The Effect of Innovation Process on the Performance of Banking Sector in East Africa Region Perspectives

Habimana Theogene, Mbalire Musa, and Mukankusi Marie Grace

Abstract—This research investigated the effect of innovation process on the performance of banking sector in East Africa on the case of KCBR. This study has the specific objectives, such as to analyze the drivers that influence financial innovation in KCB Bank Rwanda Ltd; to assess the challenges of innovation faced by KCB Bank Rwanda Ltd performance; to assess the effects of innovation on financial performance of KCB Bank Rwanda Ltd. The literature review in this research shows the theoretical reviews and other past studies done by other scholars who have written on it and it also shows the gaps which the study bridged and suggest ways of overcoming those gaps. This study shows conceptual framework which links the independent variable (innovation) to the dependent variable (banking sector performance). The research will contribute to the knowledge of innovation and its effect on banking sector performance. The research was designed under case study and used both descriptive and correlational statistics. The targeted population of the study was 324 employees of KCBR using simple random sampling approach, and then the sample size was 76 respondents determined using slovin’s formula and selected using stratified sampling technique. The researcher collected data using questionnaires. The collected data was presented using tables while statistical methods were used to ascertain the percentages and frequencies upon which analysis and interpretation was based. This research found that innovation is a key of mobilization in the large companies like KCBR. This research concluded that, there is a positive and very high correlation (relationship) between innovation and banking sector performance. The innovation KCBR influences its performance on the rate of 87.9%. This research also recommended KCBR to focus on idea generation, with very little consideration given to the steps needed to institute buy-in for the companies itself. The financial institution industry is very traditional and focuses mainly on incremental innovation. Innovation is defined as “the development and implementation of new ideas by people who over time engage in transactions with others within an institutional order [3]. This definition is sufficiently general to apply to a wide variety of technical, product, process, and administrative kinds of innovations. From a managerial viewpoint, to understand the process of innovation is to understand the factors that facilitates and inhibits the development of innovations. The dominant feature of the modern financial system is a high pace of innovations, both in terms of their number and value. Thus, it is important to analyze their influence on the financial system. Recently, many studies devoted to this problem have been published, however, they concentrated mainly on the global financial crisis perspective or on a single type of financial innovations [4].

The modern economy cannot exist without the efficient financial system that is defined as the collection of markets, institutions, instruments and regulations through which the financial securities are traded, interest rates are determined and financial services are produced and delivered around the world. The financial system is regarded as one of the most important creations of the modern society and it is described as an integrated part of the economic system and by this – a significant part of the social system [5].

Despite the traditional nature of the industry innovation can play an important role. Innovation can be thought of as falling onto a continuum from evolutionary to revolutionary. Innovation is important for the (national) market as well as for the companies itself. The financial institution industry is very traditional and focuses mainly on incremental innovation. Innovation is defined as “the development and implementation of new ideas by people who over time engage in transactions with others within an institutional order [3]. This definition is sufficiently general to apply to a wide variety of technical, product, process, and administrative kinds of innovations. From a managerial viewpoint, to understand the process of innovation is to understand the factors that facilitates and inhibits the development of innovations. The dominant feature of the modern financial system is a high pace of innovations, both in terms of their number and value. Thus, it is important to analyze their influence on the financial system. Recently, many studies devoted to this problem have been published, however, they concentrated mainly on the global financial crisis perspective or on a single type of financial innovations [4].

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According to [6] the lack of capacity of financial institutions to develop financial innovations to provide a
diversified range of products using new technologies is one of the weaknesses identified. The MINICOFIN Program was to establish a facility to finance the development of new products, new service delivery mechanisms, and the computerization of management procedures in Rwanda’s program, and seek partnerships to raise additional funds to increase opportunities for direct support to financial institutions in terms of professional development and innovation. A coordination mechanism will be facilitated through a Joint Investment Committee to ensure transparency and harmonization of support tools for technical analysis applications regarding funding and performance monitoring of the financial institutions supported.

KCB Rwanda was the first bank in Rwanda to introduce Agency Banking in Rwanda in 2012. However, other banks such as Equity Bank and Bank of Kigali have followed suit and the channel is growing. Currently Equity bank Agency banking is leading in the market. Their key competitive advantage is the platform they are using that uses both the mobile and POS interface [7].

From this background the researcher carried out a research on innovation and banking institutions performance, with the case study of KCB Bank Rwanda Ltd. This study focused on the effect of innovation process on baking sector performance. This research covered a period of 4 years; from 2013 to 2016, because it is in this period where the researcher expected the updated data. The study was conducted in KCB Bank Rwanda Head Office located in Kigali City, Nyarugenge District.

II. PROBLEM STATEMENT

Innovation is a primary goal for many organizations today; executives understand how important innovation is to achieving sustainable strategic advantage. Innovation is critical for an organization’s future sustainability in this century. Given the pressing needs of today’s global economy, organizations will be faced with the need to change internal processes, products and services. Issues such as population growth, climate change, resource scarcity, and the rapid rate of evolving technology require massive shifts in business operations and offerings [1]. All of these issues require innovation.

When pressed to articulate a company’s operations strategy, most executives talk about efforts to reduce costs and improve quality. Organizations are then forced to focus on creating revenue growth through the creation of new ideas [8]. Many different innovative ideas came up and get rewarded, but the level of application is still low. After all, the company and citizens do not benefit from the innovative ideas from the market, which could be cost reducing, reduce of congestion, reduce of nuisance, and reduce of travel time or an increase of comfort [3].

KCB Bank Rwanda like other financial institutions in Rwanda faced that problem of implementing ideas in order to enforce its performance through financial innovation. KCB Bank Rwanda had different new ideas concerning its performance, for instance KCB Bank Rwanda has grown its agent’s network to 330 agents. However as per end of Quarter 1 2014, only 86 agents were active having done 5,017 transaction generating revenue of RWF 1,376,998. This way short of the target of RWF 29,020,000 [7]. Thus, the researcher came up with an idea to carry out this research and in order to show how innovation has affected banking sector performance in Rwanda through a case study of KCB Bank Rwanda Ltd.

III. STUDY OBJECTIVES

The main purpose of this study was to examine the contribution of innovation on financial performance of banking sector in Rwanda. Specific objectives were to analyze the drivers that influence financial innovation in KCB Bank Rwanda Ltd; to assess the challenges of innovation faced by KCB Bank Rwanda Ltd performance; and to establish the relationship between innovation and financial performance of KCB Bank Rwanda Ltd.

IV. LITERATURE REVIEW

The study of [4] discussed the role that financial innovations play in the modern financial system, aiming at identifying and systematizing the core problems and definitions related to financial innovation and financial system. His paper first described the importance of the financial system and financial markets in the economy, explaining their functions and presenting their particular characteristics, focusing on their innovativeness. Then, based on the theoretical studies, the broad definition of the financial innovations has been developed, stating that any new developments in any elements of the financial system, including: markets, institutions, instruments and regulations, can be regarded as financial innovations if they are perceived as new by the end-user of innovation. Even if his paper plays a significant role in the present and future researchers, his research was qualitative and also he used secondary data only during his research process.

The study of [9] called Effects of Innovation Types on Firm Performance: an empirical Study on Pakistan’s Manufacturing Sector. The main purpose of this study was to explore the effects of innovation types including product, process, marketing and organizational innovation on different aspects of firm performance such as innovative, production, marketing and financial performance in Pakistani manufacturing companies. Data were collected through survey questionnaires from 150 respondents mainly from production, R&D and marketing departments of manufacturing companies. With the help of SPSS, data were analyzed by factor, reliability, correlation, and regression analysis. The results reveal the positive effects of innovation types on firm performance. Theoretical and managerial implications along with limitations for future research have also been discussed. They focused on relationship between innovation and firm performance using statistical approach, but they ignored some indicators of firm performance like ROE, ROA, capital adequacy ratio and then their research focused on non-financial institutions. Thus, from the above critics the researcher find a gap, the reason why he carried out this research using both statistical and financial techniques,
and then used both primary and secondary data in this research.

V. RESEARCH METHODOLOGY

This section presents the methods that the researcher used when carrying out this research, the research design; target population and sample size are presented in this chapter. The chapter further presents the methods through which data were collected from both primary and secondary sources. Data presentation and analysis methods are also suggested.

According to [10] and [11], research design is a framework or a plan for the study used as a guide in collecting and analyzing data. It is a blueprint that is followed in completing a study. He further defines a research design as a plan of action, for the purposes of this study; the researcher adopted a survey in KCBR. A research design will typically include how data is to be collected, what instruments will be employed, how the instruments will be used and the intended means for analyzing data collected. A research design is descriptive, inferential and regression that will be supported by both qualitative and quantitative methods to describe the relationship between the variables under the study, which are innovation and banking sector performance.

The target population for a survey is the entire set of units for which the survey data are to be used to make inferences. Thus, the target population defines those units for which the findings of the survey are meant to generalize. Gilbert (1992) asserts that, population refers to all the events, things or individuals that are the objects of investigation. This research was made to study the contribution of innovation on banking sector performance in Rwanda, thus the researcher surveyed a selected unit in KCB Bank Rwanda. The population under study was comprised of 324 employees of KCB Bank Rwanda Ltd including 6 top managers, 8 senior managers, 25 middle managers, 60 lower managers and 225 other employees.

Ref. [12] defines a sample as a subset or portion of the total population under study. This part concerns the sample size and sampling procedures used to come up with the sample size. In practice, the sample size used in a study is determined based on the expense of data collection, and the need to have sufficient statistical power. According to [11] sampling is the process of selecting elements from the total population. A sample size is respondents defined as definite part of statistical population whose properties are studies to gain information about the case of study. It is not potential to collect data from the whole population due to the time and financial constraints.

The level of precision or sampling error is 10% and 90% confidence level, total population(N) is 324, the sample size is selected using the Sloven formula \( n = \frac{N}{1 + N(e^2)} \), and then, n= 76 respondents. The sample size of the study was 76 respondents. It is on this ground that the researcher selected 51 KCB Bank Rwanda lower managers, 20 KCB Bank Rwanda middle managers and 5 KCB Bank Rwanda top managers. The researcher’s intention was to ensure that the sample includes the elements that are directly relevant to the problem being investigated.

The study population has been stratified into three strata (groups), one stratum is comprised of top managers, the second one is comprised of middle managers and the third one is comprised of lower managers. From these three strata, the researcher used purposive sampling techniques as these enabled the researcher to select respondents who could provide him with the information needed for the study.

\[
\begin{align*}
N &= \frac{324}{1 + 324(0.1^2)} \\
&= \frac{324}{1 + 324 \times 0.01} \\
&= \frac{324}{1 + 3.24} \\
&= \frac{324}{4.24} = 76 \text{ respondents}
\end{align*}
\]

<table>
<thead>
<tr>
<th>Population category</th>
<th>Sample size</th>
<th>Stratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>KCB Bank Rwanda Ltd</td>
<td>19</td>
<td>Middle managers</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>Lower managers</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>Other employees</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>External consultant</td>
</tr>
<tr>
<td>Total</td>
<td>76</td>
<td>Total selected employees</td>
</tr>
</tbody>
</table>

Source: Researcher (2016)

Data were collected from both primary and secondary sources. Primary sources was from employees of KCB Bank Rwanda Ltd Head office while secondary sources was from the text books, journals, reports and internet sources related to the study topic. The researcher used various instruments that helped him in acquiring the sufficient data required from both primary and secondary sources. The researcher in this case used questionnaires and interview guide through directors.

According to [11], primary data are those data collected to the specific problem or issue under investigation. Primary data are necessary when a trough analysis of secondary data is unable to provide satisfactory information; he further argued that, primary data are collected to fit precise purposes of current research problem. The main techniques of primary data collection are interviews and questionnaires given to the KCB Bank Rwanda staff. Therefore, primary data were collected from respondents in the form of answers to the administered questionnaire as well as responses where interviews were applied. Primary data were collected specifically to address the problem in question and was conducted by the decision maker. Primary data may be collected through surveys, focus groups or in-depth interviews, or through experiments such as taste tests [12].

Secondary data is information that has already been collected and is usually available in published or electronic form. Secondary data has often been collected, analyzed, and organized with a specific purpose in mind, so it may have limited applications to specific market research [11]. However, some of the advantages of using secondary data for market research include both cost and time savings. Data that has been published by government agencies is readily available and free of charge, while data collected and analyzed by telecommunication firms’ may require permission for use. The use of secondary data is important.
because it reviews the literature and tries to focus both global and national perspectives so that the researcher could have a comparative framework for analysis and evaluation. From the above views, the researcher collected primary data and make documentary analysis for secondary data from KCB Bank Rwanda Ltd.

Interview guide: The researcher formulated an interview guide which helped in getting data from some KCB Bank Rwanda employees who were very busy with limited time to fill questionnaires. Documentary review: The researcher further reviewed various literature related innovation and performance of KCB Bank Rwanda Ltd.

Reliability is the extent to which research tool can yield same results in different studies with the same method; validity is the accuracy and meaningfulness of results gotten from data collected using the research tools. Therefore, the researcher first and foremost carried out a pilot study by testing questionnaires to at least 10 members from the respondents in KCB Bank Rwanda Ltd before going into data collection.

Data processing is, broadly, the collection and manipulation of items of data to produce meaningful information. In this sense it can be considered a subset of information processing the change of information in any manner detectable by an observer. In a science or engineering field, the terms data processing and information systems are considered too broad, and the more specialized term data analysis is typically used. Data analysis makes use of specialized and highly accurate algorithms and statistical calculations that are less often observed in the typical general business environment. During data analysis the researcher focused on editing, coding and tabulation.

In general sense editing prepares a written work for publication. An editor checks for completeness, accuracy, consistency, word choice, writing style and spelling errors. While a writer may accept, negotiate or reject individual edits, the efforts of an editor always enhance the final product. Manual data adjustment and editing is when the selection of a more reasonable value is done by a person. It may involve writing down, for key entry, the adjustments to be posted to more reasonable value is done by a person. It may involve adjustments may also take place interactively as in the process of "heads-up" data entry or interactive data review.

A frequent criticism of coding method is that it seeks to transform qualitative data into quantitative data. Coding is a systematic way in which to condense extensive data sets into smaller analyzable units through the creation of categories and concepts derived from the data. The process by which verbal data are converted into variables and categories of variables using numbers, so that the data can be entered into computers for analysis. For surveys or questionnaires, codes are finalized as the questionnaire is completed. For interviews, focus groups, observations, etc., codes are developed inductively after data collection and during data analysis. Coding is an interpretive technique that both organizes the data and provides a means to introduce the interpretations of it into certain quantitative methods. Most coding requires the analyst to read the data and demarcate segments within it. Each segment is labeled with a code usually a word or short phrase that suggests how the associated data segments inform the research objectives.

Cross-tabulation is one of the most useful analytical tools and is a main-stay of the market research industry. Cross-tabulation analysis, also known as contingency table analysis, is most often used to analyze categorical (nominal measurement scale) data. A cross-tabulation is a two (or more) dimensional table that records the number (frequency) of respondents that have the specific characteristics described in the cells of the table. Cross-tabulation tables provide a wealth of information about the relationship between the variables.

This involves presenting findings in a logical and sequential way so that conclusions could be drawn from them. The data were presented according to the research questions and research objectives. Tables and figures were used to present these data. For primary data, data analysis was based on the percentages and frequencies of the views collected from respondents, mean, mode and correlation. And then, for secondary data analysis was based on profitability ratios, regression analysis and chat. The researcher used Statistical Packaging for Social Sciences (SPSS) as a statistical tool.

When carrying out this research, researcher met with various challenges relates to the nature and attitude of respondents and the nature of the study itself. Respondents mistrusted the researcher who may be carrying out commercial research under the cover of academic research and may therefore doubted the purpose of the researcher thinking that it is not academic. However, the researcher did not let it go, but made a through explanation and convinced them by showing academic documents and then convinced respondents beyond doubt that the research is purely academic until they give the required data. The required literature was not enough in Kigali Independent University library and therefore this was solved by moving to various libraries, book centers and internet.

The following ethical issues, though not exhaustive, has been identified by various authors as important to be considered during any research: Informed consent, avoidance of harm, violation of privacy, anonymity and confidentiality, deceiving respondents or concealing of information, respect for human dignity that include right for full disclosure, debriefing respondents and presentation and interpretation of data.

With regard to this study, the aims and objectives was conveyed to all the relevant authorities during the process of acquiring permission to do research, and to the employees and managers involved during the data collection stage. Respondent’s participation was voluntary and they had the right to withdraw from the study at any time if they so wish. Anonymity and confidentiality was promised and ensured, by providing a self-addressed return envelope with each questionnaire and by requesting respondents not to write their names on the questionnaire. In addition, a covering letter which explained the aim and objectives of the study was accompanied to each questionnaire.

V. RESEARCH FINDINGS

Innovation is one of the main dimensions of corporate governance and is widely seen to be determined by other country-level corporate governance characteristics such as the
The researcher used Pearson correlation coefficient and found that the coefficient \( r \) equals to 0.879. The variation of Pearson Coefficient correlation is between -1 and 1. According to the research, the correlation of 0.879 (87.9\%) is located in the interval \([0.75 – 1.0]\) categorized as positive and very high correlation. As the significant level is at 0.01 (1\%), the p-value of 0.000 (i.e. 0.0%) is less than 1\%. This leads to confirm that there is a positive and very high correlation (relationship) between Innovation and KCBR performance. This positive effect is confirmed by the views of respondents, whereby 83.8\% of respondents strongly agreed that innovation increases product competitiveness on the market and 16.2\% agreed, 83.8\% strongly agreed that innovation increases product marketing in KCBR and 16.2\% agreed with the statement. Therefore, all respondents confirmed that innovation influence the performance of a company through product marketing, 93.2\% of respondents strongly agreed that Innovation influences people’s participation in shares buying and 6.8\% agreed with the statement.

VI. CONCLUSION AND RECOMMENDATIONS

According to the first research question, this research concluded that innovation is a key of performance in the large companies like KCBR. Corporate image describes the manner in which a company, its activities, and its products or services are perceived by outsiders. In a competitive business climate, many businesses actively work to create and communicate a positive image to their customers, shareholders, the financial community, and the general public in order to attract and retain them through innovation of new products on the market. Hence, corporate image is the aggregate of sources, messages, and media by which the corporation conveys its uniqueness or brand to its various audiences. Globalization is the process of international integration arising from the interchange of world views, products, ideas and other aspects of culture; people from elsewhere are interested in new product. Hence, globalization is a good factor of innovation through a process of interaction and integration of this world. The innovation has an important influence on the priorities set by the board, and that these priorities determine the optimal composition of the board of directors, 52.7\% strongly agreed that availability of training in KCBR affect innovation and 35.1 agreed with the statement. Therefore, the respondents confirmed that corporate ownership is challenged by both internal and external operating environment factors, 70.3\% strongly agreed that increment in market size challenges innovation in KCBR, 12.2\% agreed with the statement, 70.3\% strongly agreed that Employees’ retention challenged innovators in KCBR and 29.7\% agreed with the statement. All respondents confirm that employee’s retention challenged the performance of KCBR through innovation.

The researcher assessed the relationship between innovation process and banking sector performance using Pearson correlation coefficient. This effect was calculated from the respondent’s views and perception of respondents. The research converted views of respondents into quantitative using SPSS through coding. The table 4.22 shows the correlation between innovation and performance in KCBR.
to business while the attributes of a product remain similar. Performance targets were highly motivated through innovation, because the owners of the company need the high level of performance.

According to the third research question, the effect of innovation on performance of banking sector, this research concluded that, there is a positive and very high correlation (relationship) between innovation and KCBR performance. The innovation in KCBR influences performance on the rate of 87.9%.

The innovation in KCBR should be thought of as an endogenous outcome of decisions that reflect the influence of shareholders and of trading on the market for shares. The innovation that emerges, whether concentrated or diffuse, ought to be influenced by the profit-maximizing interests of shareholders, so that, as a result, there should be relation between variations in innovation and variations in firm performance. Therefore, from the research findings, this research recommended KCBR as follows;

KCBR, in order to attain sustainable performance, should focuses on corporate social responsibility, Availability of infrastructure and investor base, corporate image, pressure of the form of legal regulation, Pressure resulting from globalization, Firm size, Legal protection of shareholders and board leadership structure as the main drivers that should affect its ownership structure. KCBR should also assess the determinants challenge performance such as corporate reputation, Customer retention, Employees’ turnover rate, increment in market size, Employees’ retention, product competitiveness at the market, so that its level of innovation will increase in the industry.

This study focuses on innovation and performance. It assessed the factors that should influence the level of performance and the effect of innovation on performance of the company. Therefore, future researchers should focus on; innovation and customer attraction, innovation and employees retention, and then innovation and employees motivation.

ACKNOWLEDGMENT

It has been an exciting and instructive study period in this research process, we feel privileged to have had the opportunity to carry out this study as a demonstration of knowledge gained during the period studying research. With these acknowledgments, it would be impossible not to remember those who in one way or another, directly or indirectly, have played a role in the realization of this research project. First, we are indebted to the all-powerful God for all the blessings He showered on us and for being with us throughout the study. We are deeply obliged to our lecturers for their exemplary guidance and support without their help, this project would not have been successful. Yet importantly, we take this opportunity to express our deep gratitude to our family members, for their never ending support and our colleagues at University for their encouragement during this project.

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