International Journal of Economics, Commerce and Management Vol. V, Issue 9, September 2017 United Kingdom http://ijecm.co.uk/ ISSN 2348 0386

# INTEGRATION OF TECHNOLOGICAL SYSTEMS AND EMPLOYEE PERFORMANCE IN THE BANKING SECTOR IN KENYA: A SURVEY OF SELECTED COMMERCIAL BANKS IN NORTH RIFT, KENYA

Faith Lentoimaga

Master of Human Resource Development, Moi University, Kenya faith.lentoimaga@gmail.com

L. S. Mulongo

Moi University, Kenya

# Peter Isaboke Omboto

Moi University, Kenya

## Abstract

The banking industry is undergoing tremendous transformation regarding the use of technological systems for provision of competitive products and services to customers. This study examined the effects of technological systems use on employee performance, in selected commercial banks in the North Rift, Kenya. The study objectives were: to explore the process of technological systems integration, to examine the effect of technological systems use on employee performance, to establish the challenges of technological systems use and to determine the strategies to enhance use of technological systems and employee performance among selected commercial banks in the North Rift. A descriptive survey design was used. The target population was 283 employees involved in the use of technology from selected commercial banks in the North Rift. Stratified random sampling and purposive sampling techniques were used to select a sample of 170 employees. Data collection tools included a semi structured questionnaire and an interview. Collected data was analyzed using both descriptive and inferential statistics. The findings of the study indicated that all banks embraced use of internet and cell-phone banking services. Majority of the respondents reported that using technological systems require mental efforts. It can also be concluded that there is low



involvement of employees in the planning and integration process of technology, internet and mobile banking were popular and that website related technology services were least utilized. Therefore, it is recommended that web related technology should be expanded and mobilized, banks should be sensitive to employee through involvement in the planning and integration process through training, piloting and feedback to enable them perform better.

Keywords: Systems Development, Employee Participation, Employee training, Piloting, Systems appraisal, Employee performance

## INTRODUCTION

Technology is the result of men's learned and acquired knowledge or his technical skills regarding how to do things well (Khalil, 2000). Technology acquisition, use and maintenance are the major determining factors for survival in all organizations. It is its lifeblood, but it could only occur through human intervention. Quinn (1969) argued that it is incumbent on any organisation to monitor technological changes, train and motivate employees to innovate, because technology covers every aspect of all organizations. Kubbr (1977) observed that new technology, whenever introduced in any organization, changes all aspects of its operations.

According to Dauda, (2010), changes in technology have really affected most industries worldwide. Globalization, which dominates the world today, was influenced mainly by communication technology. Digital technology integrates the world and it "allows organizations of communication" manage their channels (Negrophone, 2000). Broadband to telecommunication has turned the telephone network from being primarily a medium for voice communication into multimedia network, which carries video and other image-based services, high-speed data communications and other computer-to-computer traffic, as well as voice and text communication. It was mostly these that allowed globalisation to develop, thrive and blossom.

Technological innovation integrates employees and technology. The desire to find improved and better ways to produce large quantity of quality goods and services to meet customer needs often make scientists and engineers to be creative and innovative (Dauda, 2010), The starting point of technological development, changes and innovations is always people. It is the people (employees) who create, initiate, use and manage ideas that are the bases and directions of technology. Most developing nations of Africa, Asia and Latin America could not harness their natural, material and employees for socio-economic development as a result of their inability to utilise science and technology. This is not unconnected with the failure



of their governments to encourage technology innovation and/or lack of commitment of their people to innovate. But the advanced countries of Europe, America, Russia and few emerging countries such as China have succeeded through the efficient application of science and technology in transforming their material and employees into goods and services and dominate the world market. The continuous reductions of the work force as technology improves make employees influence and activities to attract less attention of owners and management. They assume that employee inputs have less effect on overall production process.

Technology innovation encompasses the changes in technology that can significantly improve the organization performance, improve its process and promote its service delivery system beyond the state of the art to produce quality goods and services (Taylor, 1958). Shrivastava (1984) regards technology innovation as changes in technology that significantly improve the performance of organization. Organizations can cope with the changing condition in its environment through technology innovation. Organizations should employ different methods to promote and use technology to promote its adaptability and management to the ever changing conditions and environment in which it operates. Human beings take the most active part, as they are involved in producing and using technology and also in using and purchasing product and services that are produced by organizations through the use of technology.

In recent years, most banks in developing economies, especially in sub-Saharan countries, have sought to make their services convenient through electronic banking. The idea is to make work easy and increase reaction time among bank employees while at the same time satisfying customers' service needs. By viewing an organization as a social system with an economic purpose, the ways in which it uses its knowledge and other resources to achieve that economic purpose represent its strategies (Haberberg & Rieple, 2001). Haberberg & Rieple (2001) defined strategy as the set of actions through which an organization, by accident or design, develops resources and uses them to deliver services or products in a way which its users find valuable, while meeting the financial and other objectives and constraints imposed by key stakeholders. Haberberg & Rieple (2001) argued that successful strategies give an organization some properties that are unique and the means for renewing its competitive advantage as the business environment changes.

Information Technology affects financial institutions by easing enquiry, saving time, and improving service delivery. 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.

A key organizational factor in the organization and strategic management literature is the notion of firm resources (Wernerfelt, 1984). The resource-based view argues that performance depends on internal resources and knowledge, and that resourceful firms will outperform less well-endowed organizations. Thus, employee IT knowledge is a crucial resource that will go along with organizational performance. If employee IT knowledge is inadequate, it is unlikely that the organization will realize the perceived impact of IT on the customers.

No meaningful progress can take place in any society without the development of the creative and innovative ability of her people. The creative capacity of human beings is at the heart of development process. Technological innovation and employee development and motivation are essential ingredients of productivity. It is necessary for an organization to continuously embark on technological innovation and develop its personnel to cope with the emerging technologies. Any organization that intends to remain viable and competitive in the present day global economy has no other choice than to be innovative and invest heavily on employee development.

According to Dauda and Akingbade (2011), technology also influences living conditions of individual and groups in organizations and nations and the relationship between them. Technology is prone to change, and the state of technology have direct link to the relationship between the employer and employee. Technology, labour and capital are interconnected. Some technology use a lot of labour and some use more of other equipment or capital. Investors and managers based their selection or the quantity of both to their price and prefer or choose the one with lesser price to maximize their profit.

The choice is explicit but rapid and radical change and regulatory control may create problem that make it sometimes difficult to make a rational choice. The choice and the preference place on capital at the expense of employees may reduce employee co-operation, lowered their morale, productivity, create conflict that may reduce organizational profit (Dauda and Akingbade, 2011). Employee performance is intimately linked to technological change and technological innovation. Technological change could be effectively managed through employee joint approach.

In the Kenyan's banking industry due to competition, IT investments and adoption has become a very important component in achieving organizational objectives. In recent past therefore, electronic and communications technologies have been used extensively in banking for many years to advance agenda of banks. The earliest forms of electronic and communications technologies used by the banks mainly office automation devices.



Telephones, telex and facsimile were employed to speed up and make more efficient, the process of serving clients (Faith, 2011).

Faith (2011) further notes that with coming of new partners in banking industry, competition intensified and personal computer (PC) got proletarian, Kenyan banks began to use them in back-office operations and later tellers used them to service clients. The advancements in computer technology have led to application and adoption new IT investments that have changed the banking landscapes in the country. She observes that the most revolutionary electronic innovation in Kenya has been the ATM. In Uganda, banks with ATM offerings have them networked and this has increased their utility to customers. The ATM has been the most successful delivery medium for consumer banking in this county. Other technological innovations in banking sector include internet banking, telephone banking, sector include internet banking, telephone banking, electronic funds transfer, among others.

#### Statement of the Problem

The outcome of Kenya's vision 2030 is to produce annual economic growth rates of 10% by targeting sectors of tourism, agriculture, manufacturing, trade, information technology and financial services (Omwonsa, 2009). Many industries embark on improving customer satisfaction by getting the latest technological systems. They believe that acquisition of latest technology will improve operating practices, guality and guantity of their goods and services. Individuals can innovate and achieve great technological breakthrough but the complexities of modern technology require effective combination of different innovations based on different aspects of technology (Dauda and Akingbade, 2011).

Managers need to provide enabling work environment that enhances collaboration and team-networking to encourage employee initiative to innovate for organisational survival and competitiveness. Adoption process of technological systems in Kenyan Commercial banks is mostly top-down with minimal employee involvement. Traditionally, employees play a centre role especially in strengthening bank-customer relationship that highly contributes to overall bank performance. Although technological system innovations are expected to enhance employee performance, this has not been instant as it is assumed. The banking industry is undergoing tremendous transformation as regards use of technological systems for provision of competitive products and services to customers. It is expected that by using technology employees will be able to perform more tasks within a shorter period. Based on the way these systems are planned, introduced and implemented, employees can either embrace them productively or otherwise. Impact assessment of technology in the banking sector has emphasized customer satisfaction levels and bank performance. There is no available literature



on technological systems integration and employee performance in Kenyan banks. This study will therefore examine the effect of technological systems integration on employee performance, a survey of selected commercial banks in the North Rift, Kenya. This study was guided by the general and specific objectives.

The general objective of the study was to establish the effect of technological systems integration on employee performance in selected commercial banks in the North Rift, Kenya. The specific objectives of the study were:

- i) To assess the technological systems being applied among selected commercial banks in the North Rift.
- ii) To examine the effect of technological systems use on employee performance among selected commercial banks in the North Rift.
- iii) To establish the challenges of technological systems use among employees of selected commercial banks in the North Rift.
- iv) To explore the strategies to enhance employee use of technological systems among selected commercial banks in the North Rift.

## LITERATURE REVIEW

## **Theoretical Framework**

The study employed the concept of identity theory. The starting point of technological development, changes and innovations is always people. It is the people who create, initiate, use and manage ideas that are the bases and directions of technology. Identity theory provides a way of assessing individual relations to organizational objectives and national goals and enables us to understand human resource inspiration and readiness for technology innovation. The motivation the individual receives determines the extent of its identity and his readiness to innovate for organizational and national development. This theory to Bennis (1969) provides strategies intended to change beliefs, attitudes, values and structure of an organisation so that they can better adapt to new technologies, market challenges and changes. It can also be used to plan intervention in organisation process to increase organisation effectiveness and health.

Both (Bechard, 1969) and later on Bolle De Bal (1992) demonstrated the relationship between organisational development and managerial effectiveness. Organisational efficiency requires that somebody in the strategic position should feel the need for innovation and change. These include the need to: change managerial strategy; make organisations more consistent with both individual needs and the changing needs of the environment; change structure and roles; change the motivation of the workforce; make better planning; improve inter-groups collaborations; and adaptation to new environment. Organisations in the competitive global



economy require managers that can combine neatly organization and individual interests for the common good. Today's workers want to participate in drawing up of management plans, in decision making and want to be recognized and appreciated for their contributions. Continuous organizational improvement require managers and team leaders that are capable of bringing out new ideas and techniques from their subordinates and can create environment in which new thinking is encouraged and welcomed.

Drucker (1985) argues that innovation comprises of both hard work and inspiration. Managers should not be rigid in managing their employees but allow them to use their initiatives. Severe and inflexible rules can be easily circumvented. High labour turnover in the Nigerian Telecommunications industry in vital positions and sections, most especially the engineers by the time this research was conducted was not because of poor salary but to the mismanagement of their skills and lack of recognition for their innovation. (Dauda, 1997). Top management should establish the right roles and processes, set clear goals and relevant measures and review progress at every stage. Innovation experience and opportunities may occur through unexpected occurrence, ingenuities, process needs, industry and market changes, demographic changes, changes in perception and new knowledge. All these when properly understood and managed promote technology innovation.

#### **Conceptual Framework**

The conceptual framework illustrates relationship between the independent variables: system integration (Systems Development and Employee Participation, Preparation for systems Change(Employee training), Piloting and Systems appraisal) and their effect on the independent variable: Employee Performance.

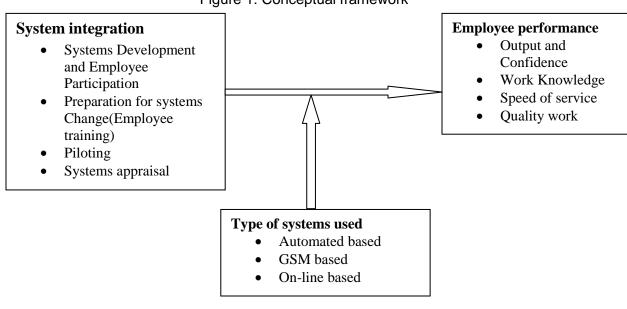


Figure 1: Conceptual framework

## Knowledge Gap

The literature reviewed and previous studies both suggest that errors are committed by employees with serious financial implications on the banks. ICT could also be manipulated to commit fraud. Fraudulent practices such as money laundering, illegal withdrawal, and all other forms of manipulation could take place. ICT is capital intensive and depend on constant power supply which is epileptic in Nigeria. Large amount of money is presently being spent by most banks on power supply and electricity generation. ICT has also led to reduction in the number of employees as most bank transactions have been taken over by the computer (ibid).

# **RESEARCH METHODOLOGY**

This research problem was studied through the use of descriptive survey research design. The study involved an in-depth investigation on the effect of technological adoption and employee performance among selected commercial banks in North Rift. A descriptive survey research design was suitable for collecting facts, views, opinions, attitudes and suggestions from the respondents. A descriptive survey research design is suitable for collecting facts, views, opinions, attitudes and suggestions from the respondents. The target population of the study was 277 employees derived from the selected commercial banks operating in the North Rift as shown in table 1. The study used stratified sampling to group employees (each bank forms a strata). Simple random sampling technique was also used to select employees from each bank proportionately. Purposive sampling was also used to select one key informant who is in top management or head of departments from participating banks thus a total of 164 employees and 6 key informants will constituted the sample. Thus a sample 170 respondents (Table 1).

Bank	Population size	Sample size
Kenya Commercial	36	21
Co-operative	50	30
Standard	25	15
Barclays	61	36
National	60	35
Equity	45	27
Key informants	6	6
TOTAL	283	170

A semi-structured questionnaire was used to collect data from the respondents. This study also used structured interview. Interview schedule made it possible to obtain data required to meet specific objectives of the study. The validity of research instrument was based face validity; the



extent to which the instrument measured what is intended to measure. The researcher used face validity by discussing the item in the research instruments with the managers. The advice they gave contributed to the validity of the research instrument to establish the validity of research instruments. The researcher then administered questionnaires to a section of the respondents in order to check the variations in the responses. To establish the reliability of the research instruments, pre-testing during piloting was done on two non study banks. This is because the method is more accurate as it determines the stability of the instrument. Feedback obtained from the pilot study will assist the researcher in revising the instrument of data collection to ensure that it covers the objectives of the study. The data collected was both qualitative and quantitative. The raw data was then categorized through coding and tabulation. Editing was also done to improve the quality of the data coding. Data was summarized and presented using percentages, means and standard deviation (SD). Subsequent analysis involved assessing the relationship between technology integration and employee performance, for ethical consideration the researcher assured the respondents of the confidentiality of the information they were provided; that it will only be utilized for the purpose of data analysis.

### **ANALYSIS AND FINDINGS**

Inferential statistics was used to discuss the findings of the study, the study the study targeted a sample size of 170 respondents from which 152 filled in and returned the questionnaires making a response rate of 95.9%. This response rate was satisfactory to make conclusions for the study as it acted as a representative since according to Mugenda and Mugenda (1999), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. Based on the assertion, the response rate was excellent.

#### Systems development and employee involvement in technological integration process

Reason	Disagree (%)	Neutral (%)	Agree (%)	Mean (Sd)
Attracting and engaging customers	18(11.1)	25(15.3)	120(73.6)	4.0(1.1)
Managing risks	13(8)	53(32.5)	97(59.5)	3.6(0.8)
Transforming business operations	3(1.8)	44(27)	116(71.2)	3.8(0.7)
Optimizing operational efficiency	11(6.7)	53(32.5)	99(60.7)	3.7(0.8)
Simplifying IT infrastructure	15(9.2)	96(58.9)	52(31.8)	3.3(0.8)
Enhance employee performance	39(23.9)	22(13.5)	102(62.5)	3.5(1.1)

#### Table 2: Reasons for adopting or improved technology system infrastructure



The respondents were asked to give their views on why the banks have adopted or improved technology system infrastructure. Majority reported Attracting and engaging customers and transforming business operations. On average they agreed that it was for attracting and engaging customers, managing risks, transforming business operations, optimizing operational efficiency, simplifying IT infrastructure and enhancing employee performance (Mean>3.5) as indicated in table 2. These agree with earlier research showing that a positive correlation exists between the level of implemented IT and both profitability and cost savings, (Berger, 2003; Tam, 1998).

# Technological systems integrated in the bank

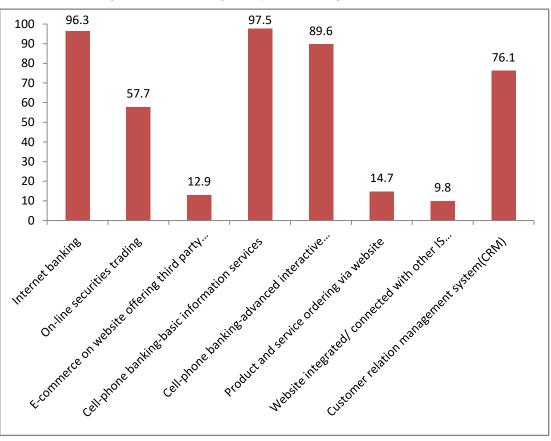


Figure 2: Technological systems integrated in the bank

This has been possible with the introduction of customer retention management systems (CRM). However website integrated systems has not been successfully used. This type of system is a new innovation and though adopted by banks, has not improved the performance of bank employees. This means that employees find it difficult adjusting to new technologies and



this tend to lower their performance output. This agree with earlier research that proposes technological innovation such as the use of computer automation and electronic banking influences speed of bank services delivery, enhanced management decision making and saving time (Alu, 2002). Information and Communication Technology has provided self-service facilities (automated customer service machines) from where prospective bank customers can complete their account opening documents direct online. It assists customers to validate their account numbers and receive instruction on when and how to receive their cheque books, credit and debit cards (Agboola, 2001).

## Employee involvement in technological integration process

Involvement	Disagree	Neutral	Agree	Mean(SD)
Participated in systems development	107(66.5)	26(16.1)	28(17.3)	2.2(1.1)
Involved in planning of systems change action	125(80.1)	13(8.3)	18(11.5)	2.1(0.9)
Participated in training programs for system use	22(14.1)	37(23.7)	97(62.2)	3.4(0.8)
Participated in piloting systems at branch	61(39.1)	22(14.1)	73(46.8)	3.0(1.2)
Asked for feedback after piloting	94(58.4)	28(17.4)	39(24.2)	2.6(1.2)
All employees participate in system	70(43.7)	38(23.8)	52(32.5)	2.9(1.1)
implementation				

Table 3: Employee involvement in technological integration process

Majority of the respondents disagreed to having participated in systems development and involvement in planning of systems change action) though more than half agreed to participated in training programs for system use. On average, they disagreed to Participated in systems development and to be involved in planning of systems change action and were neutral on Participating in piloting systems at branch and that all employees participate in system implementation as indicated in table 3.

Employee participation in technological system development is very important for successful adoption and use. Involving employees' means that employee needs are evaluated and technology is expected to be integrated to address this need of the employees.

An overwhelming majority of the employees reported that they were not involved in the planning of the systems change action. Adoption process should be well planned to give employees enough time to adjust so as to be effective in their tasks. Although training was done majority were not agreeing to this response implying that they were not confident of the outcome of training (mean=3.4)

For successful implementation of new technology systems, it's imperative that a pilot is done at branch level and feed from the pilot used to improve on the integration process. As



observed from the findings banks do not get views of all employees on pilot tests. As such a few employees participate in system implementation. A new system not well integrated could therefore interfere with employee performance as opposed to the expected benefits.

Employees are the life wire of these banks. Employee is the most potent and central, contributing significantly to corporate bottom line and competitiveness (Inyang, 2010). The banks therefore gain sustained competitive advantage through people, the banks workforce.

# **Technology use and Employee Performance**

Majority of the respondents agreed that newer technological systems provide opportunities to learn new skills while that newer technological systems improve working conditions as indicated in table 4.

View	Agree (%)	Undecided (%)	Disagree (%)
Newer technological systems improve working conditions	88(59.1)	46(30.9)	15(10.1)
Newer technological systems provide opportunities to learn new skills	112(75.2)	28(18.8)	9(6)
Newer technological systems provide opportunities to get promoted to higher level, higher paying jobs	22(14.8)	72(48.3)	55(36.9)
Use of new technological systems has increased performance of bank employees leading to more return on investment	71(48)	54(36.5)	23(15.5)

Table 4. Effect	of technological	system	integration o	n emplovee	performance
	of technological	System	integration o	n employee	penomance

The respondents were requested to indicate the effect of technological system adoption on employee performance. More than half of the respondents agreed that never technological system improve working conditions while one third were undecided. Majority of the respondents agreed that new technological systems provided opportunities to learn new skill. Less than half of the respondents were undecided on newer technological systems providing opportunities to get promoted to higher level, higher paying jobs while one third disagreed on this. This response may imply that employees are reluctant to engage technology training seriously as it may not lead to lower growth. Close to a half of the respondents agreed that use of new technological systems increased performance of bank employees leading to more reduction on investment. Technological system use can have significance influence on employee performance if implemented appropriately by bringing all employees on board. One third of the respondents agreed that they had not mastered their skills necessary for the jobs although majority agreed that they were confident about ability to do main job and capable of performing various jobs tasks.



The respondents were requested to evaluate their relevance at their work area. `Majority agreed that how well they did their job was important to their work area. They also reported that they had significant influence on the success of work area.

# Challenges of using integrated technology on employee Performance

Item	Agree	Undecided	Disagree
Interaction with technological systems is clear and understandable	97(65.5)	32(21.6)	19(12.8)
Find technological systems flexible to interact with	85(58.2)	47(32.2)	14(9.6)
Learning to use is easy	71(48)	52(35.1)	25(16.9)
Would be easy to become skillful at using the systems	95(64.2)	47(31.8)	6(4.1)
Using technological systems requires mental efforts	121(81.8)	21(14.2)	6(4.1)
Belief technological systems will be difficult to use	18(12.2)	26(17.6)	104(70.3)

Table 5: Ease of use and competence in using technological systems

Over three quarters reported to agree that using technological systems requires mental efforts while others reported to disagree in the belief that technological systems will be difficult to use (table 5). The challenges agree with earlier research which reported that, errors are committed by employees with serious financial implications on the banks. ICT could also be manipulated to commit fraud. Fraudulent practices such as money laundering, illegal withdrawal, and all other forms of manipulation could take place. ICT is capital intensive and depend on constant power supply which is epileptic in Nigeria. Large amount of money is presently being spent by most banks on power supply and electricity generation. ICT has also lead to reduction in the number of employees as most bank transactions have been taken over by the computer.

# Self Efficacy

Efficacy	Agree	Undecided	Disagree
Would be confident using even without one	28(18.5)	28(18.5)	95(62.9)
round to show how to use			
Prior knowledge of how to operate the system	114(76)	27(18)	9(6)
Seen someone else using it before	49(32.5)	74(49)	28(18.5)
If someone assisted get started	126(83.4)	19(12.6)	6(4)
First gone through a lesson	136(90.1)	9(6)	6(4)
Can call someone to assist if stuck	138(91.4)	6(4)	7(4.6)

## Table 6: Self Efficacy



As shown in table 6, majority of the respondents disagreed that they would be confident using technology even without one round to show how to use while others agreed that they would be confident if someone assisted them get started, had first gone through a lesson and that if they could call someone to assist if stuck.

## CONCLUSIONS

The findings of the objective one were that all the banks had integrated mobile and internet related systems in their products and service delivery. This has reduced the long queues of customers and delays in information relay hence employees serving many customers. The findings further revealed that website integrated systems have not been successfully used. Majority of the employees reported that they were not involved in the planning of the systems change action. From the findings of the study, it can be concluded that mobile and internet related technology systems is popular in Kenyan commercial banks. It can also be conclude that there is low involvement of employees in the planning and integration process of technology.

The second objective of the study examined the effect of technological systems use on employee performance among selected commercial banks. The findings of the study indicated that new technology improves working conditions of employees that improve their performance. Less than half of the respondents agreed that technology improves performance of the employees. From these findings it can be concluded that though technology integration in banks is expected to improve employee performance, majority of the employees still find it difficult in delivery on service and products.

The third objective of the study sought to establish the challenges that employees encounter in using technological systems in the banking sector. The findings of the study reported that use of technological systems require mental effort necessary for self efficacy and competence in use of technological systems is low among the selected commercial banks in the North Rift.

# RECOMMENDATIONS

The conclusion of objective one was that internet and mobile banking were popular and that website related technology services were least utilized. Therefore, it is recommended that web related technology should be expanded and mobilized. The conclusion of the second objective was that majority of employees still found it difficult performing their roles using technological systems. Therefore, it is recommended that banks should be sensitive to employee through involvement in the planning and integration process through training, piloting and feedback to enable them perform better.



## FURTHER STUDIES

This research had intended to establish the effect of technological systems integration on employee performance in selected commercial banks in the North Rift, Kenya. Other researcher may focus on the relationship between technological systems integration and financial performance in commercial in Kenva

## REFERENCES

Agboola, A. A (2006). Information and Communication Technology (ICT) in Banking Operations in Nigeria - An Evaluation of Recent Experiences, in Journal of Electronic Commerce in Organizations.

Agboola, A.A.(2001), Impacts of Electronic Banking on Customer Services in Lagos, Nigeria in Ife, Journal of Economic and Finance, Department of Economics; Obafemi Awolowo University, Ile Ife, Nigeria, Vol. 5,

Hawari, M, Ward, T. & Newby, L. (2009,). The relationship between service quality and retention within the automated and traditional contexts of retail banking.

Alu, A.D (2002). Effect of information technology on customer services in the banking industry in Nigeria, an Evaluation of Recent Experiences, in Journal of Electronic Commerce in Organizations , banking industry, Journal of Money, Credit, Banking, 35 (2), 141-176.

Bank, L., Patterson, G. R., & Reid, J. B. (1996). A comparative in the research process: London: Pearson Education Ltd.

Bechard, R (1969), Organization Development Strategies and models; Readings; Addition Wesley

Bennis, W (1969), Organization Development: Its nature, origin and prospects; Reading: Addition

Berger, A. N. (2003), The economic effects of technological progress: evidence from the

Bill, G (1996), Banking on a High-Tech future, Chartered Institute of Bankers Books; Canterbury, Kent,

Bolle De Bal, M (1992) Organization Development in Szell, G (ed.) Concise encyclopedia of Participation and CO- management Walter de Gruyter, Berlin.

Bureau of labor statistics, October 1993

Bureau of the Census 1993

Bureau of the Census, Computer use in the United States, Oct, 1993

Burns, B and G.M Stalker (1961), The management of Innovation, London and Taristock.

Chorafas, D. S. (1988). Implementing networks in banking and financial services. New York, Houndmills.

Cimoli, M and G. Dosi (1988), Technology and Development: some Implication of Recent Advances in company objectives in Ogun territory of the Nigeria Telecommunication limited; unpublished.

Coombs R.S.P and Walsh V (1987), Economics and technological change, London: Macmillan.

(Dauda, Y. A. 2011), Technological change and employee performance in selected manufacturing industry in lagos state of Nigeria: Lagos state University, Ojo; Lagos, Nigeria

Dauda, Y. A. (1997) Analysis of Engineers and Technicians. Performance in the Achievement of Company objectives in Nigeria.

Dauda, Y. A (2010): Technology Innovation and Sustainable Economy: Research and Development Programme in ECOWAS Region; Labour and Sustainable Development; 7thCongress of the International Network Regional and Local Development of Labour. School of Labour and Human Resources Renmin University Pekin, China, 11th–13thJune.



Dauda, Y. A. (2010). Technological Innovation and Organisational Performance: Employee Relation Strategies, Nigerian Journal of Industrial Relations, Vol. 11 pp.96-110 Development in Nigeria: Challenge of Indigenisation.

Drucker, P (1985), Management, Tasks, Responsibilities and Practice; London: Pan Book.

Economides, Nicholas, and Steven C. Salop, (1992), "Competition and Integration among Complements, and Network Market Structure," Journal of Industrial Economics, vol. 40, no. 1, pp. 105-123. Education.Emmanuel House; vol.2, No.4

Faith, A. (2011). Impact of technological innovations in commercial Banks in Kenya: An evaluation of customer satisfaction. Nairobi University Press

Farrell, Joseph and Garth Saloner, (1985), "Standardization, Compatibility, and Innovation," Rand Journal of Economics, vol. 16, pp. 70-83.

GoK (2007), Kenya Vision 2030, the popular version.

Haberberg, A. & Rieple, A. (2001). The Strategic Management of Organization. Harlow, Essex: Pearson Harvard Business Review. Nov-Dec.

Hawkins, J. (2001), The Banking Industry in the Emerging Market Economies: Competition, Consolidation and Systemic Stability: An Overview'. BIS Paper No. 4, pp: 1-44.

Jide,A, (2002), Don't open an account, if it isn't an E-bank'. Jidaw collective Available at http://www.Jidaw.com//article.html.

Inyang BJ (2010). Strategic Human Resource Management (SHRM): A Paradigm Shift for Achieving Sustained Competitive Advantage in Organization.

Katz, Michael and Carl Shapiro, (1985), "Network Externalities, Competition and Compatibility," American Economic Review, vol. 75 (3), pp. 424-440.

Khalil, E.L. (2000). Beyond natural selection and divine intervention: The Lamarckian implication of Adam Smith's invisible hand. Journal of Evolutionary Economics, 10(4), 373-393.

Khalil, T. (2000), Management of Technology. The key to Competitiveness and Wealth Creation, McGraw Hill

Kothari, S., Sloan, R., 1992, Information in Prices About Future Earnings: Implications for Earnings Response Coefficients, Journal of Accounting and Economics 15, 143-171.

Kozak, S. (2005), The role of information technology in the profit and cost efficiency improvements of the banking sector, Journal of Academy of Business and Economics, February1, 2005.

Kubr, C.E (1977). Preparing Managers for Progressive Technology in Management

Laudon, D.P and Laudon, J. P (2010) Management Information System: Managing the Digital Firm, 11

Laudon, D.P. and Laudon, J.P (2001) Management Information Systems: Organization and Technology in Methods, Kanezja Publishers

Negrophone, N. (2000). Will Everything be Digital, The Future of Technology, U.S.A. New York, Houndmills, No 1&2.

Omwonza, T(2009), opportunities and challenges towards an Entrepreneurial Economy, Strathmore ICT Conference.

Orodho J.A. (2005) Elements of Education and Social Science Research Methods, Kanezja Publishers.

Oso,W.Y and D.Onen,2005.A general guide to writing research proposal and report,Kisumu Kenya

Rousseau & Richard Sylla, 2001. "Financial Systems, Economic Growth, Peter L. and Globalization, profit?, Information and Management, 42 (5), 781-787.

Quin J.B. (1969). Technological Innovation by Multi-National Companies, USA, References

Shrivastava, P. (1984) Technology Innovation in Developing Countries, USA: Columbia Journal of World Business, winter, pp.23-28



Shu, W. and Strassmann, P. A. (2005), Does information technology provide banks with profit?, Information and Management.

Solow, R. (1987), We'd better watch out, New York Times Book Review, July 12.sustained competitive advantage in organization. International Bulletin of Business Administration, 7,23-36

Tam, K. Y. (1998), The impact of information technology investments on firm performance and evaluation; evidence from newly industrialized economies, Information System Research, 9 (1): 85-98.

Taylor, O.W (1958) Variables related to creativity and productivity among men in two research Laboratories, the Economic of Innovation for the process of Development, London: West view/IT publication the Network Enterprises, 4th ed. Prentice Hall international in US. 4th ed., London: Pearson Education Ltd. Time Magazine, July 3.P. 9.

Tsui, A.S., Pearce, J.L., Porter, L.W., & Tripoli, A.M. (1997). Alternative approaches to the employeeorganization relationship: Does investment in employees pay off? Academy of Management Journal, 40(5), 1089-1121.

U.S. Congress, Office of Technology Assessment. (1995). Employees and technology: Making the connection. Washington, D.C.: U.S. Government Printing Office.

Willis, J. (1993). "What conditions encourage technology use? It depends on the context." Computers in banks, 9(4), 13-32.

Yasuharu, (2003). The effects of information system investments in banking industry. Management Journal, 40(5), 1089-1121.

### **APPENDIX: QUESTIONNAIRE**

#### Technology adoption and use

On a likert scale of 5, where [1] strongly disagree and [5] strongly agree, in your view, why has the bank adopted or improved technology system infrastructure?

Attracting and engaging customers	[1] [2] [3] [4] [5]
Managing risk	[1] [2] [3] [4] [5]
Transforming business operations	[1] [2] [3] [4] [5]
Optimizing operational efficiency	[1] [2] [3] [4] [5]
Simplifying IT infrastructure	[1] [2] [3] [4] [5]
Enhance employee performance	[1] [2] [3] [4] [5]

Others (specify) .....

Please indicate the type of technological systems that are integrated in your bank? Tick as may apply (Multiple responses).

Internet-banking	[]
On-line securities trading	[]
E-commerce on website offering third party products and services	
Cell-phone banking – basic information services	[]
Cell-phone banking – advanced, interactive services	[]
Product and service ordering via website	[]
Website integrated/connected with other IS systems	[]
Customer relation management systems (CRM)	[]



#### Employee involvement in technological integration process

How do you rate your involvement in the technological integration process in your bank? [1] Strongly Disagree [2] Disagree [3] Neutral [4] Agree [5] Strongly Agree.

Participated in the systems development	[1]	[2] [3] [4] [5]
Involved in the planning of systems change action	[1]	[2] [3] [4] [5]
Participated in the training programs for systems use	[1]	[2] [3] [4] [5]
Participated in the piloting of the systems at your branch	[1]	[2] [3] [4] [5]
After piloting were you asked for any feedback.	[1]	[2] [3] [4] [5]
All employees participated in the systems implementation	[1]	[2] [3] [4] [5]

#### **Technology and Employee Performance**

What is your view to what extent has the adopted technological systems organization? (where, [1] strongly disagree, [2] Disagree, [3] Undecided,	
Newer technological systems improve working conditions.	[1] [2] [3] [4] [5]
Newer technological systems provide me with opportunities to learn new	skills. [1] [2] [3] [4] [5]
Newer technological systems provide opportunities to get promoted to h	igher level, higher paying jobs [1] [2] [3] [4] [5]
The use of new technological systems has increased the performance of leads to more return on investments	of banks employees which in turn [1] [2] [3] [4] [5]
Others (Specify)	

### **Challenges: Employee Performance**

Please indicate to what extent you perceive ease of use and confidence in using technological system(s) in your work area (where, [1] strongly disagree, [2] Disagree, [3] Undecided, [4] Agree, [5] strongly agree)

My interaction with technological system(s) is clear and understandable	[1]	[2]	[3] [4] [5]			
I find technological systems flexible to interact with	[1]	[2]	[3] [4] [5]			
Learning to use technological systems is easy	[1]	[2]	[3] [4] [5]			
It would be easy for me to become skillful at using the technological systems						
	[1]	[2]	[3] [4] [5]			

Using technological systems requires mental effort	[1]	[2]	[3]	[4]	[5]
I believe technological systems will be difficult to use	[1]	[2]	[3]	[4]	[5]
Others (Specify)					

#### Self Efficacy

#### I would be confident in using the new Technological systems:

Even if there is no one around to show me how to use it	[1]	[2]	[3]	[4]	[5]
Only if have prior knowledge of how to operate the system	[1]	[2]	[3]	[4]	[5]
Only if I have seen someone else using it before I try it myself	[1]	[2]	[3]	[4]	[5]
If someone will assist me to get started	[1]	[2]	[3]	[4]	[5]



If I had first gone through a lesson on how to use it	[1]	[2]	[3]	[4]	[5]
If I can call on someone to assist if I get struck	[1]	[2]	[3]	[4]	[5]
Others (Specify)					

