



**INFLUENCE OF TECHNOLOGY ENABLED
BANKING SERVICES ON THE PERFORMANCE OF COMMERCIAL BANKS: A
CASE STUDY OF COOPERATIVE BANK IN KISII BRANCH, KENYA**

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ABSTRACT

The banking and financial services sector has adopted technology enabled banking services as a means of offering value to customers by providing them with anywhere, anytime and anyway banking as a way of enhancing their performance in terms of profitability, return on assets and return on capital employed. Despite the adoption of these technology enabled self services; customers continued to use traditional methods of banking an indication that they were not satisfied with these new technologies and the performance of banks remained unknown due to stiff competition from micro-financial institutions. The purpose of this study was to determine the influence of technology enabled banking services on the performance of commercial banks. The findings revealed a perfect negative correlation between TEBS and the performance of banks. The study recommended that banks should not heavily invest in TEBS with an anticipation of enhancing performance but rather as a management tool of enhancing decision making and time saver.

Keywords: Banking Services, Technology Enabled

Background Information

Technology banking is a process of using technology such as mobile phones, internet, ATMs etc. in enhancing competitiveness and performance in the banking industry in terms of profitability, return on assets and return on capital employed. In banking, the adoption of technology enabled banking was considered as subordinate to business strategy. But now with so much advancement in technology it has become as important as business strategy. Technology has provided an altogether new way of interacting and providing service to bank customers rather than merely replicating activities of the bank employees (Godse, 2005).

Electronic banking can benefit financial sector development of emerging countries by lowering costs, increasing the breadth and quality and widening access to financial services. Birch and Young (1997) analyzed the consumer side for e-banking and the results showed that consumers basically seek for transactional efficiency, choice for core and non-core banking products and access to competitive prices and returns.

World over, banks continue to adopt technology enabled banking service as a way of increasing customer satisfaction while remaining competitive and relevant in the banking industry. For instance, all banks in India have realized that in order to remain competitive and provide the best services to their customers, they need to have the latest technology in place. Irrespective of their ownership status (public sector or private sector), almost all of them have given maximum importance to technological development and deployment (Ayo, 2010).

In addition, Finland was the first country in the world to take a lead in e-banking. Online banking was launched in Finland in the year 1996. As per the latest results about 84 percent of the Finns use internet today with the usage of internet banking at 67 percent for activities such as bill payments. This is a tremendous leap from only 4 percent of the interviewees using internet for bill payments in the year 1992. The usage of ATMs and Telebanking was found to be coming down according to the Finnish Banking Association survey Spring 2007 report on 'Saving and borrowing in Finland'.

Survey on internet banking in UK by Forrester Research during 2007 showed that about 31 percent of British adults use online banking. This is despite the fact that about two thirds (67%) of the British are regular users of the internet. Only about 46 percent of the internet users in Britain bank online. The main reason why non-users are not going for net banking is because they are happy with the other channels, with 44% of them stating that they are happy to visit

their branch, while others preferred banking through ATMs (33%) and telephones (11%). Security as a reason of non-usage was cited by only 31% of the nonusers.

In Kenya a recent survey indicates that there is steady increase in use of e-banking technologies such as automated teller machine (ATM), mobile and Internet (online) banking, electronic funds transfer, direct bill payments and credit card. ATM banking is one of the earliest and widely adopted retail-banking services in Kenya (Nyangosi et al. 2009) as cited by (Wafula, 2015). However, according to an annual report by Central Bank of Kenya (CBK), its adoption and usage has been surpassed by mobile banking (M-banking) in the last few years (CBK 2008) as cited by (Wafula, 2015). From the aforementioned evidences, it was clear that technology enabled banking services had not been fully adopted by customers despite huge investments by the banks as a way of enhancing competitiveness both in developed and developing countries and Kenya was not exceptional because persuading customers to use new technologies in service encounters is generally more challenging than employees' use of new technologies as far as banks were concerned. In the delivery of the services, since technology can replace a firm's employees, the use of technology is immensely beneficial to the service provider in that it can standardize service delivery, reduce labor costs and expand the options for provisioning of services. On the other hand it could be wastage of resources if not widely accepted by consumers. Thus, it is crucial to design, manage and promote new technologies in order to have the best chance of consumer acceptance in order to boost performance of commercial banks.

The focus of this research was on technologies that customers independently use for banking without any interaction with or assistance from employees and their impact on performance of commercial banks which remained unknown despite of huge investments by banks on them and their great potential to benefit both the customers as well as the banks. The Technology-Enabled Banking Self- Services covered under this study included money transfer services, telegraphic transfer services and mobile money transfer.

Statement of the Problem

Worldwide the way in which banks delivered services had undergone a paradigm shift with the banks increasingly going in for electronic provisioning of services in the self service mode through the various electronic channels. Tough competition and increasing customer expectations had forced all major commercial banks, irrespective of the sectors, to adopt the provision of banking services through ATMs, internet banking, tele banking and mobile banking.

However, their performance remained unknown due to security concerns, costs and time issues, despite huge investments made by the banks in providing the services.

For instance, Kaynak and Harcar (2005) found in their study among the US bank customers that the major reasons for non-usage of online banking were security concerns, satisfaction with branch banking services and inability to talk face-to-face. In addition, Thornton and White (2001) conducted a study in Australia and found that non-users of self-service banking delivery channels including tele-banking exhibited dislike for computers, technology and lacked confidence in using these electronic channels. Therefore, this study was timely to determine the influence of TEBS on performance of commercial banks in Kenya as little research had been conducted on the same in developing country.

General Objectives

To determine the influence of technology enabled banking services on performance of commercial banks in Kisii County, Kenya

Specific Objectives

- i. To establish the extent to which mobile money transfer influences the performance of commercial banks in Kenya.
- ii. To determine the influence of money transfer services on performance of commercial banks in Kenya.
- iii. To find out how telegraphic transfer services influence the performance of commercial banks in Kenya

Research Questions

- i. To what extent did mobile money transfer influenced on the performance of commercial banks in Kenya?
- ii. What was the influence of money transfer services on the performance of commercial banks in Kenya?
- iii. How do telegraphic transfer services influence the performance of commercial banks in Kenya?

Scope of the Study

The study adopted descriptive research design in order to determine the influence of technology enabled banking services on performance of commercial banks: A case of Cooperative Bank in Kisii County, Kenya guided by three specific objectives. The study was carried out between January 2016 and May 2016. The sample size was 93 respondents from the target population of

280 respondents sampled from cooperative bank, Kisii branch. A questionnaire with both open and closed ended questions was the main instrument of data collection which was issued to sampled customers.

LITERATURE REVIEW

Introduction

E-business has been continuously growing as a new industry during the last decade and today is widely understood as business conducted through the internet, not only including buying and selling products, but further extended for also serving customers and collaborating with business partners (Van Hoeck, 2001). The banking industry has followed this trend in recent years, and sometimes called e-banking referring to all banking transactions completing through internet applications.

Technology has gradually been introduced in the provisioning of services, some of the pioneering works in this area have been done by Dabholkar, (1994a and 1999), Parasuram, (1996 & 2000) and Meuter et al. (2000). One of the major benefits of technology is that it enables the customization of service offerings either through the front-office automation like powerful databases or call management and so on (Hart, 1996).

Alternatively customization can be done by the customers themselves while using technology-based self-creative services like ATMs (Mueter et al., 2000). According to a study by Sathye (1999) among Australian banking consumers, security concerns and lack of awareness about internet banking and its benefits are the major reasons for the non-adoption of the internet banking services. Kaynak and Harcar (2005) found in their study among the U. S. bank customers that the major reasons for non-usage of online banking are security concerns, satisfaction with branch banking services and inability to talk face-to-face.

Thornton and White (2001) conducted a study in Australia and found that non-users of self-service banking delivery channels including tele-banking exhibited dislike for computers, technology and lacked confidence in using these electronic channels. The study also concurred with the findings of Moutinho and Meidan (1989), and Marr and Prendergast (1993) pertaining to the fact that one of the reasons for non-adoption of electronic banking channels could be the preference for personal contact or face-to-face contact with the human tellers in the bank.

Smaller community banks, among others, are more interested in the application of e-banking to gain certain competitive edges over their larger counterparts. In addition to previous electronic

banking delivery systems Automated Teller Machines (ATMs) and telephone transaction processing centres, online banking provides banks a new and more efficient electronic delivery tool (Costanzo, 2000). Thus, there was need to determine the influence of TEBS on performance of commercial banks in Kenya.

Theoretical Literature

The study was guided by two theories that seemed to conform to it.

Rogers' Diffusion of Innovation theory

This study used Roger's diffusion of innovation theory to determine the influence of TEBS on performance of commercial banks in Kenya. This theory was proposed by Roger (1995), which identified five key characteristics of innovations: relative advantage (profitability), compatibility, complexity, observability and trialability. This theory conformed to this study, in the sense that, relative advantage being the degree to which an innovation is perceived as being better than the idea, product or service it supersedes, the relative advantages of the electronic banking as compared to traditional branch banking can be taken to include: economic advantages (Lockett and Littler, 1997; Gerrard and Cunningham, 2003), convenience (Marr and Prendergast, 1991; Rugimbana, 1995; Al-Ashban and Burney 2001; Polatoglu and Ekin, 2001; Gerrard and Cunningham, 2003), improved service level or accessibility (Lockett and Littler, 1997; Polatoglu and Ekin, 2001) and elimination of the need to rely on others (Black et al., 2001) in order for the banks to reap huge profits from their investment in technology if only customers adopt these technologies. This theory was crucial for this study because it sought to determine how innovation of technological services in the banking industry enhances performance in terms of profitability, return on assets and return on capital employed through optimal usage of these technologies.

The Decomposed Theory of Planned Behavior

Decomposed theory of planned behaviour was found important in this study which was developed by Taylor and Todd (1995). The theory postulated that the intention to use a certain technology was influenced by attitude, subjective norm and perceived behavioral control. This theory conformed to this study as the adoption of technology enabled banking is driven by the attitude of consumers towards it. Banks can only realize potential benefits from technology if customers can adopt it fully. Hence, banks can realize improved performance in terms of profitability and return on assets and return on capital employed through usage of technology

enabled banking. This study therefore, benefited richly from this theory not only from attitudinal perspective but also from perceived behavioral control.

Research Gaps

According to a study by Sathye (2005) among Australian banking consumers, security concerns and lack of awareness about internet banking are the major reasons for the non-adoption of the internet banking services. Other studies by Kaynak and Harcar (2005) found that among the U. S. bank customers, the major reasons for non-usage of online banking are security concerns, satisfaction with branch banking services and inability to talk face-to-face. In spite of this evidence on adoption of TEBS by customers, banks continued to invest on technology services as cost cutting strategy and yet performances remain unknown. Thus, it was crucial for a study to determine the influence of TEBS on performance of the commercial banks.

Conceptual Framework

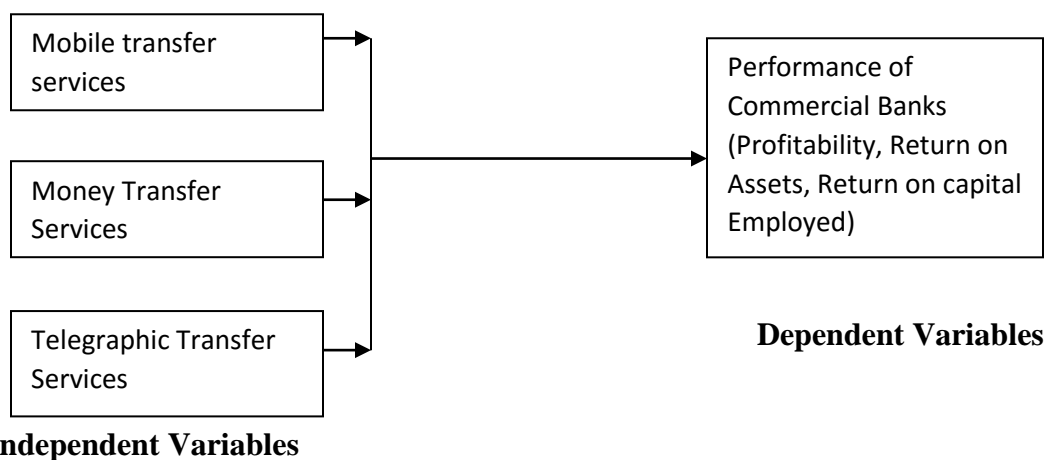


Fig. 1 Conceptual Framework

The researcher conceptualized that, customers are more likely to adopt Technology Enabled Banking Service (TEBS) as anticipated by banks as a way of enhancing performance in terms of profitability, ROA and ROCE. On this framework, Mobile money transfer, Money Transfer Services and Telegraphic Transfer Services were independent variables and Performance of commercial banks was dependent variable. In this study, provision of transactions via technology by banks was believed to be positively correlated with performance of banks in terms of profitability, ROA and ROCE.

Past studies have revealed that prior experience with computers, internet and technology products impacted greatly on adoption and usage of these electronic banking services (Gerrard and Cunningham, 2003). In Kenya, banks have continued to invest heavily in mobile banking

with some opting to offer services via their own network e.g. equitel. This demonstrated clearly that, banks are encouraging TEBS as a competitive strategy.

RESEARCH METHODOLOGY

The study adopted descriptive survey research design. Data was collected by use of open and closed ended questions on well-structured questionnaires based on objectives of the study on 93 respondents from a population of 280 rural based consumers and bank employees. Data collected was analysed using descriptive statistics which involves correlation analysis to determine the degree of association between dependent and independent variables.

RESULTS AND DISCUSSION

Response Rates

In this study, three factors namely; mobile money transfer, money transfer services and telegraphic transfer services were studied on how they affect performance of commercial banks with special reference to cooperative bank. The presentation of findings was done through descriptive statistics using frequencies and percentages and inferential statistics using correlational analysis. It is worthy to note that, all 93 respondents sampled representing 100% returned questionnaire.

Mobile Money Transfer and Performance of Banks

On the aspect of mobile money transfer, all the 93 respondents who participated in the study representing 100% were of the opinion that the bank had adopted technology enabled banking services for competitiveness. However, only 60 customers out of 80 customers agreed that they had adopted mobile money transfer representing 75% against 20 customers who had not adopted it representing 25%.

The study established the elements relating to mobile money transfer in the banking sector: the responses obtained from the field are in table 1 below.

Table 1 Mobile Money Transfer and Performance of Banks

Aspect	Yes (%)	undecided	No (%)
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Mobile services are customer friendly and convenient	75 (80.6)	08(08.6)	10 (10.8)
Mobile services are cost effective to consumers	60 (64.5)	08(08.6)	25 (26.9)
Mobile services are reliable	40 (43.0)	03(03.2)	50 (53.8)
I feel confident of using Mobile services for conducting transactions	20 (21.5)	13(10.8)	60 (67.7)
I trust the traditional banking methods more.	80 (86.0)	01(01.1)	12 (12.9)

The findings revealed that, mobile services were perceived to be friendly and convenient. This was after 75 respondents representing 80.6% attested to this fact which was attributed to the fact that, customers were able to access their accounts from any location at any time against 10 respondents representing 10.8% who were of contrary opinion which was attributed to security concern.

These results were in agreement to Kaynak and Harcar (2005) who found in his study that, among the US bank customers, the major reasons for non-usage of online banking were security concerns, satisfaction with branch banking services and inability to talk face-to-face

Cost effectiveness of mobile services to consumers was another aspect that was studied. The study established that mobile money transfer was more cost effective than the manual face to face money transactions as 60 respondents representing 64.5% were of this opinion as opposed to 25 respondents who were of contrary opinion representing 26.9%. This was attributed to reduction costs associated with mobility from one's place to the bank location and time saving.

These findings were in agreement to Kozak (2005) who investigated the influence of the ICT evolution on the profit and cost effectiveness of the banking industry within the period of 1992-2003 and established a significant relationship between the executed ICT, productivity and cost savings.

In addition, traditional banking was more trusted than mobile money transfer for fear of fraud where customers receive deceptive messages from fraudsters. This was witnessed when 80 respondents representing 86% attested to this fact representing against 12 who disagreed representing 12.9%.

These findings were in agreement to a study by Sathye (2005) among Australian banking consumers on usage of TEBS who established that, security concerns and lack of awareness about internet banking were the major reasons for the non-adoption of the internet banking services.

The researcher undertook an analysis to determine a relationship between mobile money transfer and performance of banks and the data was tabulated in table 2.

Table 2 Correlation Between Mobile Money Transfer and Performance Of Banks

	Yes	No
Mobile services are customer friendly and convenient	75	10
Mobile services are cost effective to consumers	60	25
Mobile services are reliable	40	50
I feel confident of using Mobile services for conducting Transactions	20	60
I trust the traditional banking methods more.	80	12

The data was subjected to a statistical test (a correlational analysis) to determine the degree and nature of association between mobile money transfer and performance. The correlation coefficient was -0.985 at $\alpha=0.05$ significance level. There was a perfect negative correlation between mobile money transfer and performance. This implied that investments in TEBS does not always lead to improved performance in terms of profitability and return in assets as banks are regulated by Central bank of Kenya.

The findings concurred to Hitt and Brynjolfsson (1996) who established a significant negative correlation between IT spending and financial/operating performance though there was a positive impact of IT on output and consumer surplus. Similarly, Barua *et al.* (1995) found that IT investment affects intermediate measures (such as inventory turnover) but found no evidence on the benefits extended to performance as measured by return on assets (ROA).

Money Transfer Services and Performance of Banks

The study studied on internet usage among customers as a banking service. The study established that customers do not have access to the internet as 70 respondents attested to this fact representing 75.3% which was attributed to unavailability of computer services in rural areas and complexities associated with internet usage against 10 who agreed to his aspect representing 10.8% and whom the researcher deemed to be those working in the bank mainly customer care and management.

The study established the elements relating to money transfer services in the banking sector; the responses obtained from the field are in table 3

Table 3 Money Transfer Services on Performance of Banks

Aspect	Yes (%)	undecided	No (%)
I have a well developed technological ability	10 (10.5)	08(8.9)	75 (80.6)
Electronic banking channels gives me more control over my banking transactions	60 (64.5)	03(3.3)	30 (32.3)
Other people come to me for advice on electronic Banking	75 (80.6)	03(3.3)	15 (16.1)
I do not consider it safe to do any kind of financial transaction online	73 (78.5)	00(0)	20 (21.5)
I am worried that the information sent over internet will be seen by others	80 (86.0)	03(3.5)	10 (10.5)

From table 3, it is evident that most people lack technological ability in banking as 75 respondents attested to this fact representing 80.6% against 10 respondents representing 10.5% and these were deemed to be mainly employees of the bank. This was attributed to lack of accessibility to computers and costs associated to internet usage. It is also worthy to note that, most customers relied on others for help and advice and thus considered unsecure means of banking as 75 respondents representing 80.6% agreed that they relied on others during electronic banking as opposed to 15 respondents representing 16.1% who were of contrary opinion. This was attributed to inadequate training, low mass sensitization and insensitivity to the needs of customers by the banks.

It is also worthy to note that none of the respondents issued with the questionnaire, was undecided as to whether financial transaction online is safe or unsafe. This implied that there were limited cases of insecurity on online banking or they don't use it altogether.

The study findings were in agreement to a survey on internet banking in U. K. by Forrester Research during 2007 which showed that about 31 percent of British adults used online banking with the main reason why non-users were not going for net banking being happy with the other channels, with 44% of them stating that they were happy to visit their branch, while others preferred banking through ATMs (33%) and telephones (11%) and security as a reason of non-usage cited by 31% of the nonusers.

The researcher undertook an analysis to determine a relationship between money transfer services and performance and the data was tabulated in table 4.

Table 4 Correlation between Money Transfer Services and Performance of Banks

	Yes	No
I have a well developed technological ability	10	75
Electronic banking channels gives me more control over my banking transactions	60	30
Other people come to me for advice on electronic banking	75	15
I do not consider it safe to do any kind of financial transaction online	73	20
I am worried that the information sent over internet will be seen by others	80	10

The data was subjected to a statistical test (a correlational analysis) to determine the degree and nature of association between money transfer services and performance. The correlation coefficient was -0.9985 at $\alpha=0.05$ significance level. There was a perfect negative correlation between money transfer services and performance. This implied that investments in TEBS do not always lead to improved performance.

The findings concurred to Yunus (2011), who established that technology innovation influenced the competitiveness and profitability of all Nigerian banks in networking, service delivery, profitability and customers' responses though it was short lived because soon after Nigerian banks witnessed severe downturn in their profit and many of them collapsed.

Telegraphic Transfer Services and Performance of Banks

The study established the elements relating to telegraphic transfer services in the banking sector; the responses obtained from the field are in table 5

Table 5 Telegraphic Transfer Services and Performance of Banks

Aspect	Yes (%)	undecided	No (%)
My bank adequately explains the service charges associated with each	05(5.4)	00(0)	88(94.6)
The electronic banking services of your bank are having acceptable fees	33(35.5)	14(7.5)	53(57.0)
My bank follows the most advanced technology	85(91.4)	92(1.1)	7(7.5)

It is worth noting that, banks had adopted most advanced technology as a means of enhancing competitiveness through increased revenue as 85 respondents representing 91.4 responded yes to this aspect as opposed to 7 respondents representing 7.5% who were with a different opinion. This was attributed to increased competition from mobile communication service providers venturing into the banking industry e.g. equitel.

Also to note is the fact that, banks do not adequately explain service charges to their customers to enhance the adoption of TEBS by customers. This was underscored as 88 respondents representing 94.6% against 5 respondents representing 5.4%. On charges levied, respondents were partly satisfied as they appeared to be competitive as those who were contented were 33 representing 35.5% against 53 respondents representing 57% who disagreed. This was attributed to heavy taxation by the government which compels banks to charge fees that covers all costs.

Table 6 Correlation between Telegraphic Transfer Services and Performance of Banks

	Yes	No
My bank adequately explains the service charges		
Associated with each	05	88
The electronic banking services of your bank are		
having acceptable fees	33	53
My bank follows the most advanced technology	85	7

The data was subjected to a statistical test (a correlational analysis) to determine the degree and nature of association between telegraphic transfer services and performance. The correlation coefficient was -0.9957 at $\alpha=0.05$ significance level. There was a perfect negative correlation between telegraphic transfer services and performance. This implied that investments in TEBS do not always lead to improved profitability and ROA.

These findings were similar to those of Thornton and White (2001) who conducted a study in Australia and found that non-users of self-service banking delivery channels including tele-banking exhibited dislike for computers, technology and lacked confidence in using these electronic channels.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary of findings

The heavy investments in information technology and communication networking by banks and other financial institutions had brought revolution in their functioning through enhanced speed of bank services delivery, enhanced management decision making and time saving. This study was meant to establish the influence of TEBS on the performance of banks and presented the summary of the findings along major variables; mobile money transfer, money transfer services and telegraphic transfer services.

Mobile Money Transfer

The correlation coefficient between mobile money transfer and performance was -0.985 at $\alpha=0.05$ significance level. This was a perfect negative correlation between mobile money transfer and performance. This implied that investments in TEBS do not always lead to improved performance in terms of profitability and return in assets as banks are regulated by Central bank of Kenya.

Money Transfer Services

The correlation coefficient between money transfer services and performance was -0.9985 at $\alpha=0.05$ significance level. This is a perfect negative correlation implying that investments in money transfer services do not lead to improved performance.

Telegraphic Transfer Services

The correlation coefficient between telegraphic transfer services and performance was -0.9957 at $\alpha=0.05$ significance level. This was a perfect negative correlation between telegraphic transfer services and performance. This implied that investments in TEBS do not always lead to improved profitability and ROA.

Conclusion

The study findings revealed a negative correlation among the variables showing that investments and usage in TEBS do not enhance competitiveness and profitability of banks. However, they reduce operational costs associated with banking. Hence, banks should look at other factors that enhance performance like communication and friendly relationships between them and customers.

On mobile money transfer and performance of banks, the study established a negative correlation of -0.985, suggesting that despite heavy investments by banks on TEBS, adoption rate was slow and hence the banking were not achieving their anticipated performance.

In addition, on the aspect of money transfer services and performance of banks, the relationship was negative with a correlation coefficient of -0.9985 which implied that investments in technology enabled services do not enhance performance of banks.

On the other hand, telegraphic transfer services had a negative correlation with performance of banks with a correlation coefficient of -0.9957 showing that, investments in TEBS do not always lead to improved profitability, ROA and ROCE.

Recommendations

The study made the following recommendations: Firstly, the service provider should tailor their services in mobile money transfer in such way that there is a positive correlation between mobile money transfer and performance in terms of profitability to enhance their competitiveness through use of affordable and simple technologies which guarantee security, besides establishing their own communication lines as a means of ensuring that transactions are affordable.

On money transfer services, the study recommends that the service providers should establish many branches to ensure that customers interact with their agents face to face and the network should be prompt to enhance reliability.

On telegraphic transfer services, the correlation coefficient too was negative of -0.9957, which was attributed to the fact that, non-users disliked technology and lacked confidence in using technological channels. The study therefore recommends that banks should offer training to customers to ensure that they do not encounter difficulties when using the services. In addition, the brochures be designed in both official national languages and in serious situation it be done in vernacular languages for easy understanding to enhance usage and hence promote confidentiality in using TEBS.

Areas for Further Study

The study adopted correlational analysis to determine the degree and nature of association between variables. A study is necessary to establish the perceived challenges facing technology enabled banking services customers in rural areas. The study looked at only three factors and their influence on performance. But, there are other factors influencing performance. Hence, the study recommends a study on how organizational IT infrastructure influences performance. A

replica of the study should also be carried out within the context of another field other than banking industry for comparative purpose.

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