Business Intelligence Techniques and Organizational Performance of Selected Commercial Banks in South Rift Counties in Kenya

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Abstract- The major role of Business Intelligence (BI) Techniques in an enterprise is data resource utilization. Banks could create more value by leveraging on the data they have. However, greater portion of contemporary banks confront difficulties such as data underestimation, fragmented financial systems, small banks serving niche markets and are not contributing to competition in the sector, limited Outreach program of financial systems, fraud detection, mismanagement and even loss of business among others have remain glaring in the sector. Business data and data analysis process have necessitated the need for precise choices to be made and adoption of new tasks that enhances business performance. The study sought to determine the effects of BI analytical techniques on organizational performance in banking sector where descriptive research design. The study was carried out in selected commercial banks in Bomet, Kericho and Narok counties. The target population of the study was 820 where 246 employees were sampled through random sampling technique to complete the questionnaires which was the primary source of data. The study established that; banks need to use data mining tools for extracting information in a database; data visualization enabled easy comparison of the performance of bank.

Index Terms- intelligence, business intelligence, technique, system, organizational performance, analytical technique,

I. INTRODUCTION

Principle role of Business Intelligence is to utilize data resources in terms of information and analyses of business within the setting of key business practices that necessitate specific choices and actions that brings about improved performance, Williams, (2006). BI techniques has the ability to boost utilization of data by exhibiting it in standard forms, coordinating and keeping it in a data warehouse making it open for extraction of valuable and shrouded data, along these lines expanding the precision of decision making and creating an upper hand that can likewise be called "competing on analytics" (Davenport, 2005). Contemporary banks in Serbia confront difficulties, for example, fierce rivalry, a high market dynamics, the need of strict control; fluctuating customer requests and risk administration are just a portion of the highlights of the business circumstances where present day banks conduct their activities.

Fundamental tasks of Business Intelligence Systems are integration, exploration, grouping, aggregation and a multidimensional examination of information beginning from different data assets, Olexová, (2014). To carry out these assignments, Business Intelligence frameworks utilize specific products, innovations and procedures that depend on a specific data framework foundation including methods, for instance, data warehouse and Enterprise Resource Planning (ERP) frameworks. A business intelligence technique captures the data gathered by a company, stores and transforms them into significant information that managers use in their everyday functions. It is helpful in depiction of data and provides a form of reality in open an open reports and analysis, so that better and convenient business choices can be taken in all operational, strategic and vital levels.

Some companies measure performance in view of how effective the company uses its assets to create benefit Mutuku, (2013). Further to that use of assets is likewise in view of the system picked by the association. The banking sector in Kenya is monitored by the Central Bank of Kenya (CBK) presently constituted under Article 231 of the constitution 2010. The CBK has the obligation of framing monetary policy, upholding price stability, issuing currencies and different capacities as expressed by a demonstration of parliament. Beck and Fuchs (2004) expressed that regionally, Kenyan financial framework is generally all around created and broadened, a laud it appreciates right up 'til the present time, and that it appreciates larger amounts of credit channeled to the private segment and higher deposits in money related establishments when contrasted with other sub-Saharan nations. Beck, (2010) expressed that the Kenyan financial system is the biggest and mostly developed in Eastern parts of Africa and that its steadiness has multiplied in the recent time.

Nevertheless, many challenges endure, the banking system is still fragmented, small banks serving niche markets and now not contributing to competition in the area and outreach of the financial apparatus nevertheless confined. The Kenyan financial outlook has of late witnessed the progress like M-PESA and mobile cash by and large, seen as being corresponding to the arrangement of financial facilities offered by extensive financial organizations, Allen, (2013). Indiatsy (2014) inferred that there has been developing rivalry from worldwide and also local banks and would require basic investigation of the focused powers in the business. This rivalry is ascribed to an expansion in take-up of client record of loan repayment and endorsements to begin agency banking and entrance of global banks into the Kenyan market.

1.1 Statement of the problem

The major role of Business Intelligence Techniques in an enterprise is data resource utilization. Business data and data analysis process have necessitated the need for precise choices to be made and adoption of new tasks that enhances business performance. Empirical studies reveals that, numerous enterprises have put up critical investments on innovations that helps business processes and fortify productivity in operational structure. Banks could create more value by leveraging on the data they have. However, greater portion of contemporary banks confront difficulties such as data underestimation, fragmented financial systems, small banks serving niche markets and are not contributing to competition in the sector, limited Outreach program of financial systems, fraud detection, mismanagement and even loss of business among others have remained glaring in the sector. Therefore, this study sought to determine the effect of Business Intelligence analytical techniques on organizational performance in banking sector in South Rift Counties in Kenya

II. BUSINESS ANALYSIS TECHNIQUES AND ORGANIZATIONAL PERFORMANCE

As indicated by Sharma (2010) BA is the collection, storing, statistical examination and apprehension of a lot of organizational information with the point of settling on better decisions and enhancing organizational performance and increasing competitive edge. BI has been used as an umbrella term to portray ideas and techniques to help enhanced basic leadership by utilizing factual based supportive systems, while business intelligence and Analysis (BIA), in 1989, has made progress in IT and scholars in the recent past and it alludes to the technologies, frameworks, practices and applications that analyses business information that the firm better comprehends its business, as proposed by Lim (2012).

As the BI idea wound up famous in the 1990s, BA was acquainted to mirror the analytical segment in BI. Chen , (2012) offering ascend to the adoption of the term BI.BI could be seen as a framework that recognizes difficulties and openings in information utilizing analytical techniques with a standout among the most widely recognized utilization of BA being planning and forecasting (Xia & Gong, 2014).Information to be analyzed has been incorporated into one database or data warehouse from various operational databases, where analysis is effected utilizing procedures, for example, data mining, visualization, online analytical processing (OLAP), statistical examination and prescient models. Information from different diverse sources is coordinated into a comprehensible body for upgraded strategic planning and decision support, conveyed at the ideal time, right area and in the correct form, bringing about enhanced decisions (Tan, 2011).

A number of researchers have recorded uses of business analytics that can add to organizational performance, for example, in promotions that can diminish client wearing down and enhance client benefit, enhance value of internet business, additionally production and manufacturing, sales and forecast, production designs, in finance, human asset and innovative work as observed by Sharma (2010).Organizational benefit and performance is at the center of firms and BA guarantees this, as Ranjan (2008) recommended that the desire for actualizing more brilliant business forms is the place where business intelligence impacts the execution of firms. All organizations want to pick up advantage over their rivals and are set up to embrace BA if seen to offer the preferred standpoint they require. Furthermore changes in ICT has driven information examination technologies to utilize parallel figuring ways to deal with impediments of existing database frameworks to enhance through input, as indicated by Tambe (2014), and that the expansion in rate and size of data accumulation has raised the value of development in information handling innovations.

Business analytics is seen by Xia and Gong (2012) as having advantages, for example, encouraging quicker and more precise reporting, and enhanced decision making, enhanced client services and expanded income. As per studies embraced by Ranjan (2008), Business analysis device is said to give basic understanding in empowering organizations to settle on the right and auspicious choices and encourages the investigation of different parts of business tasks to raise new income or save money on costs by expanding rate of return and supporting information decisions. Research studies have portrayed various utilization of business analysis techniques procedures and how they could enhance execution and upper hand. Nonetheless, an obviously explained theoretical grounded model of the components and procedures essential in ascertaining performance picks up from business analytics has been subtle as seen by Sharma (2010). Knowledge of the elements and prerequisites important for business analysis applications could empower organizations exploit the new facts and apply it to their vital strategic decisions making, along these lines responding faster to factors confronting the said business.

Sharma (2010) watched that past studies on business analytics had speculations on how it may add to upper hand nevertheless; a clear theoretical based model of the components associated with realizing the potential performance benefits is yet to be presented. Njuguna (2013) in his study uncovered that execution of business knowledge dashboard by Kenya Power has effectively enhanced their decision making process. Notwithstanding, Otieno (2010) in his examination discovered that difficulties looked by banks in adoption of utilization of ICT included resistance to change, security dangers, high introductory costs, cost of maintaining ICT improvements, fraud, expenses on software, high expenses of training staff, changing to new financial systems and so on. These difficulties would then definitely influence the usage of BA in the commercial banks.

Mbaluka, (2013) in his studies revealed that Kenyan banking sector is starting to put out plans on where enormous data could convey the most value however, numerous financial firms are careful about making these investments in a move towards business analysis. As firms go to the acknowledgment of the possibility of better decision making and expanded client esteem, they are progressively embracing business systems in their tasks which enables business officials' proactive capacities to foresee, estimate, evade, do correction and control circumstances in their organizations (Business Week Research Services, 2009). The contributions of business analytics to an enterprise performance isn't completely appreciated as it is quite new idea in Kenya, suggesting an absence of appropriate comprehension of its tasks and the principle objective of its application.

A noteworthy objective of BA is to automate and incorporate however many advances and capacities as would be prudent and besides to give information for analysis that are as instrument autonomous as could be allowed. This sets the phase for use of business analysis methods in banking sector in south rift locale to access data that could be utilized to improve decisions and in an opportune way. This is relied upon to enhance the execution of the organization in the levels of operations that is corporate, business and functional levels, and furthermore to enhance its upper hand.

BA is an expansive scope of scientific systems and software answers for gathering, combining, examining and giving access to data for endeavors that they may settle on better informed choices (Ranjan 2008). Investigation has certainly discovered advances into organizations, for example, banks, media transmission organizations, retail outlets. More so marketing offices where there is a powerful urge to reach the correct individuals at the right place and at the ideal time with the correct offers. All marketing promotions analysis has dug in itself solidly in helping organizations to understand more about their clients, areas of opportunities, building brand dependability and averting wearing down.

Mbaluka (2013) discovered five key business zones that present generally safe open doors for quantifiable execution of utilizing enormous information which were; target marketing, customer service, intelligent forecasting, client profiling, customer detection and fraud identification. Furthermore, Trkman (2010) implied that BA has been distinguished as a critical instrument in production network administration. Likewise they propelled regions of use of BA in organizations; they separated them into inward and outside components. Outside elements depended on Porter's five forces that is competitors, suppliers, customers and substitute products. The interior elements were procedures and activities, HR administration topped with help from top management. Decision path consulting (2010) discovered three major territories of tasks that BA is applied but with difficulties, these are in finance, sales and marketing and in operations. Njuguna (2013) uncovered that execution of business knowledge dashboard by Kenya Power, have effectively enhanced their decision making process. Factor for organizations is finding ways of integrating the vast amounts of data generated from business processes and making sense of them.

Further with the development of company intranets, extranets and the internet has created a favorable environment for rapid development of internet banking to take root in developing countries according to Nazir (2011). Made by clients, for example, transaction types, recurrence, funds utilization and so forth. This offers Internet bank can improve the institutions key activities while empowering clients, they state further. E-banking offers methods for banks to gather information from the transactions, an open door for the banks to complete examination on the information and generate products that supplement client propensities. A noteworthy driver for BI as per Ranjan (2008) is that organizations as of now have frameworks that gather information however, wind up in circumstances without any strategies to put this information and data to use for key decision making. Operational activities caught by banks over a period of time have a tendency to be immense.

These organizations are then faced with the possibility that they could utilize these huge measures of information to use their upper hand and this has been made progressively conceivable by the quick advancement in computer development and related advances. Accessibility of substantial incorporated databases and advancement of intense strategies of visualization and information examination has produced enthusiasm for business analysis for development of decision making, thus better organizational performance and improved competitive advantage (Sharma, 2010).Extra progressions in ICTs have extraordinarily affected their application and thus how organizations work together.

Late upgrades in business analytics including new advances in technology, system integration and User Interface configuration have been driven by business values, and to expand this analytics are progressively getting installed into bigger systems, accordingly, information accumulation, storage and processing together with different issues particular to analytics are progressively considered into general systems plan (Kohavi, 2002). Making reference to the Strategy Alignment Model (SAM) of Henderson and Venkatraman (1989) Masa'deh (2008) induced that IT-business arrangement is achievable by building linkages among four key areas, that is business strategy, IT technique, organizational foundation and procedures and IT framework and procedures.

III. FINDINGS ON EFFECTIVENESS OF BUSINESS INTELLIGENCE ANALYSIS TECHNIQUES ON ORGANIZATIONAL PERFORMANCE

Respondents were asked to indicate the level of their agreement on effects of business intelligence techniques used in their organization on the performance of the bank. The results are as per table 4.6 where 5 is Strongly Agree, 4- Agree, 3 Undecided, 2 Disagree and 1 is Strongly Disagree.

Table 1 Business Intelligence Analysis Techniques and Organizational Performance

BI Analysis Techniques	1	2	3	4	5
Data warehouse techniques affects performance in our organization	38 (16.3%)	62 (26.6%)	4 (1.7%)	58 (24.9%)	71 (30.5%)
Data mining is used to improve performance in our organization	38 (16.3%)	58 (24.9%)	4 (1.7%)	62 (26.6%)	71 (30.5%)
Data visualization enables the presentation of information in our organisation	68 (29.2%)	38 (16.3%)	6 (2.6%)	44 (18.9%)	77 (33.4%)
Online Analytical processing (OLAP) facilitates the analysis of information online in our organisation	54 (23.2%)	40 (17.2%)	4 (1.7%)	57 (24.5%)	78 (34.5%)

Statistical examination is a tool used to enhance data analysis in our organization.	49 (21.0%)	60 (25.5%)	15 (6.4%)	38 (16.3%)	71 (30.5%)
Prescient models aids the analysis of information in our organisation	53 (22.7%)	53 (22.7%)	6 (2.6%)	56 (24.0%)	65 (27.9%)
Dash boards effects the analysis of information positively in our organisation.	74 (31.8%)	36 (15.5%)	4 (1.7%)	75 (32.2%)	44 (18.9%)

Source: Research Data (2019)

The first objective was to determine the effects of BI analytical techniques on organization performance in banking sector. Majority of the respondents who were 129 (55.4%) agreed that data warehouse is a business intelligence technique which is a focal store of data that can be examined so as to settle on better decision thus affect performance of an organization. This are in agreement with Sharma (2010) who noted that business intelligence is the collection, storing, statistical examination and apprehension of a lot of organizational information with the point of settling on better decisions and enhancing organizational performance and increasing competitive edge. Data mining which entails extracting information in a database was an effective business intelligence technique used by banks to improve their performance since majority of respondents who were 133 (57.1%) agreed to it. Data visualization by use of graphs, charts and tables to display summarized information enable easy comparison of the performance of bank had been adopted by majority of the banks according to the majority of the respondents who were 121 (52.3%). Online analytical processing technique which is an automatic online analysis of data was used by majority of the banks as revealed by majority of the respondents who were 135 (59%). Statistical examination for making quantitative decisions about a process or process was used by most of the bank since majority of the respondents who were 135 (59%). Prescient model gave knowledge of events before they take place was used by majority of the banks as revealed by the majority of the respondents who were 121 (51.9%). Dash board used for progress report was embraced by majority of the banks since majority of the respondents who were 119 (51.1%). This concurs with Tan (2011) who said that information to be analyzed has been incorporated into one database or data warehouse from various operational databases, where analysis is effected utilizing procedures, for example, data mining, visualization, online analytical processing (OLAP), statistical examination and prescient models. It also agrees with Njuguna (2013) who uncovered that execution of business knowledge dashboard effectively enhanced decision making process.

IV. CONCLUSION

Data warehouse is business intelligence techniques which is a focal store of data that can be examined so as to settle on better decision thus assist in decision making by the executives hence banks need to embrace it. Data mining entails extracting information in a database and is an effective business intelligence technique which banks need to use. Data visualization by use of graphs, charts and tables to display summarized information enables easy comparison of the performance of bank. Online analytical processing technique which is an automatic online analysis of data need to be adopted and be used by banks for them to be able to improve on their performance Statistical examination

for making quantitative decisions about a process or process ought to be used by banks so do prescient model used to give knowledge of events before they take place as well as dash board for progress report.

V. RECOMMENDATIONS

The study recommends that the banks need to effectively use BI systems since it brings better organizational performance through use of business analysis techniques, business measuring techniques, business knowledge discovery techniques and reporting techniques. Awareness about the capabilities of BI is quite low among these Commercial banks hence banks need to be sensitized on the benefits of using business intelligence since knowledge management is one of the most important key factors of competition and productivity growth and in today's competing business environment, companies should consider the competitive advantages of BI tools that provide much more advanced analysis options for organizational data. On the other hand, organizations should overcome the technical and organizational challenges of implementing BI in order to achieve an efficient utilization of it since BI improves the business performance and improves the overall performance of the organization. More specifically, banks that are equipped with BI have higher association between their operations and business performance and that banks that collect and analyze data using BI outperform those who do not.

Further study can be done by replicating the research objectives with longitudinal data so as to unfold the causal relationship among variables over a longer period of time. Future research can replicate the present study on organizations that are using customized BI techniques developed in-house with those which use over the counter BI Software's.

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