

Impact of E-Banking on the Profitability of Banks in Ghana

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Abstract

The study assessed the impact of electronic banking on the profitability of a Bank in Ghana. How the bank finds itself before a new fact imposed by technology revolution that has changed their work mechanisms from traditional means to electronic means. Furthermore, this study investigates how the electronic banking services through internet and ATM has impacted on banking services in general and the banks' profitability in particular. The methodology was quantitative in nature. In all, 150 questionnaires were administered to the interviewee from the selected branches of the Agricultural Development Bank who are customers, to solicit information concerning the E-banking. All data from the structured self-administered questionnaires were correctly organized. The software that was used for this is, Statistical Package for Social Sciences (SPSS). The study was also more descriptive in nature. After testing the hypothesis by using inferential statistics, it was discovered that E-banking does have an impact on the profitability of the Agricultural Development bank. There was a significant increase in the net profit margin of the bank in the year (2011) E-banking was introduced and the even though it fell in the next year (2012) which wasn't much, it increased again in the third year (2013). The study revealed that E-banking has a positive effect on ADB's Profitability.

Keywords: Profitability, Electronic Banking, Internet Banking, ADB

1. Introduction

The gyration of information technology has influenced almost every aspect of life, among them is the banking sector. Introduction of electronic banking has revolutionized and redefined the ways banks were operating (Sumra, Manzoor, Sumra, & Abbas, 2011). As technology is now considered as the main contribution for the organizations' success. So the banks, be it domestic or foreign are investing more on providing the customers with the new technologies through e-banking (Sumra et al, 2011). The availability of e-banking is expected to affect the mixture of financial services produced by banks, the manner in which banks deliver these services and the resulting financial performances of these banks. Whether or not this extreme view proves correct and whether banks take advantage of these new technologies will certainly depend on their assessment of the profitability of such a delivery system for their services. Industry analysis outlining the potential impact of e-banking on revenue growth, risk profile and cost savings of the banks have also generated notable interest and speculation about the impact of the Internet on the banking industry (Berger, 2003). In fact, E-Banking eliminates physical and geographical boundaries and limitations of banking services. Banking over the Internet has attracted the customers and increasing attention since the late 1990's from banks, brokerage houses and insurance companies, as well as the business press, regulators, and law makers all over the world. This attention has been due, in part, to the rapid and significant growth in electronic commerce (e-commerce) and to the notion that electronic banking and payments are likely to advance more or less in tandem with e-commerce (Harihara & Pavithra, 2012). The main objective of this study is to assess the impact of e-banking on Profitability; a study of Agricultural Development Bank.

Bankers now see a kind of evolution in their business, partly, because the world has taken a quantum leap in the use of technologies in the last several years and Agricultural Development Bank is one of those businesses in the banking industry of Ghana, which has recognised the need to integrate in to its activities the use of e-banking. However, most banks practicing e-banking face challenges such as customer preference of the e-banking facility, convenience of clients to utilize and adopt e-banking facilities. While numerous studies have been undertaken to examine issues in the wider context of e-banking and customer loyalty, comprehensive research in the area of e-banking issues and customer preferences and how it impacts profitability in the specific context of Ghana has been rather limited. This study thus attempted to assess e-banking's impact on profitability in respect to ADB.

The average consumers are more informed than ever before, it is clearly noted in literature that the effects of customers' behaviour or satisfaction on the performance of the banking sector are visible. LeBoeuf (1987), stated that meeting customer expectation is increasingly becoming more difficult. They want to get value for their money as they perceive it. A number of studies have concluded that ICT has appreciable positive effects on bank productivity, bank patronage, cashiers' work, banking transaction, bank services delivery, customers' services and bank services.

1.1 Objective of the Study

The primary objective of this study is to assess the impact of e-banking on Profitability of Agricultural

Development Bank, Ghana (ADB).

The Specific Objectives:

- To assess the motive behind the provision of ADB's e-banking services to customers.
- To assess if the provision of these services has affected the service quality of ADB.
- To establish the relationship between e-banking and profitability of ADB.

1.2 Research Question

- Has ADB achieved the motives behind the introduction of e-banking?
- Has the provision of these services affected the service of quality of ADB?
- Is there a relationship between e-banking and ADB's profitability?

2. Literature Review

Technology has gained prominence in Ghanaian banks. Banks traditionally have always sought medium through which they would serve their clients more cost-effectively as well as augment the benefit to their clientele. Their core concern has been to serve clients more conveniently, and in the process increase profits and competitiveness thus banking in Ghana embracing the influx of e-banking. Electronic banking can be defined as the deployment of banking services and products over electronic and communication networks directly to customers (Singh & Malhotra, 2004). Improvement in Information and Communication Technology in Sub-Saharan Africa are rapidly changing the way business is conducted. These improvements in technology have resulted in new delivery systems for banking products and services such as Telephone Banking, PC-Banking, and Electronic Funds Transfer at Point of Sale (EFTPoS). Coombs in 1987 stated that innovations in information processing, telecommunications, and related technologies – known collectively as “information technology” (IT) – are often credited with helping fuel strong growth in the many economies. It seemed apparent then that, technological innovation affects not just banking and financial services, but also the direction of an economy and its capacity for continued growth.

Polatoglu & Kin, (2001) stated the vast majority of the banks that avoided Internet banking when it was first introduced, did so because they simply did not see the benefits of using it. They further stated that the average internet banking transaction costs the institution only one twentieth of a teller transaction. Electronic and communications technologies have been used extensively in banking for years to advance agenda of banks, and Agricultural Development Bank has not been an exception.

History of Agricultural Development Bank

In 1964, Bank of Ghana set up a Rural Credit Department to prepare the necessary legislation, plans and procedures for the establishment of a specialized bank for the provision and administration of credit and other banking facilities in the agricultural sector. In 1965, Parliament passed The Agricultural Credit and Co-operative Bank Act, 1965 (Act 286) which incorporated a bank under that name. In 1967, National Liberation Council Decree (NLCD 182) was passed to change the name of the Bank to Agricultural Development Bank (ADB) and amended certain sections of the original Act to allow ADB to undertake the acceptance of deposits on current and savings accounts and transact banking business normally carried on by commercial banking institutions, including raising loans from foreign sources. In 1970, The Agricultural Development Bank Act, 1970 (Act 352) was passed to broaden the Bank's functions. ADB was granted a full banking license in that year under the Banking Act, 1970 (Act 339). In 2004, ADB gained a Universal banking license under Banking Act 2004 (Act 673) which removed restrictions on banking activity. From its original Head Office on Tunisia Road, ADB moved to the Ring Road Central, then to the Cedi House on Liberia Road in 1993, before finally settling at its current ADB House Head Office premises on Independence Avenue in 2005.

2.1 E-banking

Electronic banking is when the internet is used as delivery channel for providing of services like online transfers, electronic bill payments, and accepting deposit into accounts. The services can either be provided by mounting a dynamic website and providing services through that or services can be provided through a virtual bank as well. It can also be provided by the banks having physical offices. Internet is used as a strategic and differentiating channel to offer high valued financial services, complex products at same or improved quality at lower costs without physical boundaries and to cross sell products like credit cards and loans (Sumra, Manzoor, Sumra, & Abbas, 2011). Computerized banking system basically is the use of electronic equipment and application of advance computers and communication technologies for banking activities. That is collecting, transferring, receiving, paying, lending, dealing, investing, exchanging and servicing of safe deposits, withdrawals, agency, trusteeship, custodianship money and claims for money both domestically and internationally. Automation banking is in the form of electronic banking otherwise known as Backroom Technology (Sinkey, 1990).

Molyneux et al, (2004) provided evidence respectively for productivity gains and cost reduction as a result of technological improvement for European Union banks. Ekin and Polatoglu, (2001) show that e-banking lowers operational costs while increasing customer retention and satisfaction in the Turkish retail banking sector. Nieto & Hernando, (2007) analysed the Spanish commercial banks over the period 1994-2002 to evaluate the

effect of adoption of a transactional website on financial performance. The outcome suggested that with a lag of one and a half years the increase in banking profitability can be significantly observed via decreases in overhead expenses with respect to IT, marketing and Staff. They also mentioned that e-banking is seen as a delivery channel rather than a substitute to brick and mortar branches.

Greater use of Internet in retail banking will however bring additional risk components to overall risk profile of the banks. The Basel committee has recognized these related risks and has issued Risk Management Principles for Electronic Banking (July 2003). It aims to promote safety and soundness of e-banking activities while preserving the necessary flexibility in implementation due to speed of change in technology.

2.2 Empirical Review

Siam, (2006), examined the impact of e-banking on Jordanian banks and concluded that majority of the banks are providing services on internet through their websites and his findings show that the attention is more to achieving e-banking as satisfying and fulfilling customers' needs. He also concluded that there should be a well-articulated strategy to achieve success and profits in the long run. Onay et al, (2008) conducted a research on Turkish banks concluded that e-banking has a positive impact on the profits of banks. According to their study, "Internet has changed the dimensions of competition in the retail banking sector. It has also provided opportunities for emerging countries to build up their financial intermediation infrastructure. Investing in e-banking is a gradual process. The e-banking variable has had a positive effect on the performance of the banking system in Turkey."

In their research, De Young et al, (2007) analyzed the effect of e-banking on the performance of banks by studying US community banks markets and compared the performance of virtual click and mortar banks with brick and mortar banks. Their research concluded that e-banking improved the profitability of banks hence increasing their revenues. Also, E-banking is largely driven by the factors of minimizing the operating costs and maximizing operating profit, suggests Simpson, (2002). Systematically the financial performance of Internet banks in United States. The study found comparatively lower profits at the Internet-only institutions than the branching banks, caused in part by high labour costs, low fee based revenues and difficulty in generating deposit funding. Consistent with the standard Internet banking model, the results revealed that Internet-only banks tended to grow faster than traditional branching banks. Internet-only banks have access to deeper scale economies than branching banks and because of this; they are likely to become more financially competitive over time as they grow larger (DeYoung, 2001a, 2001b, 2001c and 2005).

2.3 Types of Electronic Banking

For the past few years electronic banking services have emerged; this services can be grouped as follows:

- Telephone banking
- Internet banking (or online banking)
- Mobile phone banking
- Automated / Computerized Teller Banking

2.3.1 Telephone Banking

Telephone banking is one that can be considered as a form of distance or virtual banking, which is basically the delivery of branch financial services via telecommunication devices where the bank's client can perform retail banking transactions by calling a telephone or mobile communication unit, which is linked to an automated system of the bank by utilizing Automated Voice Response (AVR) technology" (Balachandher et al., 2001). It allows clients to phone their financial institutions with instructions to pay certain bills or to transfer funds between accounts.

2.3.2 Internet Banking

Internet banking uses technology and brings the bank closer to the customer. Internet banking refers to systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of bank's website, without the intervention or inconvenience of sending letters, faxes, original signatures and telephone confirmations (Thulani et al, 2009). If one has access to the internet and a computer all they need to do is proceed to their banks website and login. From there they have access to all of their accounts that they have at bank. Transfer funds between accounts with ease. One can also use online banking to see how much money they have in their accounts and can also trace all their transactions.

2.3.3 Mobile Banking (m-banking)

A more current e-banking development is wireless internet applications of banking mostly called m-banking. With the combination of internet and mobile phone, a new service (mobile data service) is enabled and the first such wireless internet commercial transaction was performed by the banking industry (Barnes & Corbitt, 2003).

2.3.4 Automated Teller Machine (ATM) Card

ATM card is made of a plastic having magnetic stripe that hold all the information about the customers such as customer name, account, card number, card limit, concerned bank etc. According to (Rose, 1999), ATMs can be described as computer terminal, having recordkeeping system and cash vault in one unit, permitting customers to enter the bank's book keeping system with a card holding 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. Banks offer different retail banking services through ATM cards to its customers. When a card is slotted into a machine, the magnetic reader of the machine reads the magnetic stripe and verify for processing.

Both the services either Automated or human tellers boost up the production of the bank even during banking hours. These saves the customer time in service delivery and also queuing in bank halls, and they can invest their saved time into other activities. Automatic Teller Machine is a cost-efficient way of yielding for high production than human tellers. The average transactions for ATM per month are 6,400 compared to 4,300 with human tellers (Rose, 1999). Moreover after the banking hours ATMs remain working, which is continual productivity for the banks but a human teller stops working.

3. Methodology

3.1 Research Design

This quantitative study gathered information from the Financial Statements of the bank. The years that were considered were 2008 to 2013. In addition, 150 questionnaires were administered to the interviewees from the selected branches of the Agricultural Development Bank and its customers to solicit information concerning the E-banking.

3.2 Dependent and Independent Variables

The bank's Profitability becomes the Dependent variable for this study. Profitability is the state or condition of yielding a financial profit or gain. It is often measured by price to earnings ratio. For Profitability to qualify as the Dependent variable for this study it needs to be measured and to be manipulated by the Independent variable. On the other hand, Independent variables of this study are the Return on Assets, Return on equity and margin. These independent variables may be the determinants that influence dependent variable, i.e: how effectively these independent variables affect Profitability (Dependent Variable). This study identified these variables that are more dominant than others in assessing the Profitability of E-banking on Banks.

3.3 Return on assets (ROA), Return on equity (ROE) and margin.

These have been used in most studies and we also used them for this study. These measures are the return on assets and the return on equity. Bain, (1956) used the return on equity (ROE) as a measure of profitability on the grounds of data availability although he preferred the return on assets. Other researchers have argued for the use of ROA (Stigler, 1963). Hall and Weiss, (1967) developed an argument in favor of ROE that ROA will differ among industries due to the existence of an optimal borrowing level. ROE tend to be equal among industries, thus providing a better comparison figures. In this study we will use both the ROE and the ROA for measuring profitability as we are working in the same sector.

$ROA = \text{Net Income} / \text{Total Assets}$

$ROE = \text{Net Income} / \text{Total Equity}$

$\text{Margin} = \text{Net interest revenue} / \text{Total Assets}$

Hypothesis:

Hypothesis 1: There is no difference between E-banking and profitability of ADB.

Hypothesis 2: Applying E-banking services have an effect on the profitability ADB.

Instrumentation & limitations

All data from the structured self-administered questionnaires was correctly organized through data coding, cleaning and entering. The software that was used for this is, Statistical Package for Social Sciences (SPSS). Descriptive statistics by percentages, figures and tables was generated using the software to establish relationships. The relevant information was obtained in a standard form using tables, frequencies and percentages to analyze and interpret the information. The results was finally presented in charts and tables. Thus, ensure easy understanding of the analyses.

4. Discussions

4.1 Profile of Respondents

Out of the 150 questionnaires screened and sorted, 74 of the respondents were male representing 49.3% and the remaining 50.7% females which made up of 76 respondents. 80 respondents, representing 53.3%, were between the age group 18-25 years, followed by 26-35 years representing 32.7%, 36-45 years and 46-50 years were 8.7% and 5.3% respectively. Consequently, 43.3% were university graduates, 16.7% and 16% were respectively polytechnic and professional certificate holders. The remaining 39 respondents were made up of 11.3% vocational, 8% SHS, 3.3% informal and 1.3% JHS certificate holders.

4.2 E-banking service subscription

Table 1

E-banking service subscription

		Frequency	Per cent	Valid Per cent	Cumulative Per cent
Valid	Yes	142	94.7	94.7	94.7
	No	8	5.3	5.3	100.0
	Total	150	100.0	100.0	

Source: Field/Survey Data, 2014

When respondents were asked if they had subscribed to any of ABD's E-banking services, 94.7% which were made up of 142 respondents answered yes. Only 8 respondents representing 5.3% said they had not subscribed to any of the E-banking services.

Type accounts operated by respondents

Table 2

Type accounts operated by respondents

	Frequency	Per cent	Valid Per cent	Cumulative Per cent
Savings	92	61.3	61.3	61.3
Current	39	26.0	26.0	87.3
Corporate	8	5.3	5.3	92.7
Foreign Account	11	7.3	7.3	100.0
Total	150	100.0	100.0	

Source: Field/Survey Data, 2014

From the table 4.2, 61.3% of the 150 respondents said they were operating a savings account, 26% had current accounts, followed by foreign account holders which is represented by 7.3% and the 5.3% were running a corporate account.

Length of Respondents Saving with ADB

Data was collected on the respondents' period with which they started banking with Agricultural Development Bank. It showed the years that the respondents have been with the bank, which shows that majority of the respondents were between 1-5 years at 40.7%. Seconded by 5-10 years at 24.7%, followed by 10-15 years which was 17.3%, lastly is the respondent 15-20 years and 20 years and above both had a percentage of 8.7% respectively. This is also represented in the diagrams below.

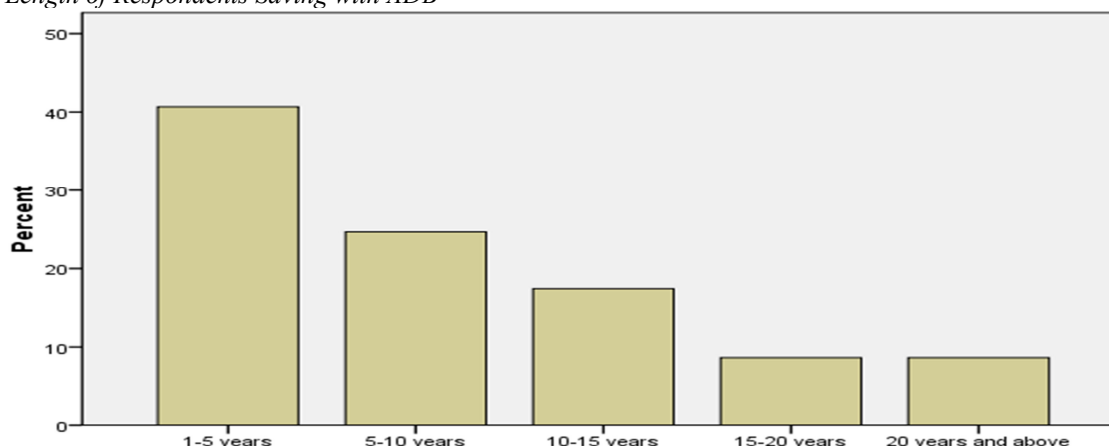
Table 3

Length of Respondents Saving with ADB

		Frequency	Per cent	Valid Per cent	Cumulative Per cent
Valid	1-5 years	61	40.7	40.7	40.7
	5-10 years	37	24.7	24.7	65.3
	10-15 years	26	17.3	17.3	82.7
	15-20 years	13	8.7	8.7	91.3
	20 years and above	13	8.7	8.7	100.0
	Total	150	100.0	100.0	

Source: Field/Survey Data, 2014

Figure 1
 Length of Respondents Saving with ADB

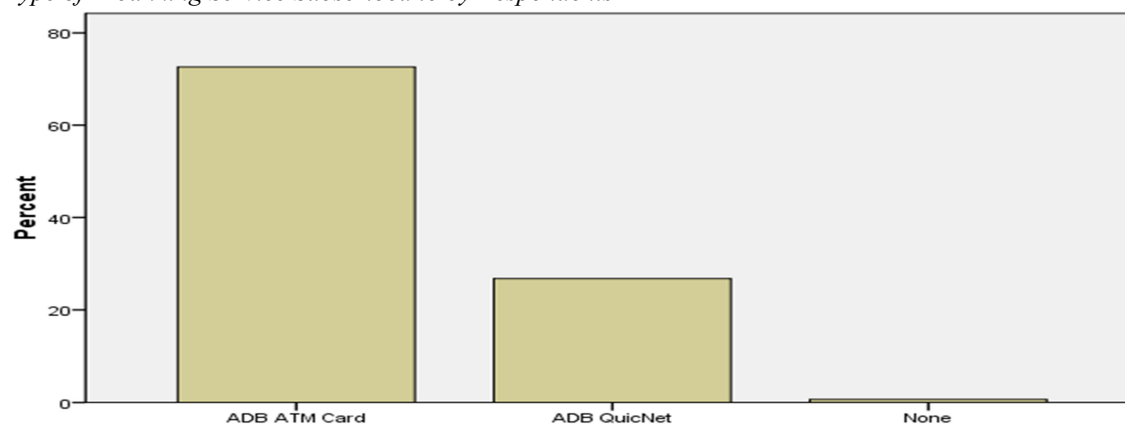


Source: Field/Survey Data, 2014

4.3 Type of E-banking Service Subscribed to by Respondents

Customers were asked which of the E-banking services they had Subscribe, majority of respondents pointed out that they use ADB ATM Cards which signifies 72.7%, seconded by ADB's QuicNet which made 26.7%, 0.7% of the respondent had not subscribed to any of this services provided by the bank. This is illustrated in the figure below.

Figure 2
 Type of E-banking Service Subscribed to by Respondents



4.4 E-banking Service

One very important factor that researchers sought to find out was the how reliable, effective, secure and convenient the E-banking service the provided by the bank was. Customers were quized with a five point likerts scale, ranging from strongly agree to strongly disagree. Custmners were asked questions like; Does the E-banking methods employed by ADB offer quick services, 70.7% of the customers interviewed stated they strongly agreed, 24% said they agreed, 4.7% where not sure on their position on the matter and 1 respondent representing 0.7% strongly disagreed. As to wheather there was sufficient number of ATM booths provided by the bank, 44.7% agreed and believed there was enough booths around, 36.7% strongly agreed to the statement, 6.7% were not sure what to say and 12% of the respondents disagreed. "It is to transfer money from one account to another using E-banking", the number of respondents that strongly agreed to this statement were 58.7%, followed by 25.3% wo agreed, 10.7% were not sure, an equal number of respondents of 4 each representing 2.7% disagreed and strongly disagreed to the statement.

The study also sought to find out form the customers if the bank had provided enough eduction or sensitization to customers about the E-banking services they were providing; out of the 150 customers who were interviewed 33.3% agreed, 27.3% strongly disagreed, 22% were not sure, 14.7% and 2.7% disagreed and strongly disagreed respectiely. Asked if respondents believed the E-banking services were safe and secure a majority of the customers made up of 46% agreed, 28% strongly agreed, 12.7% disgreed, 10.7% making up 16 respondents were not sure and 2.7% strongly disagreed. Customers were again asked if they believed the E-banking services were time saving and 42% agreed it is, 36.7% strongly agreed, 13.3% were not sure. Some the customers disagreed and strongly disagreed, making up 5.3% and 2.7% respectively. Researchers went further

to ask if the customers believed the E-banking services they were being provided were cheap. The table 4.4 below shows how the respondents responded to the statements.

Table 6 E-banking Service

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1. Electronic banking methods employed by Agricultural Development Bank offer quick services.	70.7%	24%	4.7%	0%	0.7%
2. It is easy to transfer money from one account to another account electronically.	58.7%	25.3%	10.7%	2.7%	2.7%
3. There is sufficient number of ATM booths.	36.7%	44.7%	6.7%	12%	0%
4. It is easy to withdraw money from any ATM branch.	48.7%	38%	8%	4.7%	0.7%
5. The customer representative for on-line services respond to your queries on a timely fashion.	42.7%	27.3%	14.7%	12%	3.3%
6. Bank educates or sensitize customers about electronic banking methods available.	27.3%	33.3%	22%	14.7%	2.7%
7. Electronic banking services are available all time (24hours).	34.7%	40%	10%	14.7%	0.7%
8. Electronic banking services are secure.	28%	46%	10.7%	12.7%	2.7%
9. Electronic banking services are time saving.	36.7%	42%	13.3%	5.3%	2.7%
10. Electronic banking methods are cheap.	34%	33.3%	23.3%	9.3%	0%
11. There are a lot of problems associated with electronic banking.	45.3%	38%	16%	0.7%	0%
12. The bank encourages customers to use E-banking services.	44%	33.3%	18.7%	3.3%	0.7%
13. ATMs are located in convenient places.	36.7%	36.7%	23.3%	0.7%	2.7%

Source: Field/Survey Data, 2014

Customer Service Relationship to E-banking

The final part of the interviewing process with customers sought to find out how customers perceived the customer service they were provided in relation to the E-banking service they were using. Respondents were asked to state if the E-banking service had satisfied most if not all the banking needs. Most respondents, 48% of them agreed, 40% strongly agreed, 6% said they not exactly sure, 3.3% strongly disagreed to the statement leaving 2.7% who only disagreed. As to if it was easy to check their account balance using internet banking, more than half of the respondents (50.7%) agreed, 25.3% disagreed, 18.7% stated they were not sure and the remaining 5.3% disagreed entirely. Consequently, they were asked they believed ADB's E-banking is user friendly; those who agreed to the statement comprised of 49.3%, seconded by 36% who strongly agreed, 7.3% stated they were not sure, 6.7% and 0.7% strongly disagreed and disagreed respectively. 46.7% strongly agreed that ADB's electronic facilities are easily accessible, 26.7% agreed, 16.7% said they couldn't be sure, 6.7% disagreed and those who strongly disagreed were 3.3%.

On staff relations with customers, the researchers wanted to know how friendly and welcoming the staff of ADB were. Respondents were posed with the statement, "ABD staff are always friendly and welcoming", 45.3% agreed they were 39.3% strongly agreed, 11.3% were not sure, 2.7% disagreed and 1.3% strongly disagreed. Additionally, respondents were asked if the E-banking facilities were beneficial in to them. Those who agreed were of the majority representing 42.7%, followed by 38.7% who strongly disagreed, 18% were not sure and 0.7 strongly disagreed. The table 4.5 below shows how the respondents responded to the statements.

Table 5: E-banking Service

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1. Electronic Banking has satisfied most of my banking needs.	40%	48%	6%	2.7%	3.3%
2. It is easy to check my account using internet banking.	25.3%	50.7%	18.7%	0%	5.3%
3. I truly enjoy the E-banking service I use.	37.3%	37.3%	20%	1.3%	4%
4. I am very satisfied with the service I get each time I use Electronic Banking.	51.3%	30%	12.7%	6%	0%
5. There is a lot of break downs in ATM machines.	40%	45.3%	10.7%	4%	0%
6. Electronic Fraud is common in Agricultural Development Bank.	35.3%	34%	22%	8%	0.7%
7. I strongly recommend my family and friends to use the Electronic Banking facilities.	46%	41.3%	9.3%	0%	9.3%
8. I have got many benefits by using Electronic Banking facilities.	38.7%	42.7%	18%	0%	0.7%
9. Since Agricultural Development Bank has many customers, it is often characterized by long ques.	38%	37.3%	19.3%	2%	3.3%
10. ADB electronic transactions are faster compared to other banks.	40%	30.7%	20%	9.3%	0%
11. Agricultural Development Bank staffs are always friendly and welcoming.	39.3%	45.3%	11.3%	2.7%	1.3%
12. Electronic Banking is a user friendly service.	36%	49.3%	7.3%	0.7%	6.7%
13. Electronic Banking meets your expectations.	44.7%	32%	11.3%	4%	8%
14. Agricultural Development Bank's electronic facilities are easily accessible.	46.7%	26.7%	16.7%	6.7%	3.3%

Source: Field/Survey Data, 2014

4.5 Profitability Ratios

The primary objective of this research is the assessment the impact of e-banking on Profitability; a study of Agricultural Development Bank (ADB). To determine how E-banking had impacted the profit of the bank, the researchers needed to calculate the Return on Assets, Return on Equity and Net Profit Margin, for 2008 to 2010 when ADB had not yet introduced electronic banking and from 2011 when it was introduced to 2013.

Table 6

Profitability Ratios

YEAR	Return on Assets	Return on Equity	Net Profit Margin
2008	2.39%	13.74%	5.80%
2009	1.72%	10.42%	4.79%
2010	3.30%	23.19%	3.75%
2011	3.62%	24.75%	6.91%
2012	1.85%	13.54%	5.77%
2013	4.97%	28.69%	6.48%

Source: Field/Survey Data, 2014

From the table above it can be observed that from 2008 to 2010 the three years before the introduction of electronic banking, there was a fall in return on assets from 2.39% to 1.72% and then it increased to 3.30%. In the same period return on equity also fell from 13.74% to 10.42% and also increased to 23.19%. Net profit margin fell by 1.01%, which further reduced again the following year by 1.04%. In 2011 when electronic banking was introduced, net profit margin increased sharply from 3.75% to 6.91%. which was a difference of 3.16%, this further came down to 5.77% the following year and again in the 2013 it increased to 6.48%. Also in same period return on equity fell by 11.21% and increased by 15.15% in 2012 and 2013 respectively. The same down-up trend happened to return on equity, falling from 3.62% to 1.85% and went up to 4.97%.

Hypothesis Test

able 4.7

Hypothesis Test

	ROA – ROA1	ROE –ROE1	NP MARGIN – NP MARGIN
Mean	-1.01000	-6.54333	-1.606667E0
Standard Deviation	0.79322	4.04715	0.975004
Standard Error Mean	0.45797	2.33668	0.568919
95% Confidence Interval of the Difference	Lower	-2.98047	-16.59701
	Upper	0.96047	3.51035
t	-2.205	-2.800	-2.854
df	2	2	2
Significant Level	0.158	0.107	0.104

Source: Field/Survey Data, 2014

The table 4.7 above represents the P-Value. The P-Value is the level of marginal significance within a statistical hypothesis test, representing the probability of the occurrence of a given event. It's used as an alternative to rejection points to provide the smallest level of significance at which the null hypothesis (H_0) would be rejected. The smaller the p-value, the stronger the evidence is in favor of the alternative hypothesis (H_1) (Investopedia, 2014). The choice of significance level at which you reject null hypothesis (H_0) is arbitrary. Conventionally the 5% (less than 1 in 20 chance of being wrong), 1% and 0.1% ($P < 0.05, 0.01$ and 0.001) levels have been used (StatsDirect.com).

From the above table, the significant level for ROA is 0.158, which is more than the 0.05 of P-Value. In respect of the ROE, significant level is 0.107 which is greater than the P-Value so we reject the null hypothesis. The significant level of Net Profit Margin, is 0.104 which is more than P-Value, therefore the null hypothesis is rejected. The above computation clearly reveals the undeniable fact that E-banking does have an impact on profitability. Since the introduction of E-banking by the bank in 2011, there has clearly been changes in the all the profitability ratios (Return on Assets, Return on Equity and Net Profit Margin).

5. Summary of findings

After testing the hypothesis by using inferential statistics, it was discovered that E-banking does have an impact on the profitability of the Agricultural Development bank. There was a significant increase in the net profit margin of the bank in the year (2011) E-banking was introduced and the even though it fell in the next year (2012) which wasn't much, it increase again in the third year (2013). The respondents of this study understood E-banking as different from the traditional banking and involved the use of the electronic media and the use of the internet to bank. The respondents were the consumers who use the E-banking services offered by ADB though some customers were not so acquainted with most of the banks E-banking services. Some findings regarding usage and challenges of E-banking services offered by ADB emerged. Educating the general public and customers on the use of E-banking by the bank, is one of the main findings identified. Interaction with the respondents revealed that there were several of problems associated with the E-banking services. Some of the issue customers raised was the fact that ATM machines broke down too often. There was also the issue of inadequate ATM machines. They also indicated the difficulty in accessing funds during certain hours of the day, due to the constant issue of insufficiency of funds. Users of internet banking of mentioned the issue of constant down-time of the servers, which made it difficult to access their accounts at their convenience.

Most respondents were happy with the E-banking services been provided to them. And further strongly believed they would always recommend it to friends and family. They believed the benefits far out way the problems associated with E-banking and that it was much faster and quicker than the traditional ways of banking. Overall, customers indicated it was a very user friendly service and it met their expectations and most of their banking needs. It was revealed it was cheaper and much more time saving to use than coming to the banking hall. One very important finding which was a major concern to respondents was the security issues that came with E-banking. Most respondents were worried about the fraudsters and possibility of their online accounts being hacked. Customers who had not subscribed to any of these E-banking services indicated the above mentioned concerns were the reasons why they were staying away from E-banking. Customers suggested ways to help address some of problems and challenges associated with E-banking. One which was notable was the bank could attract more customers if they intensified education and marketing of benefits of E-banking products and services. It was also pointed out, ADB should have more ATM outlets, regular maintenance of ATM facilities, improve on network connections, increase security features on E-banking services and improve prompt

transaction data that are sent to emails, because some said it takes days after a transaction before they receive the notification.

5.1 Conclusion

The introduction of E-banking has indeed had a positive effect on the profitability of the bank since it was introduced. It has also improved the banks customer relationship by rendering effective services. Network failure from internet connection and the break-down of ATMs are major challenge facing customers using e-banking products from ADB. However, there was a general believe by respondents that extensive education and marketing of e-banking products from the bank could attract more customers to use the service. Electronic Banking has a strong impact on the overall banking performance of Agricultural Development Bank by reducing long queues hence performance is more effective and efficient. In addition, this study showed that customers patronize E-banking products such as ATM more than QuicNet internet banking. This is because they derive certain benefits from the use of these products predominantly time saving, easy access to cash and convenience in the use of the products. And also they believed it was safer and much secure than the internet banking.

In general conclusion the electronic banking has made banking transaction to much easier by bringing services closer to its customers and safer, preventing the carrying huge sums of money.

Recommendations

ADBs E-banking offers several opportunities to customers and they derive benefits from its usage. There were certain limitations in this study and the following recommendations are made:

1. The bank should provide more ATM facilities; these should be placed at vantage locations within the city to reduce distance and time use in access the facility.
2. Agricultural Development Bank must improve and modernize its IT policies by ensuring that Communication Equipment's, Computers and other IT infrastructures to a large extent are managed by qualified staff to ensure that customers can enjoy better E-banking experience.
3. Marketing and education of E-banking services and products should be intensified to attract more customers.
4. The bank should conduct further research to find new E-banking products to attract and to retain their current customers.

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