International Journal of Economics, Commerce and Management
United Kingdom Vol. IV, Issue 11, November 2016
http://ijecm.co.uk/ ISSN 2348 0386

INFLUENCE OF TECHNOLOGICAL INNOVATION ON BANK PERFORMANCE IN MERU TOWN, KENYA

Raymond Mwendwa Ndunga
School of Business and Economics, Meru Univeristy of Science & Technology, Kenya
ndungarm@gmail.com

Ibuathu Charles Njati
Department of Education Science, Meru University of Science and Technology, Kenya

Simon Rukangu
Department of Education Science, Meru Univeristy of Science & Technology, Kenya

Abstract

There is increased industry convergence in the financial industry in Kenya following the introduction of mobile money transfer services offered by telecommunication players, the registration of micro finances as deposit taking organisations and the entry of internet money transfer agents. These changes have resulted in financial institutions no longer facing competition from among themselves only but also from non banking players. The study objective was to determine the influence of technological innovation on organization`s performance. The study covered all commercial banks branches in Meru county. There are 20 registered commercial banks in Meru county which are registered with the Meru county government. In this study a descriptive research design was adopted. The total population was 60 members of management staff in commercial banks branches that operate in Meru town and the study adopted a census sample design. Data was collected using a questionnaire. Descriptive and inferential analysis were used to analyze data. From the study findings it can be concluded that financial performance of commercial banks` branches in Meru towns is positively influenced by innovation. Innovations adoption by commercial banks presents a high potential of financial performance improvement therefore yielding increased returns for the shareholders. Innovations versatility has resulted to their increased adoption rate among the banks and their customers with the uptake further accelerated by the fact that the adoption is from both the

banks and their customers. Even with other sectors of Kenyan economy showing a lagged performance, Kenyan banks have continued to post good performance. The recommendations of the study wre that banks can manage their costs better in continuing to invest in technology innovation as opposed to continued investment in brick and motor branches. The internet and mobile channels can process a higher volume of transactions compared to the use of the conventional manual processes.

Keywords: Influence, Technological Innovation, Bank's Performance, Competitive Environment, Products

INTRODUCTION

Oke and Goffin (2011) noted that in United States of America, innovation has been used by financial institutions as a strategy to give direction which realizes advantage in a changing environment through its configuration of competences and resources with the aim of fulfilling stakeholders' expectations Innovation is the result of man's learned and acquired knowledge or his technical skills regarding how to do things well. Quinn (2010) argued that it is incumbent on any organization to monitor changes, train and motivate employees to innovate, because innovation covers every aspect of all organizations. A firm's performance is the appraisal of prescribed indicators or standards of efficiency, effectiveness, and environmental accountability such as productivity, cycle time, regulatory compliance and waste reduction. Performance also refers to the metrics regarding how a certain request is handled, or the act of doing something effectively.

Kubbr (2007) observed that Japan financial institutions have encouraged innovation in order gain competitve advantage in all aspects of their operations. The major challenge facing most organizations for instance in India`s economy, is how to manage rapid and radical innovation and change. These innovations to a large extent determine organizational competitiveness and financial performance.

In South Africa financial institutions have been able to create competencies and in order to sustain them the banks have invested in online marketing, mobile banking, paperless banking and customised customer service. This has helped them to come up with favorable core banking systems, marketing strategies, products as well as organization innovation. This has improved the financial performance of financial institution. This can be found through increased number of customers, increased profit growth and development of new banking products. Due to the improved financial performance, the financial inclusion has improved especially in

developing countries. As a result of the rapidly changing technology and improved financial performance commercial banks have employed skilled and knowledgeable workers who are innovative to and able to deliver change. (Khalil, 2012).

Innovation is an essential component of competitiveness. Drucker (2013) defined innovation as a process involving equipping in new, improved capabilities or increased utility. Schumpeter (1939) described the different types of innovations as the introduction of new products, development of new methods of production, discovery of new sources of supply, discovery of new markets and new ways to organize organizations. Drucker (2013) noted that innovations provide firms with a strategic orientation to overcome the problems they encounter while they strive to attain sustainable competitive advantage. Innovation involves acting on the creative ideas to make some specific and tangible difference in the domain in which the innovation occurs (Davila, 2010).

Statement of the problem

There is increased industry convergence in the financial industry in Kenya following the introduction of mobile money transfer services offered by telecommunication players, the registration of micro finances as deposit taking organisations and the entry of internet money transfer agents such as Pay Pal. These changes have resulted in financial institutions no longer facing competition from among themselves only but also from non banking players. This has increased competition in the industry. The new threats have prompted commercial banks to be innovative in a bid to leverage on the competition and also recapture lost market share. These innovative strategies include technology innovation, management innovation and marketing innovation.

Though in Kenya the banking industry has continued to operate in a competitive environment, most banks have introduced new innovative products, processes, technology and organization innovation leading to greater efficiency and product differentiation. On technology, banks have had to offer a wide range of deposit, investment and credit products through distinct channels of distribution which include improved ATMs ,branches, telephone and Internet. Commercial banks have now started to go towards creativity and marketing innovation. This comprises of marketing innovation and creation of new services, marketing innovation and creativeness in delivering banking services to clients and marketing innovation and creativity in marketing and delivering those services to customers in the right time and environment. Commercial banks have also explored management innovation which is the management of innovation processes. This has allowed the management to cooperate with a mutual apprehension of goals and processes. Innovation management has allowed the banks to

respond to internal or external opportunities, and use its creativity to introduce unique concepts, processes or products.

All these have led to the banks consistently experiencing high rate of growth in terms of number of customers and their asset base. However, many of these gains are quickly taken over by time and hence no lasting benefits and therefore cannot be depended upon as a prerequisite for growth and survival. Also financial exclusion still stands at about 25.4% according to CBK(2013) Fin Access survey, leading to missed targets in terms of market growth, the banks have been losing market share to mobile money transfer companies such as Mpesa, the cost of doing business still affects lending rates accounting for the large disparity in lending and borrowing interest rates. It could be customers have been happy to choose banks based on trust, pricing and convenience rather than innovation and product leadership The research seeks to understand whether the effects of innovation lead to an increase in performance of the banks.

Objective of the study

To determine the influence of technological innovation on banks performance in Meru county.

Research Hypothesis

Ho: There is no significant relationship between technology innovation applied and banks performance in Meru county.

Scope of the study

The study covered all commercial banks branches in Meru county. There are 20 registered commercial banks in Meru county which are registered with the Meru county government by January 2016 to conduct business as commercial banks. Meru town is the commercial hub for Meru county and all banks in the county are represented in the town.The study concentrated on management teams alone since they are the key policy drivers on the issues affecting performance of commercial banks

LITERATURE REVIEW

Disruptive Innovation Theory

According to the theory of disruptive innovation by Christensen (1997), the leaders in an industry are displaced by new entrants when the new entrants introduce a disruptive innovation the industry leaders are not able or willing to respond to. The theory predicts that the industry leaders are displaced from the industry and the new entrants take over the market. The OECD's

Oslo Manual (2005) defines disruptive innovation as an innovation that has a significant impact on a market and on the economic activity of firms in that market. Any type of innovation can be disruptive.

The banking industry in Kenya felt the effects of disruptive innovation from the telecommunication firms offering mobile money transfer notably M-Pesa from Safaricom. M-Shwari a product of Safaricom and CBA bank, stands out as the biggest disrutptive innovation along with Mpesa in Kenya in the last decade. Statistics from Safaricom ltd, indicate that Mshwari was officially launched on 27 November 2012 and drew 70,000 subscribers on day one of its operational launch. In one month, it had attracted 1 billion Kenyan shillings in deposits - a level which took traditional banks in Kenya many months or even years to reach – by April 2013, it had over 3 million customers. M-Pesa by 2013 had recruited 10.2 million customers. To be able to deal with this challenge banks have engaged in innovation (CBK, 2014).

Disruptive theory is relevant in that it explains the type of innovations banks adopt. Technological, marketing and management innovations are disruptive because they do away with traditional banking.

Empirical Review

Adoption of Technology by the Commercial Banks

Technological innovation is made up of systems innovation, processes innovation, and innovation of equipments employed in an organization. Cumming, (2008) defined process innovation as the process of reengineering and improving internal operation of business process. This process involves aspects of a firm's function such as technical design, R&D, manufacturing, commercial activities and management. According to Oke *et al*. (2011), process innovation involves the development of or enhancement in techniques and the evolution in process or system. For example, innovation in skill, techniques,technology, system and procedure, which is used in the transformation process of input into output.

In an activity production, process innovation can be referred to as new and improved techniques, tools, devices, and knowledge in making a product (Langley *et al.,* 2011). It has a distinctive competence for competitive advantage, particularly in financial industries. In the banking industry, technological innovation has enabled the banks to launch a number of products in their banking platforms courtesy of superior core banking systems out sourced from systems development companies such as IBM, Mysis and Microsoft. The superior banking systems and modern equipments such as computers and networks have been integrated in the banks' operations. The company systems and information systems have been integrated along

the banks policy on infrastructure. These technological innovations include the infrastructure developments, skilled support staff and superior database management systems.

Ngugi and Karina (2013) investigated the effect of technological innovation strategies on performance of commercial banks in Kenya, they found that innovation strategies such as product repositioning, product replacement and process innovation strategies such as conformance to regulations and reduction of costs contributed to the bank's profitability.. They concluded that adoption of innovation strategies affected profitability of the bank. However they dwelt on product innovation strategies and the study was also deficient in examining the interrelationship among the various forms of innovations.

Letangule and Letting (2012) conducted an investigation on the effect of innovation strategies on performance of the telecommunication sector in Kenya and noted that the adoption of innovative strategies affected profitability of the firms. The study was conducted in the telecommunication sector and it did not deal with organization innovations such us management innovation, the study recommended further studies on other service industries.

RESEARCH METHODOLOGY

In this study, a descriptive research design was adopted. This method is suitable since it allows flexible data collection and the respondents are not manipulated. Descriptive research design is used when the problem is known and well designed. This is the research design that was used to establish the effects of banks innovation on performance of financial institutions. The total population was 60 members of management staff in commercial banks branches that operate in Meru town. Management staff was best population to use since they are the key policy drivers on the issues affecting performance of commercial banks(CBK, 2015).

Table 1: The Target Population

Cadre	No of Employees
Branch Managers	20
Operations Manager	20
Customer Service Managers	20
Total	60

Source: CBK (2016)

The study adopted a census sample design because the population is not large and there are well orgarnized structures where the respondents could be found easily, the researcher conducted a census of all the respondents from the banks, this is further supported by Kothari

(2010) who recommended that where the population is small, a census should be conducted and hence the sample size was 100%. Data was collected using a questionnaire. Frequencies and descriptive analysis were used to analyze data. Data analysis was done with the help of software programme SPSS version 22 which is the most current version in the market. Using SPSS Version 22 data collected was subjected to multiple regression for analysis and results generated to establish whether there exists any relationship between technology innovation, marketing innovation, management innovation and bank's financial performance. The analyzed data was presented using tables.

ANALYSIS AND FINDINGS

The researcher issued 60 questionnaires to the respondents. Only 51 questionnaires were returned hence the response rate was 85%. This was considered a good response rate for the purpose of interpretation.

Technology Innovations on Bank's Performance

This section sought to gather the responses of the respondents in regard to the technology innovations on bank's performance.

Table 2: Mobile Banking On Bank's Financial Performance

Responses		Frequency	Percent	Cumulative Percent
Valid	Strongly Disagree	5	9.8	9.8
	Disagree	15	29.4	39.2
	Neutral	8	15.7	54.9
	Agree	20	39.2	94.1
	Strongly agree	3	5.9	100.0
	Total	51	100.0	

From the table, respondents were asked to indicate their level of agreement on how mobile banking influences banks' financial performance. It was found from a majority of respondents 39.2% who agreed that mobile banking has contributed to banks performance. 29.4% of the respondents disagreed that mobile banking has contributed to banks` financial performance. It was of significant to note that 15.7% of the respondents were neutral on contribution of mobile banking to their banks` performance. These findings agree with a study done by Oke *et al*. (2011), who noted that with the creation of or improvement in technology and the development in process or system there is incresed performance in banks.

Response on Internet Banking on Bank's Financial Performance

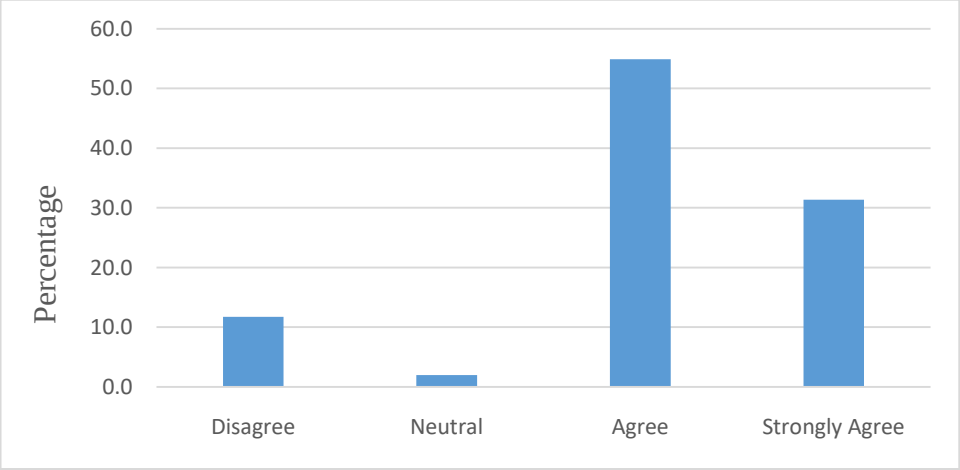
The respondents were asked to indicate whether the internet banking adopted by the bank has contributed to the bank's financial performance. Their responses were presented below in table below.

Table 3. Internet Banking on Bank's Performance

Responses		Frequency	Percent	Cumulative Percent
Valid	Disagree	6	11.8	11.8
	Neutral	1	2.0	13.7
	Agree	28	54.9	68.6
	Strongly Agree	16	31.4	100.0
	Total	51	100.0	

Respondents were asked to respond as to whether internet banking adopted by the bank has contributed to the bank's overall performance. It was found that majority of respondents 54.9% agreed that internet banking has contributed to the growth of bank performance. It was also found that 11.8% of the respondents disagreed that the growth in bank performance is not contributed by the internet banking. Only 2% of the respondents were neutral on whether the performance in banks was contributed by internet. These findings are supported by Langley *et al.,* (2011) who found that innovation has a distinctive competence for competitive advantage, particularly in financial industry.

Figure 1: Internet Banking on Bank's Performance



Response on ATM Usage in Branches and Bank's Performance

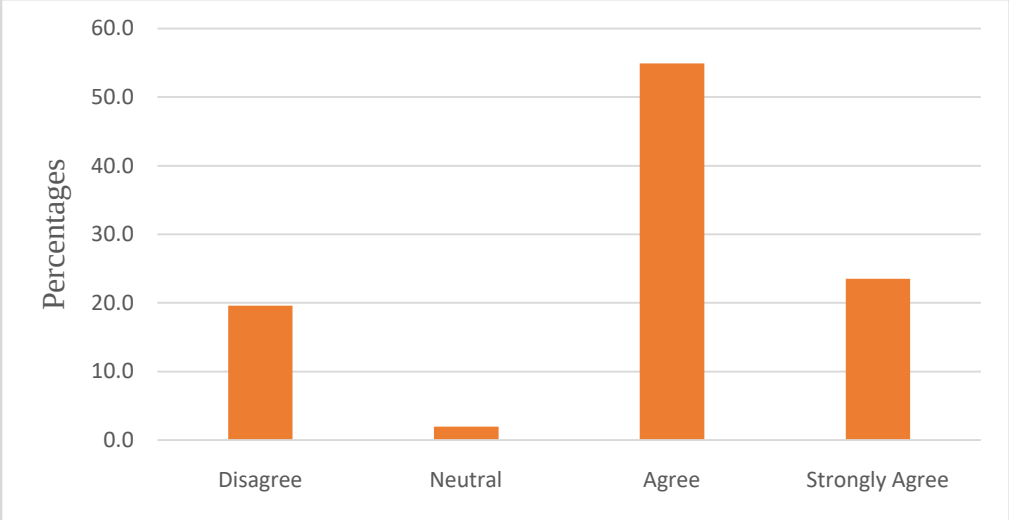
The respondents were asked to indicate whether the level of ATM usage in branches has influenced banks performance. Their responses were presented below in table below.

Table 4: ATM Usage in Branches and Bank's Financial Performance

Response		Frequency	Percent	Cumulative Percent
Valid	Disagree	10	19.6	19.6
	Neutral	1	2.0	21.6
	Agree	28	54.9	76.5
	Strongly Agree	12	23.5	100.0
	Total	51	100.0	

Respondents were asked to indicate their level of agreement on whether the level of ATM usage in branches has influenced bank`s financial performance. The data revealed from majority of the respondents 54.9% that level of ATM usage in branches has contributed to the bank's overall performance. It was also noted that 19.6% disagreed that the banks overall performance has occurred due to ATM usage in branches. The study revealed that only a very few number of respondents 2% that were neutral on the contributions of ATM usage in branches. These findings concur with those of Ngugi and Karina (2013) who found that innovation strategies such as ATM usage contributed to the bank's profitability.

Figure 2: ATM Usage in Branches and Bank's Performance



Response on ATM Deposit Taking Machines and Bank's Performance

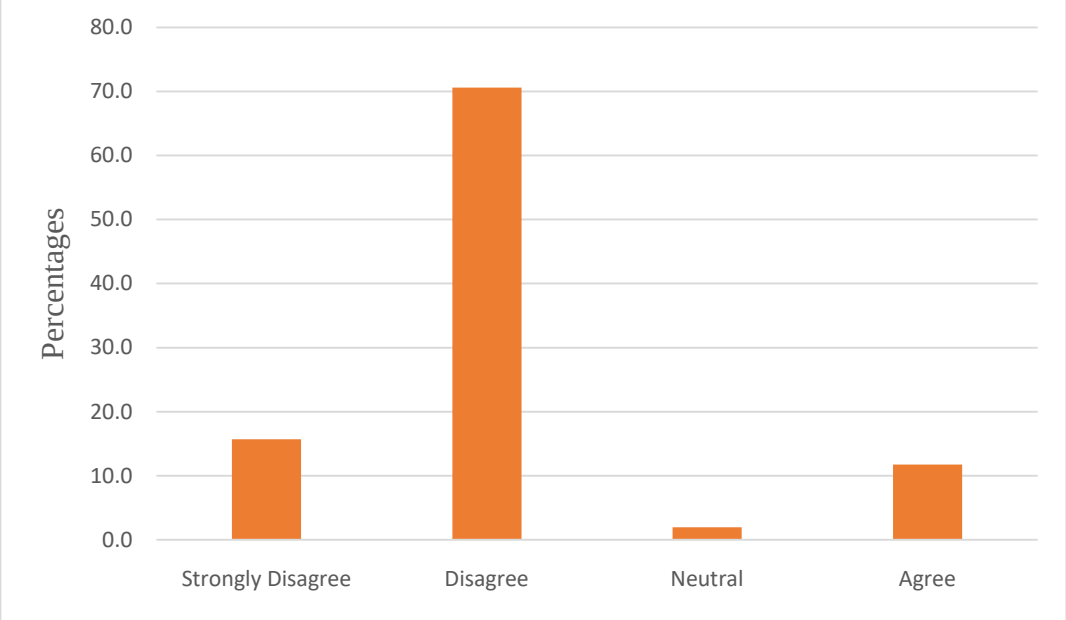
The respondents were asked to indicate whether the use of ATM deposit taking machine has influenced banks performance. Their responses were presented below in table below.

Table 5: Response on ATM Deposit Taking Machines and Bank's Performance

Responses		Frequency	Percent	Cumulative Percent
Valid	Strongly Disagree	8	15.7	15.7
	Disagree	36	70.6	86.3
	Neutral	1	2.0	88.2
	Agree	6	11.8	100.0
	Total	51	100.0	

The respondents were asked whether use of ATM deposit taking machine has influenced banks performance. It was found that 70.6% of the respondents disagreed that bank performance have improved due to use of ATM deposit taking machine. The study revealed that only 11.8% of the respondents agreed that use of ATM deposit taking machine have improved the bank performance. These finidings contradict those of Ngugi and Karina (2013) who found that innovation strategies such as ATM usage contributed to the bank's profitability.

Figure 3: Response on ATM Deposit Taking Machines and Bank's Performance



Test of Hypothesis of Technology Innovation

Table 6: Correlations of the dependent and independent variable

Independent Variables		Technology innovation
Banks Performance (Y)	Pearson Correlation(r)	.696*
	Sig. (2-tailed)	.002

***Correlation is significant at the 0.05 level (2-tailed)

There is a strong positive relationship between technology innovation and banks performance in Meru town as indicated by correlation of 0. 696. The p-Value of 0.002 is less than the acceptable significance level (α), hence the null hypothesis that there is no relationship between technology innovation and banks performance in Meru town is rejected. This shows that the sampled data can be applied to the general population at 95% confidence level.

Table 7: Regression Coefficients on Banks Performance

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	0.562	0.026		21.700	0.00
	Technological Innovation	0.108	0.018	0.829	5.919	0.000

a. Dependent Variable; Banks performance

The study hypothesized that there is no significant relationship between technological innovation and banks performance. The study findings showed a positive significant relationship between technological innovation and banks performance with a β=0.829, t=5.919 and a p-value <0.05). This implies that an increase in banks performance in Meru town is related with increased technological innovation.

$Y = \beta_0 + \beta_1 X_1 + e$

Where: Y= Bank's performance

β_0= Constant

β_1 =Coefficient of independent variables

X_1 = Technological innovation

$Y = 0.562 + 0.829X_1$

The model above shows that while holding all other factors constant, technological innovation affects banks` performance at 82.9%. This model shows that the variable in the study was statistically significant.

CONCLUSION

From the study findings it can be concluded that financial performance of commercial banks` branches in Meru towns is positively influenced by innovation. Innovations adoption by commercial banks presents a high potential of financial performance improvement therefore yielding increased returns for the shareholders. Innovations versatility has resulted to their increased adoption rate among the banks and their customers with the uptake further accelerated by the fact that the adoption is from both the banks and their customers. Even with other sectors of Kenyan economy showing a lagged performance, Kenyan banks have continued to post good performance.

This can be justified by the fact that the banks use of innovation has seen them make income away from the conventional sources such as loans interest and account maintenance charges. More commission income has been made by banks from fees charged on transactions done via innovation channels such as the internet and mobile phones.

RECOMMENDATIONS

The recommendations of the study was that banks can manage their costs better in continuing to invest in technology innovation as opposed to continued investment in brick and motor branches. The internet and mobile channels can process a higher volume of transactions compared to the use of the conventional manual processes. The cost per unit in the digital platform is minimized and this translates to better returns. Commercial banks should therefore invest in maximization of the return benefits realised from digital channels such as mobile and internet banking.

REFERENCES

Achrol, R. S. & Etzel, M. J. (2013). “The Structure of Reseller Goals and Performance in Marketing Channels,” Journal of the Academy of Marketing Science, 31(2), 146-163.

Ahmad, H. K., Raza, A., Amjad, W., & Akram, M. (2011). Financial Performance of Finance Companies in Pakistan. Interdisciplinary Journal of Contemporary Research in Business , 2 (12), 732-744.

Ahmed, S. (2009). Competition and innovation: an inverted U relationship. The Quarterly Journal of Economics, 120, 701-728.

Bagorogoza, D. and Waal, F.(2010). Financial Performance of Finance Companies in Pakistan. Interdisciplinary Journal of Contemporary Research in Business , 2 (12), 732-744.

Bakar, C. and Ahmad, H. (2010). The diffusion of financial innovation: an examination of the adoption of small business credit scoring by large banking organizations, Journal of Business, 78(2), 577-596.

Barney, M. (2010). Financial Performance of Leasing Sector. The Case of China. Interdisciplinary Journal of Contemporary Research in Business , 2 (12), 339-345.

Beaver, G. (2012). Small Business, Entrepreneurship and Enterprise Development, United Kingdom: Pearson Education Ltd.

Berry, J. (2009). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. International Financial Markets Institutions & Money.

Birkinshaw et al. (2008). The dynamics of product and process innovation in UK banking. International Journal of Financial Services Management, 1 (4), pp. 400-421.

Bonn, A. (2010). The economic effects of technological progress: evidence from the banking industry. Journal of Money, Credit, and Banking, 35(2), 141-176.

CBK, (2013). FinAccess National Survey 2013: Profiling developments in financial access and usage in Kenya, Central Bank of Kenya, Nairobi

CBK, (2014). Annual Reports, Central Bank of Kenya, Nairobi

CBK, (2015). Annual Reports, Central Bank of Kenya, Nairobi

Christensen, F. (1997). Client discretion, switching costs and financial innovation. Review of Financial Studies, 13, 1101-1127.

Collins, J. and Porras, I. (2000).'Built to Last – Successful Habits of Visionary Companies,' London: Random House.

Craig, S. and Hart, R. (2011). The impact of innovation on economic performance in financial services. The Service Industries Journal, 24(1), 116–130.

Cumming, G. (2008). Prepaid cards: an important innovation in financial services. Federal Reserve Bank of Philadelphia Payment Card Discussion Paper 06-07.

Darroch, K. (2005). Subprime lenders and mortgage market competition. Journal of Real Estate Finance and Economics, 30(2), 153-165.

Davila et al, (2010). Do internet activities add value? Evidence from traditional banks, Journal of Financial Services Research.

Drucker, P. (2013). Empirical studies of innovative activity, in Handbook of the Economics of Innovation and Technological Change. Paul Stoneman, ed. Cambridge: Blackwell.

Gakuhe and Ngumi (2013). Innovation Strategies Adopted By Equity Bank Ltd. Unpublished Master of Business Administration Project, University of Nairobi.

Gopalakrishnan and Damanpour (2010). Measuring the opportunity for product innovation, in M.de Cecco (de.), Changing Money: Financial Innovation in Developed Countries.

Grant, E. (2001). The performance of internet-based business models: evidence from the banking industry. Journal of Business.

Hamel, P. (2011). How the Internet affects output and performance at community banks. Journal of Banking & Finance

Hult et al. (2012). Empirical Studies of Financial Innovation: Mostly Talk and Not Much Action? Journal of Economic Literature.

Johne and Davies (2011). Financial Innovations and Excesses. Journal of Finance.

Johne, L.(2009). Determinants of Bank Lending Performance in Germany" Schmalenbach Business Review.

Kaplan and Waren (2007). Credit Derivatives: An Overview. Economic Review: Fourth Quarter, 2007. Federal Reserve Bank of Atlanta.

Khalil, (2012). Power of Collateral-How problems in securing transactions limit private credit for Moveable property. Public Policy for the Private Sector-Note No 43. The World Bank.

Kothari, C. (2010). Research Methodology: Methods & Techniques. 2ndedition. New Age New Delhi India: International publishers.

Kubbr, G. (2007). The Role of Credit Market Imperfections in the Monetary Transmission Mechanism: Arguments and Evidence, Scandinavian Journal of Economics.

Kuratko & Hodgets (2004). The Term Structure of Japanese Interest Rate: The equilibrium spread with asymmetric dynamics. The Japanese and International Economics

Langley et al., (2011). Credit derivatives and bank credit supply' Staff Report No 276-2007. Federal Reserve Bank of New York.

Lawson & Samson (2011). Determinants of Commercial Banks Lending Behaviour: Some Evidence for Greece. Journal of Post Keynesian Economics.

Letangule and Letting (2012). Innovation Strategies At The Standard Chartered Bank (Kenya) Limited. Unpublished Master of Business Administration Project, University of Nairobi.

Lumpkin and Dess, (2001). Problems of measuring innovative performance, in Casper, S. & F. Van Waarden. (Eds.), Innovation and institutions: a multidisciplinary review of the study of innovation system. Edward Elgar Publishing.

Mugenda, O. & Mugenda, A,(2008) "Research Methods: Quantitative and Qualitative approaches", Nairobi: Acts Press.

Musala and Fatoki (2010). The new Silicon Valley of financial innovation. Equity Bank, Nairobi

Myers and Marquis (2011). Laying off Credit Risk: Loan Sales versus Credit. Default Swaps.

Neville K. (2009). Foundations of behavior research (3rd ed.). New York: Holt,

Ngugi, K. & Karina, B. (2013), Effect of Innovation Strategy on performance of Commercial Banks in Kenya. International Journal of Social Sciences and Entrepreneurship,Vol.1, Issue 3, 2013, 1 (3), 158-170

Oke and Goffin (2011). Technology adoption and consumer payments: evidence from survey data. Review of Network Economics, 2(2),

Orodho, J. (2009). Research methods; quantitative and qualitative approaches. Africa Center for Technology (ACTS), Nairobi Kenya

Oslo Manual (2005). Guidelines for Collecting and Interpreting Innovation Data, 3rd Edition.

Quinn (2010). Bank Efficiency and Competition in Low-Income Countries: The Case of Uganda. International Monetary Fund Working Paper WP/05/240.

Rodriguez-Cano et al. (2010). Financial inclusion good for financial sector investment and development. Frankfurt Global Business Week: Business Opportunities in Africa Conference. Frankfurt.

Rosli and Sidek (2013). Is the internet delivery channel changing banks' performance? The case of Spanish banks. Journal of Banking & Finance

Rubio, A. and Aragon, J (2009). The new financial thing: The origins of financial innovations. Journal of Financial Economics.

Sandvik, M. (2003). Modern Banking. John Wiley & Sons, Ltd., London

Saunders, M. (2007). Research methods for business student's. 3rd edition. London Prentice Hall.

Schumpeter, Joseph A. (1939), The future of private enterprise in the face of modern socialistic tendencies. Journal of Economic History

Sekran and Bougie (2010). Research methods: Quantitative and qualitative approaches. Nairobi; Laba Graphics Services.

Simiyu, P. (2013). Innovation Processes and the Perceived Role of the CEO in the Banking Industry. Unpublished Master of Business Administration Project, University of Nairobi.

Thornhill (2006). Research Methods, Quantitative & Qualitative Approaches, Acts Press.

Wangunyu, H. (2014). Determinants of Financial Innovation and Its Effects on Banks Performance in Kenya. Unpublished Master of Business Administration Project, University of Nairobi.

Wheelwright and Clark, (2010). The Process of Financial Innovation. American Economic Review, 73 (2):89-95.

Wooldridge, J. (2009). Introductory econometrics regression analysis with cross sectional data. Michigan, State University, Cengage Learning.

Zahra, B. (2008). Financial Innovation and the Global Crisis. International Journal of Business Management.