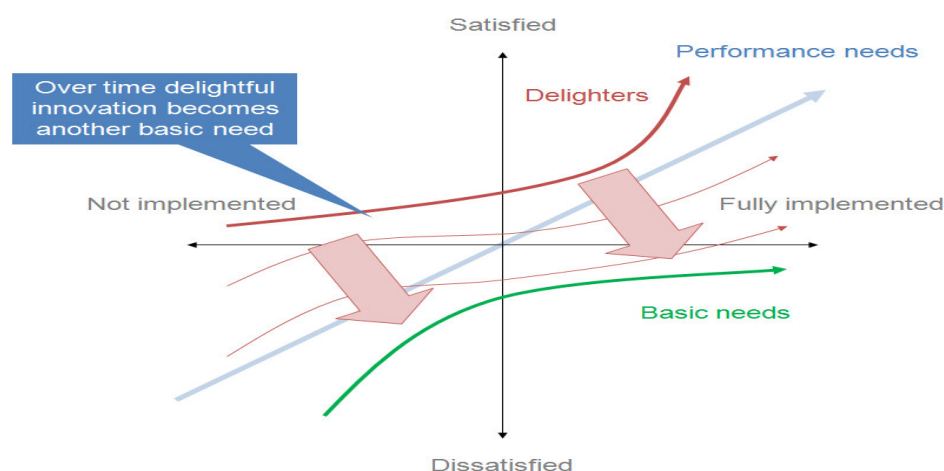

Figure 2.0: The Kano Model on customer satisfaction

Source: http://www.12manage.com/methods_kano_customer_satisfaction_model.html

Basic Factors dissatisfiers must have are the essential or "must have" attributes which will cause dissatisfaction if they are not fulfilled but do not cause customer satisfaction if fulfilled or exceeded. The customer takes these as prerequisites and takes them for granted. The availability of an ATM at a branch is one such example. A customer may not even be interested in opening an account with a bank if they do not have an ATM. Performance Factors cause satisfaction if performance is high and cause dissatisfaction if performance is low. Here the attribute performance overall satisfaction is linear and symmetric. These factors are directly connected to customers' explicit needs and desires. The ATM being easily accessible 24 hours a day and seven days a week is one such example as the customers will be assured of a service any time of the day. Excitement factors increase customer satisfaction if delivered but do not cause dissatisfaction if they are not delivered. These factors surprise the customer and generate delight. These factors can cause differentiation of the service and puts the bank at a competitive advantage with respect to other banks which either have or do not have the ATM facility. Examples of such facilities on an ATM are payment of utility bills, purchase of tickets or simply a talking ATM which gives verbal prompt to the customer.

2.5 BENEFITS OF THE AUTOMATED TELLER MACHINE (ATM)

In self-service technologies, the customer assumes the role of a producer and there are a number of benefits that are accrued to both the bank and the customer as a result of the introduction of this type of technology. The ATMs provide an opportunity for most financial institutions to expand their revenue though the initial costs involved in securing, installing, updating and servicing ATMs to leverage this opportunity can be quite prohibitive. ATMs can reduce the cost of servicing some customer demands for instance the bank will make savings as a result of a reduction in the number of tellers in the bank and reduction in overtime claims made by bank employees working late. Productivity by bank staff is increased in that the ATM takes up some of the functions that were previously only performed by the banker such as giving out cash, statements, taking cash/cheque deposits and hence the bank staff can now concentrate more in other areas that need improvement

and one such area is the cheque sorting and clearing department. The ATM enhances technology reputation in that, customers will come to have confidence in the technology once they have seen the benefits of using such technology. With the success of the ATMs, the banks have an opportunity to develop new delivery channels such as internet banking, telephone banking and electronic cheque clearing. Banks that have ATMs that provide a good and consistent service will most likely generate loyal customers as satisfied customers are likely to remain loyal while the dissatisfied customers easily defect to alternatives. The ATM differentiates one bank from another. Banks that have ATMs have an upper hand in terms of clientele numbers as compared to those that do not have. However, for banks that share ATMs like those on the GHLink switch, differentiation in terms of location for some banks is reduced. GCB has more branches country wide than the other banks hence have an advantage over the other banks in terms of increased number of ATMs. Congestion in the banking halls especially during month ends are greatly reduced, a factor which is enhanced with the increase in the number of ATMs. The agony of serving long queues by bankers is also reduced as most customers get their services from outside the bank. Congestion is further currently reduced as banks team up to share ATMs as in the GHLink network. Working late for back-office staff was a security risk but with the coming of the ATMs, this was greatly reduced. With advances in technology, processing of daily bank transactions is online and so are the ATMs which update a customer's account the moment a transaction is completed. ATMs provide convenience to the customer. Convenience is one aspect of customer satisfaction as the customer now has access to his bank account 24 hours a day, 7 days a week and so they can transact as and when they feel like. Another dimension of the ATM providing convenience to the customer is the location of these ATMs at strategic places like shopping malls and filling stations. The greater the number of ATMs there are, and the more spaced out they are, the better for the provision of better convenient service and this is what GCB has achieved with its spread of ATMs in the country. Saving time and money is another customer benefit as the customers will save time by accessing their accounts at convenient times. The ATM is consequently a product of innovation with implications for customer demand. (Griliches, 1994) points out that, "Improved access generates unmeasured but presumably not unvalued time savings for the users." Saving money comes about in the sense that the customer will be able to withdraw money as and when they need it. The payment of utility bills via the ATM would also result in saving time and money as the customer is able to make these payments at the ATM point instead of having to travel to the various utility bill payment points. The risks of carrying huge sums of money have been reduced as customers have the convenience of withdrawing only the cash they wish to use at particular times. The strategic location of these ATMs at shopping malls and filling stations also helps in reducing the risk of carrying huge sums of cash. ATM cards can also be used as debit cards for the purpose of shopping which also enhances security. ATM increases the perception control. Empirical studies have demonstrated that consumer benefits of using self-service technologies and in this regard ATMs include being in control (Dabholker, 1996). This means the consumer is in control of the technology with regard to ease of use and the user friendly on screen menus that guide the customers as they transact on the ATM. ATMs are able to offer a combination of service on a single machine such as cash withdrawals, cash/cheque deposits and statement issuance without the customer having to go through a string of bank attendants to get these services. This helped in reducing the amount of time customers were spending on queues in the bank waiting to be served.

3.0 METHODOLOGY
3.1 RESEARCH DESIGN
The research design used was the descriptive survey. This method described and explained conditions of the present by using questionnaires to fully describe the phenomenon. This was used because the study aimed at getting respondents to answer the same questions which involved many variables. The type of data generated was both qualitative and quantitative data. The qualitative data was focused on people's experiences, their feelings and aspirations. This was done through issuing out questionnaires to respondents to find out their views on the challenges of ATM services of GCB. The quantitative data that was generated from the questionnaire issued was analysed and interpreted using statistical models such as percentages to cover the entire population of the study.

3.2 POPULATION, SAMPLE AREA, SAMPLING TECHNIQUE AND SAMPLE SIZE
The population of the study were customers of GCB who use ATM. However, the researchers used ten (10) branches of the bank in Accra. These branches were selected because they had lots of customers who use the ATM. These branches are; Boundary Road Branch, High Street Branch, Liberty Avenue Branch, Ministries Branch, Kwame Nkrumah Circle Branch, Kaneshie Market Branch, Abeka Lapaz Branch, Tetteh Quarshie Branch, Adenta Branch and Burma Camp Branch. The sampling size considered was 272 respondents and this include 50 staff and 222 customers.

3.2.1 Sample

According to Williamson (2008), a sample is a subset of the population which comprises members selected from it. A sample size of 272 was chosen from the total number 15,523 customers (thus those who use the ATM) to answer the questionnaires, that is, 5 respondents each from the chosen branches thus Boundary Road Branch, High Street Branch, Liberty Avenue Branch, Ministries Branch, Kwame Nkrumah Circle Branch, Kaneshie Market Branch, Abeka Lapaz Branch, Tetteh Quarshie Branch, Adenta Branch and Burma Camp Branch.. Yamane (1967) came up with a formula for calculating for the sample size from a statistical population selected: thus

$$n = \frac{N}{1 + N * (e)^2}$$

n= sample size

N= the total number of customers at the four selected branches who use one or more electronic product or service

e= the acceptable sampling error. The acceptable sampling error in this case was 6 per cent (error margin 0.06). Therefore 94 per cent confidence level was assumed. The calculation for our expected sample was then done as follows.

$$n = \frac{15,523}{1 + 15,523 \ (0.06)^2}$$

$$n = \frac{15,523}{1 + 15,523 \times 0.0036}$$

n = 272.90   Therefore: n = 272

The expert opinion and purposive sampling technique was used to arrive at the number of respondents (272) needed for the study after the Yamane (1967) formula gave n = 272. Therefore out of the total number 15,523 customers who use the ATM from the ten selected branches 222 customers were selected for the questionnaires and five (5) members of staff from each of the ten selected branches were interviewed. The total number of GCB Bank staff interviewed was fifty (50).

3.2.2 Research instruments

The questionnaire was used as the research instrument. This was because; the questionnaire is an inexpensive way to gather data from a potentially large number of respondents. Often they are the only feasible way to reach a number of respondents larger to allow statistical analysis of the results. The questionnaire was developed in two parts, Open-ended and closed-ended questionnaires. Open-ended questions gave respondents the opportunity to express their opinion. For these questions there are no predetermined set of responses, the respondents are free to answer the questions however they choose. The closed ended questions employed in the research provided multiple choice questions. They enabled the tracking of opinion over time as well as help for easy analysis. In all, two forms of questionnaires were used. One set for management and staff of the bank and the other for customers. This enabled the researchers cover a broader area for better deductions and analysis. Questions on the questionnaire were structured in line with the related literature and also based on the research objectives. To draw a meaningful, valid and reliable conclusion, and make relevant recommendations, descriptive and statistical analysis in the form of tables was drawn based on percentages. For the purpose of this study, two types of source data were collected. These were primary and secondary data sources. Primary data was collected from respondents through the questionnaires which is the main research instrument. Secondary data was collected from the literature works of other people. This includes literature from text books, journals, magazines, newspapers, internet and other related publications.

4.0 DATA ANALYSIS

Data analysis and management was done using Statistical Package for the Social Science (SPSS) computer application. It is a tool that is used by researchers for industrial research and educational research. The frequency counts, sample mean and variance was calculated and analyzed with data gathered from the questionnaire and interviews. The data collected was examined to make sure they are of good quality. The questionnaires were also examined to see if they were properly completed. The data was laid in a manner that would make analysis easier. The responses were measured with a five-point Likert-type rating scale, where Strongly Agree (SA) = 4; Agree (A) = 3; Strongly Disagree (SD) = 2; Disagree (D) = 1; and Neutral (N) = 0. A total of 272 questionnaires were issued to customers, staff and management of the bank in the banking halls and at various offices respectively.

Out of 222 of the questionnaires issued to customers, 200 were received, representing a retrieval rate of 90.09% whilst all 50 questionnaires issued to staff and management was retrieved, representing a retrieval rate of 100%.

4.1 Data Presentation, Analysis and Discussion Of Findings
Table 4.0 Distribution of Number of Years of ATM Usage

	Frequency	Percent
Less than a year	34	13.6
1-3	69	27.6
4-6	90	36.0
7-9	48	19.2
10 yrs and above	9	3.6
Total	250	100.0

Source: Survey Data 2015

There was the need to ascertain the length of time customers have used the ATM. This was an attempt ensure that views given by them are not the views of a novice. Table 4.0 revealed that, most (36%) of the customers have used the ATM for a minimum of 4 years and a maximum of 6 years. 27.6% have used the ATM for an average of 2 years, 19.2% have used it for at least 7 years and at most 9 years. However, only 3.6% have used the ATM 10 years and over. The survey shows that, ATM usage increased in the past 4 to 6 years and that, patronage has decreased for the past three years. The decline in the number of years of ATM usage for the past three years was due to the fact that issuance of cards to customers was saturated in the past four to six years and as such most of the respondents had their cards during the saturation period.
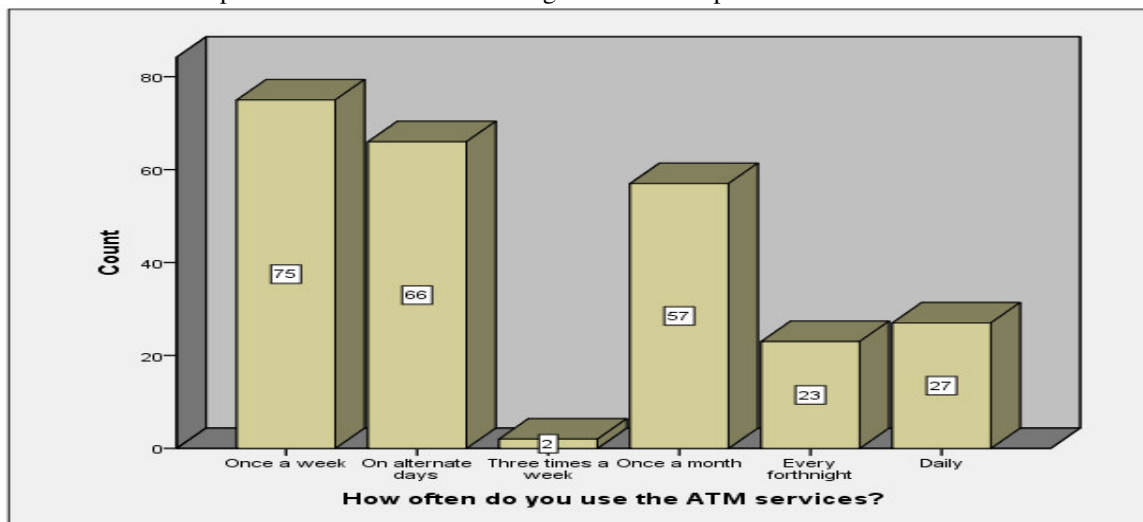

Fig 4.0 Frequency in the Usage of ATM Services by Respondents, Source: Survey Data 2015

The above result shows that 30% of respondents use the ATM services once a week while only 2% of respondents are said to use the ATM three times a week. 26.4 % often use the ATM on alternate days and 22.8% use it once a month. Also, about 10.8% and 9.2% respondents use the ATM service daily and fortnightly respectively. This statistic shows that, most respondents have reduced their personal interaction with bank staff for transaction services. It also affirms the respondents' frequency of ATM usage which was analyzed to be increasing. Overall, the above statistics shows the acceptability of the ATM in undertaking transactions by bank customers to enhance their service deliver.
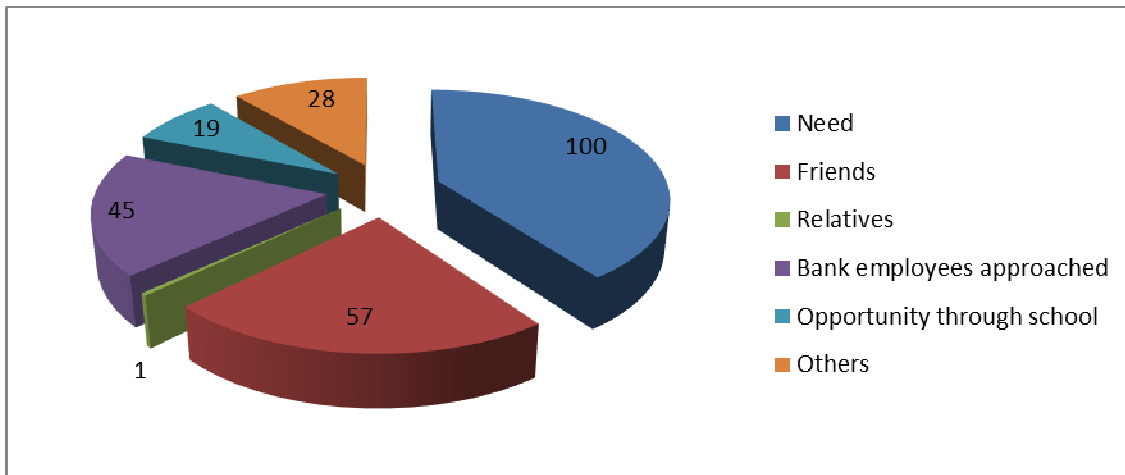
Fig 4.1 Influencing Factors on Usage of Bank Card Source: Survey Data 2015

Majority (40%) of respondents stated that, they are using a bank card because they needed it. This was followed by influences from friends (22.8%). 18% of the respondents use a bank card because bank employees approached them to have one. Moreover, 7.6% of the respondents had this opportunity to have a bank card through school or college. About one out of every ten respondent has a bank card due to reasons other than the stated few. Surprisingly, only one respondent was influenced by a relative to have a bank card (Fig.4.1). The high percentage of need and acceptance of the ATM card after a bank employee approach for the ATM card shows the penetration and acceptance by bank customers to the importance of the self-serve technology, the ATM. This also highlights the growing demand by customers for the ATM service in order to make banking much more convenient to them.

4.1.1 CUSTOMER'S ATTITUDE TOWARDS ATM USAGE

This section gives information of how the respondents feel towards the usage of the ATM. These results were useful because they help in analyzing the various issues that could influence   customers' patronage of the ATM and to direct the banks effort towards addressing these issues. Questions that were asked towards customers perceptions on the ATM includes; Attribute of banks that customers value most, Factors that promotes the use of the ATM, Computer literacy level, Technology related transaction frequently used, and the Frequency of use of service.
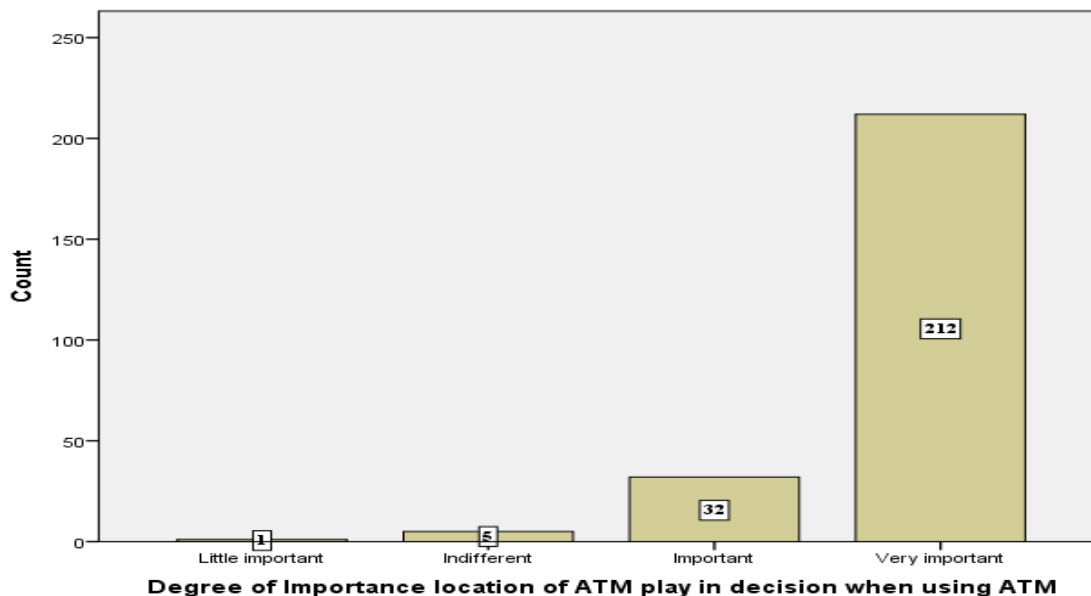
Fig. 4.2 Degree of Importance of ATM Location on ATM usage
Source: Survey Data 2015

Majority of respondents (84.8%) stated emphatically that, the location of ATM plays a very important role in their decision when using the ATM. 12.8 % also stated that location of ATM is important. These suggest that, generally, the decision to use an ATM is dependent on the location of the ATM. Customers will prefer to use an ATM in a serene environment where they would not feel intimidated by passersby or the fear of being robbed off

their money at the terminal. An ATM located too close to the road side will make passersby know the type of transaction the customer is undertaking and people with criminal intents may follow the customer to rob him/her of the money. Similarly, an ATM located in an obscure or quiet area could also be an avenue for robbery attacks as such attacks may go unnoticed.

CHALLENGES FACED BY ATM USERS	Ranked First		Ranked Second		Ranked Third	
Challenges	Freq	%	Freq	%	Freq.	%
Accounts being debited without dispensing	231	92.4	9.0	3.6	9.0	3.6
ATM being sited at an obscured area	7	2.8	215	86	14	5.6
ATM not dispensing the denomination you require	4	1.6	25	10	156	62.4
Not understanding the usage of ATM	2	0.8	0.0	0.0	1	0.4
Being unable to use the ATM effectively	4	1.6	1.0	0.4	43	17.2
ATM not suitably designed to your taste	2	0.8	0.0	0.0	27	10.8
Total	250	100.0	250	100	250	100

Table 4.1 Challenges faced by ATM users
Source: Survey Data 2015

Observations from Table 4.1 indicates that, the three main challenges faced by users of ATM are; accounts being debited without dispensing, ATM being sited at an obscured area (94.4%) and ATM not dispensing the denomination they require (74%). The challenges mentioned, ranked first, second and third respectively among all the challenges. 99.6% of respondents stated that 'Accounts being debited without dispensing' is a challenge. Arguably, customers do not want to lose funds to the ATM and for these reasons do not want to withdraw from the ATM when they are aware the amount to be withdrawn is the last they have in their account. This is because it takes between 24 hours to 72 hours to reimburse customers with their money when this incidence occurs on their local ATM's and up to about 45 working days to reimburse funds not dispensed on other banks ATM platforms. Customers are thus more likely to reduce their transaction with the ATM when this issue re-occurs to their disadvantage. The siting of an ATM at obscured locations has already been explained in the previous discussion. The money denomination required by customers at the ATM is another factor that banks must deal with expeditiously. Whilst some customers would want to withdraw cash from their accounts to the last cedi and as such may wish to have the ATM stocked with cash of the lower denomination, others who may fall within the high net worth category of the bank will also wish the banks to stock their ATM with cash of highest denomination so that they do not bear the risk of carrying large sums of money around.

4.1.2 RATINGS OF INDICATORS OF CONSUMER SATISFACTION

This part analyse the satisfaction levels of customers regarding the use of the ATM service taking into consideration service quality. The various quality dimensions were employed in order to understand customers' levels of satisfaction and how it affects their choice of usage of the ATM service. The quality dimensions that were used include Tangibility, Reliability, Responsiveness, Assurance, Empathy, Efficiency and Accuracy. The security, ease and convenience of banking were also analyzed. Customers also answered questions on the contribution of the ATM to the success of banks, their two major uses of the ATM service, and the three top-most challenges they face at the ATM.

Mean Level of Satisfaction of ATM Services
ES- Extremely Satisfied, D-Dissatisfied, N-Neutral/Average, S-Satisfied, ED-Extremely Dissatisfied

Dimensions/Indicators	ES	S	N	D	ED	Mean
A. Tangibility						
Bank has up-to-date equipment & technology	510	324	114	54	2	4.0
The quality of notes	0	672	123	50	16	3.4
Location of the ATMs	235	572	171	6	0	3.9
Sufficient number of ATM	80	632	48	120	0	3.5
The employees approach if ATM not working	5	280	234	180	2	2.8
Mean Satisfaction						**3.5**
B. Reliability						
The bank website does not freeze after input of information	365	208	210	108	1	3.6
Information provided on screen	0	540	336	6	0	3.5
Wide range of products and services provided	5	624	270	6	0	3.6
Mean Satisfaction						**3.6**

C. Responsiveness

European Journal of Business and Management
www.iiste.org
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.7, No.20, 2015

Customer service representative	515	228	219	14	1	3.9
Bank performs the services right the first time	80	692	141	8	1	3.7
Quick confirmation	85	412	339	16	0	3.4
Our requests are handled promptly	70	228	300	138	1	2.9
Mean Satisfaction						**3.5**
D. Assurance						
Employees of bank have knowledge to answer customer questions	465	244	192	48	0	3.8
Politeness and friendly staff	190	572	117	50	0	3.7
Employees are always willing to help you	110	416	138	136	6	3.2
Experienced management team	185	272	282	92	1	3.3
Mean satisfaction						**3.5**
E. Empathy						
Time bound work of employee	420	216	195	84	1	3.7
Help desks, call centres of bank	50	268	261	162	1	3.0
Specific needs understood	170	156	276	160	1	3.1
Provisions of financial advices	145	552	219	10	1	3.7
Mean satisfaction						**3.4**
F. Efficiency						
Performance of plastic cards	480	400	135	8	1	4.1
Mean Satisfaction						**4.1**
G. Accuracy						
Problem solving through instant information	100	292	207	162	0	3.0
Bank insists on error-free transaction records	80	548	177	60	1	3.5
Service charges	320	420	135	54	2	3.7
The employees approach if ATM not working	0	200	336	160	3	2.8
Mean satisfaction						**3.3**
H. Security						
Privacy	145	516	234	12	0	3.6
Protection of banking transactions	145	224	459	4	0	3.3
Care in collection of personal information	75	572	234	12	0	3.6
The employees approach if ATM not working	70	332	291	96	0	3.2
Mean Satisfaction						**3.4**
I. Easy and Convenient Banking						
Language and information content	185	776	45	8	0	4.1
Convenient hours of operation	220	588	165	6	1	3.9
Easy to find products and services	150	336	396	8	0	3.6
Mean Satisfaction						**3.9**

Table 4.2 Source: Survey Data 2015

Table 4.2 revealed the level of satisfaction of ATM service delivery. A higher level satisfaction means a high positive impact while a low level of satisfaction shows a low impact. Observations showed that customers are generally satisfied with the ATM service delivery with a mean satisfaction of 3.6. Hence, there seems to be a positive impact of the ATM in delivering services. Respondents were satisfied on indicators such as tangibility, easy and convenient banking, assurance, responsiveness and reliability. Customers are extremely satisfied with the performance of the plastic cards. However, customers showed neutrality on dimensions such as accuracy, empathy and security.

Mean Scores	Meaning
1.0 – 2.2	Strongly Dissatisfied
2.3 – 2.8	Dissatisfied
2.9 – 3.4	Neutral/Average
3.5 – 4.0	Satisfied
4.1 – 5.0	Extremely Satisfied

Table 4.3, Key to table

4.1.3 EFFECT OF LOCATION, UPTIME AND PERCEIVED RISK
This section of the data analysis looks at the effect of the location of the ATM, the effects of uptime of ATMs and the perceived risks of customers in the usage of the ATM. Some questions that respondents were asked include; whether they looked out for the location of the ATM before planning to make any transaction, periods that customers use the ATM most, their concern about security, their concern about theft of card information for fraudulent purposes and lastly the degree of importance of some key indicators of the ATM site factors.

ATM LOCATION	FREQUENCY (F)	PERCENT (%)
NOT AT ALL IMPORTANT	24	10
LITTLE IMPORTANCE	19	8
INDIFFERENT	15	6
IMPORTANT	58	24
VERY IMPORTANT	124	52
TOTAL	241	100

Table 4.4; Influence of ATM Location on usage
Source: Survey Data 2015

From the above statistics, the location of the ATM plays an important role in respondent's decision to use the service. 52% deem it very important whiles 24% asserted its importance.
Most customers prefer ATMs that are located outside of banks or located at airports, malls, and places far away from the home bank of customers which makes it easily accessible and convenient. ATM in the close vicinity to the office was also preferred among users.
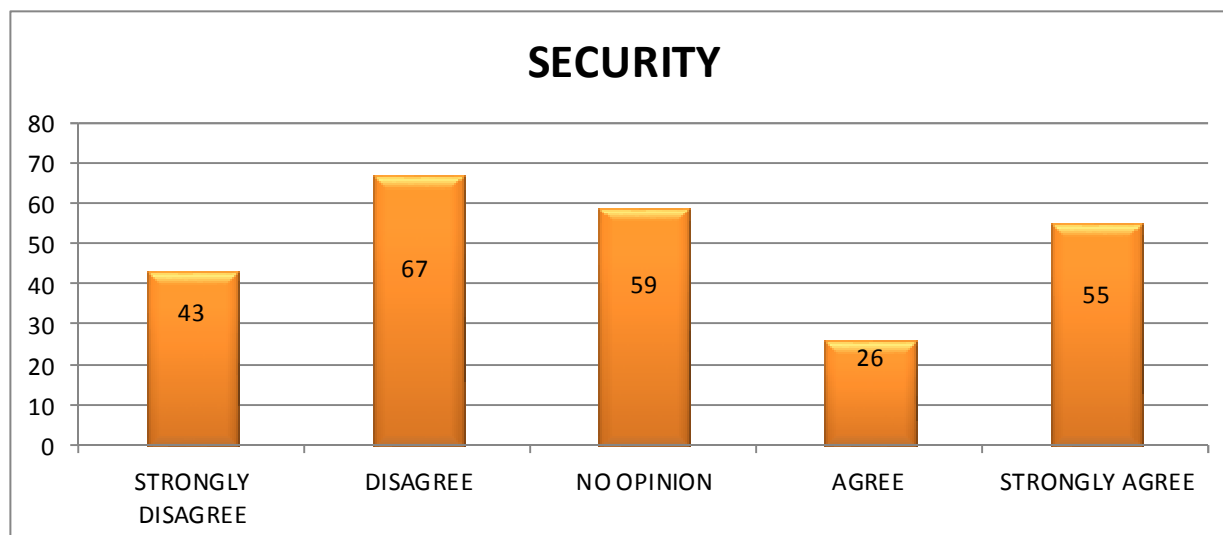

Figure 4.3 Security concerns towards ATM usage
Source: Survey Data 2015
Among the fairly large proportion of respondents surveyed 22% and 10% strongly agree and agree respectively that security concerns of the ATM card information would deter them from patronizing the service. The respondents wanted the bank to improve upon the security at the ATM booth although the machines have security cameras installed in them. They indicated to the researchers that the ATM was poorly lit in the evenings and sometimes no security personnel was found near the ATM booth during certain times of the day. Some respondents also felt unsecured when they used some ATMs because of its location. They feared that passersby could easily notice all that they were doing. 27% disagree and another 24% also had no opinion whilst 17% also strongly disagree. This confirmed the assertion that with the numerous types of security threats customers were

exposed to, individuals have different attitude towards the adoption of the Auto Teller Machine technology (Lu ct al 2005). The strong indication of customers disagreeing on the issue of security at the ATM is also an indication of the fact that, the ATM technology has come to stay and customers will stop at nothing (not even security threats) at using the ATM.
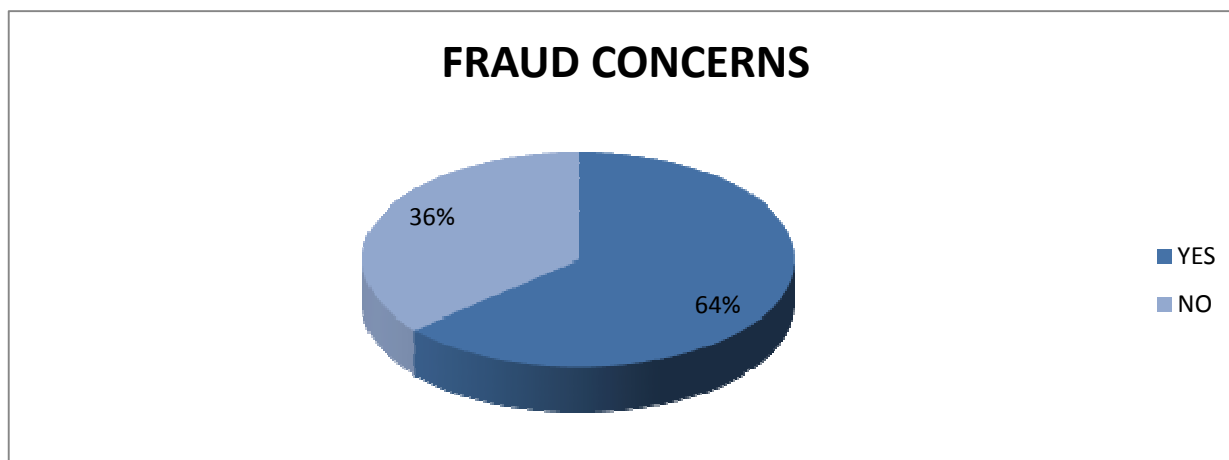

Figure 4.4 Respondents' Fraud Concerns Towards ATM Usage
Source: Survey Data 2015

With reference to the above pie chart, 64% of the total respondents expressed their fear that someone might steal card information for fraudulent purposes. A proportion of 36% do not express such sentiments. To protect ATM users from fraud, financial institutions should offer programs which will reassure customer's safety with regard to ATM usage through sensitization, workshops and durbars and also support the skills development among bank personnel. Customers must also be educated on some safety tips such as not storing their card and Personal Identification Number (PIN) together. Banks can also install modern ATMs which are biometric and require a customer's biometric data such as the palm to access the ATM services without the use of cards. The biometric ATMs are better secured because the customers' details are based on the uniqueness of the individual's physiological properties such as the use of distinct fingerprints to prevent the challenge of ATM fraud which is on the ascendency.

5.0 SUMMARY OF FINDINGS
This research has been conducted to analyze the impact of the ATM in delivering service in the banking industry. The study accessed the Automated Teller Machine (ATM) at ten (10) selected branches of GCB Bank Limited in Accra by examining the factors contributing to customer perception of ATM services and the strategies adopted to promote ATM usage in the bank. The survey method was employed to collect data from 272 respondents using questionnaires.
The study focused on;
- To identify factors that influence the use of ATM.
- To establish customer perception of ATM location and uptimes and its effect on usage;
- To identify the challenges involved in the use and operations of the ATM; and
- To identify the extent of customer satisfaction with respect to service quality towards ATMs and the bank.

Customer attitude towards the ATM was tested using questions based on security, location, fear of fraudulent withdrawals on account and the frequency of usage of the ATM. It was realized that customers were actually concerned about the security issues related to the ATM such as the location of the ATM. Customers emphasized, by the large percentage of 84.8% that the location of an ATM is something they look out for before using the facility. Issues on security though did not deter customer from using the ATM as a large majority, 22%, of the respondents disagree that security concerns will prevent them from using the ATM terminal to transact business with the bank. Again, by the high percentage of 84.8% of respondents asserting that they watch out for the location of the ATM before going to transact means customers who go to the ATM are becoming more security conscious and banks must consider this factor in locating an ATM. Respondents also detailed the fact that they use the ATM as and when needed and since banks also must satisfy them should make the ATM available to them at all times. The uptime of the ATM is therefore very essential to customer satisfaction especially on holidays and weekends when most banking halls were closed. The three top-most challenges customers are faced with at the ATM were also identified in the study and these included," accounts being debited without dispensing" being ranked first with a 92.4% average followed by "ATM being sited at an

obscured area" ranked second with an average of 86% and "the ATM not dispensing the denomination required" by customers ranked third with an average of 62.4%. Overall, it was realized that customers have come to accept the ATM as a tool in performing banking related transactions. This was due to the fact that most respondents tend to agree or strongly agree with the service quality indication factors such as Tangibility, Reliability, Responsiveness, Assurance, Empathy, Efficiency and Accuracy. The security, ease and convenience of banking were also of much concern to the respondents and banks must be quick in addressing these issues.

5.1 CONCLUSION

The study was aimed at assessing the impact of the ATM in delivering service in the banking industry in Ghana. The study provided some evidence that the ATM has now been accepted by customers in the industry as it has gained a positive impact on service delivery to customers. Introduction of the ATM facility and directives by management of GCB that checking of balance and withdrawal of cash less than a certain amount over the counter would attract a fee has not only helped reduced long queues in the banking halls but has also helped customers to have control over their monies and its management. Tangibility, Reliability, Responsiveness, Assurance, Empathy, Efficiency and Accuracy were the variables considered to determine customers' satisfaction/dissatisfaction with respect to adoption and usage of the ATM service. Customers are generally considered satisfied with ATM services offered to them by GCB. This study has demonstrated that the ATM plays critical role in banking service delivery. The introduction of ATMs by GCB is primary to integrate technology so as to effectively and efficiently serve their customers better. Banks must therefore continue to provide ATMs at various strategic locations which are safe and convenient to its customers. It is also clear that the introduction of ATM services into banking activities by GCB is basically to be able to compete favorably in today's competitive business environment. The introduction of this product has had a tremendous positive impact on customers. Meanwhile, these benefits have not come without challenges which include:

- Customers' accounts being debited without dispensing
- Location of the ATM and its security implication
- Not loading the ATM with the denomination of cash needed by customers
- Shortage of money in ATM's during peak hours or weekends
- ATM cards sometimes stack in the ATM
- ATM malfunction due to connectivity problems

The challenges as observed by the researchers appeared quite recurring. It is therefore incumbent upon the management of GCB to take immediate steps to address them before it becomes too late and lose customers to competitors. From the findings of the study it is believed that the following recommendations would help banks and customers realize the full benefit of the ATM as a service delivery channel. Banks should develop new user friendly, competitive systems and applications that will enable customers harness the full benefit of the ATM. Additionally, banks should play a key role not only in developing the infrastructure which are going to make ATM usage convenient to its customers but also provide an incentive that will be convincing enough to customers to continue using the self-service technology. One example of such an incentive is the ability to provide various services such as the cash deposit, funds transfer and cardless ATM withdrawals among others. Banks must also offer programs which would reassure customers' safety with regards to ATM fraud through sensitization, workshops and durbars and also support the skills development among bank personnel to be security conscious. This would alert them to act promptly if customers report dubious transactions on their accounts. The central monitoring unit that checks the operation of all the banks ATMs must be appropriately resourced so as to deal expeditiously with customers' issues such as debits without dispensing, connectivity issues and remote monitoring of the ATMs across the country in other to provide customer satisfaction. Lastly, banks must educate customers to patronize their local banks ATMs and to use the ATMs closer to their community in other to minimize the stress that they go through in getting issues reported on and getting them resolved promptly. Customer education must also emphasize that ATM transactions are voluminous and must therefore be reported promptly so as to get them resolved in time in the instance whereby that transaction eludes the supervisor.

REFERENCES

Abor, J. (2004). Technological innovation and banking in Ghana: "An Evaluation of Customers' Perception", American Academy of Financial Management.

Bank of Ghana (2006). "Guidelines for Operation of ATMs and Point of Sale Systems", Accra.

Bank of Ghana (2009). "Bank charges – Bank of Ghana" – www.bog.gov.gh.

Bank of Ghana, Annual Report 2006, 2008: Accra

Buchanan, R. & Gilles, C. (1990). Value managed relationship: the key to customer retention and profitability. European Management Journal, 8(4), 523-526.

Campbell, M. C. and Goodstein R. C., (2001), "The Moderating Effect of Perceived Risk on Consumers'

Evaluations of Product Incongruity: Preferences for the Norm," Journal of Consumer Research, Vol. 28 No 3. pp 439-449.

Cunningham, W.A., Van Bavel, J.J., Johnsen, J.R., (2008). Affective flexibility: evaluative processing goals shape amygdala activity. Psychol. Sci. 19, 152–160

Dabholkar, P. (1996), "Consumer Evaluation of New Technology-Based Self-Service options: an Investigation of Alternative models of service quality", International Journal of Research in Marketing, vol.3, pp. 29-51.

Devlin, J.F. (2001), Consumer Evaluation and Competitive Advantage in Retail Financial Services: A Research Agenda // European Journal of Marketing, Vol. 35, No. 5/6, pp. 639-661.

Drennan, J., Mort, G. S., and Previte, S., (2006). "Privacy, Risk Perception, and Expert Online Behavior: An Exploratory

Study of Household End Users", Journal of Organizational and End User Computing, Vol. 18, No. 1: 1-22.

Ghana Commercial Bank, Annual Financial Report (2008, 2009, 2010), Accra.

Ghana Commercial Bank, Golden Eagle (2008, 2009), Accra.

Griliches, Z., (1994). Productivity, R&D, and the data constraint. *American Economic Review* 84 (1): 1–23.

Heskett, J., Hart C., and Sasser, Jr. W. E., (1990) Service Breakthroughs: Changing the Rules of the Game. NY: Free Press, New York.

http://www.12manage.com/methods_kano_customer_satisfaction_model.html. Accessed on 06/07/2015

Jordan, J. and Katz, J. (1999). Banking in the Age of Information Technology.

Kotler, P., (1997), Marketing Management : Analysis Planning implementation and control, Englewood Gliffs, Nj: Prentice Hall, New Jersey.

Loudon, D. and Della Bitta, AJ (1993): Consumer behavior. Concepts and applications. 4th ed. New York.Mc Graw Hill.

Moutinho, L., Davies, F., Deng, S., Miguel P. S. and Alcaniz J. E. (1997), "The future role of bank branches and their managers: comparing managerial perceptions in Canada and Spain", International Journal of Bank Marketing, Vol. 15, No. 3, pp. 99-105.

Pavlou, P., 2001. Integrating trust in electronic commerce with the technology acceptance model: model development and validation. AMCIS Proceedings, Boston, MA.

PWC Ghana, Ghana Association of Bankers, (2010) Ghana Banking Survey; Risk Management in well Capitalised Banks,

Rose A, Peter S., (1998), "Commercial Bank Management", 4th ed., Irwin/McGraw-Hill, Boston, USA.

Tomasofsky, P. (2009). "All cards are not created", Electronic Payments Conference 2009, University of California, University of Toronto.

Williamson, J., (2008) "Research Design and Sample", Texas, John Hops Publishers

Yamane, Taro. (1967). "Statistics: An Introductory Analysis", 2nd Edition, New York: Harper and Row.

Yasuharu, UKAI (2003), The Effects of Information Investment in Banking Industry.

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

Academic conference: http://www.iiste.org/conference/upcoming-conferences-call-for-paper/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar