FIRM LEVEL TECHNOLOGICAL CAPABILITIES AND PERFORMANCE OF

COMMERCIAL BANKS IN KENYA

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DECLARATION

I declare that this project is my orinal work and has not been submitted elsewhere for examination purposes

....

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D61/6469/2017

I declare that this project has been submitted for examination with my authority as the university Supervisor

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The completion of this course is a sum of the efforts of many. I thank God for giving me the fortitude to withstand the challenges that come with such an undertaking. I am sincerely grateful to my family for allowing me to sacrifice time I should have spend with them in my studies. Last but not least to my suoervisor, Dr. Muya Ndambuki for his inputs into this project.

ABSTRACT

This study was guided by one objective; To determine the relationship between firm level technological capability and performance of commercial banks in Kenya. This was a survey of all commercial banks in Kenya (41). The study used the descriptive survey in which questionnaires were used to collect primary data. Data was analyzed using both descriptive and inferential statistics. The descriptive statistics indicated that 17 banks have been in operation for 15 years and below. A majority of the respondent institutions indicate that they have been in operation for over 15 years. On transformation capabilities, the statement on everyone in the bank being aware of the processes was heavily supported (Mean= 4.908, Std. Dev=.089). This shows that banks invest heavily in ensuring awareness of the bank's processes. Banks aslo indicated that they continuously train their workforce on emerging technologies (Mean= 4.879, Std Dev=.045). This finding was found to be consistent with arguments by marketing scholars. On acquisition capability, most banks indicated that they have independent procurement departments. The model fitness indicates that 60.7 % of the dependent variable is explained by the independent variable. The implication is that firm level technological capabilities explain about 60 % of bank performance. The remaining 40% is explained by other factors . The ANOVA analysis shows that the relationship between firm level technologies and performance is statistically significant (Sig.=0.002). Conclusions were made considering the findings of the study. Recommendations for further studies have also been made.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Technology can be examined at two levels according to Lall (1999); the firm specific level and the national level. Shariff (1995) establishes six levels of firm level technological capabilities namely: transformation, vending, acquiring, modifying, designing capability and generating capabilities. Bell and Pravitt (1995) indicate that firm level technologies are correlated to performance of the organization. Various measures of technological capability have been forwarded and they all indicate that firm level capability can be measured using; research and development commitment, knowledge, experience, budget, equipment, output, information and management capabilities among others (De Carrolis, 2003). It is this presumed relationship between firm level technological capabilities and performance that is of interest to scholars. The management of any firm is always attempting to enhance its firm level technological capabilities in relation to the average national technological levels so as to convert its technology to a resource.

This study will use the resource-based view and Porter's value chain model. The resource based view states that firms are bundles of resources and which are distributed inequitably across firms and over time. Proponents of the resource based view argue that in order for a firm to earn extra rent, it has to be in possession of resources that rare, inimitable and valuable. This view is supported by Porter (2000) who argues that each firm is a collection of activities that are designed to produce, deliver and support the product. Porter's Value Chain Model is one of the earliest models to integrate conclusively the activities that a firm performs with the argument that it is is this value

chain that ultimately delivers customer satisfaction. The Dynamic capabilities theory builds on the Resource Based view of the firm but holds that resources are not sufficient; they need to be converted into capabilities (Day, 1994). Dynamic capabilities enable the firm to sense, seize and reconfigure resources in response to changes in the organizational environment.

The commercial banks in Kenya are classified into three Tiers: Tier 1 banks are the largest in terms of market capitalization. Tier 2 banks are the most in number and finally the relatively small banks coming in Tier 3. The performance of commercial banks in Kenya has become an interesting subject even in academics for the last ten years due to a multiplicity of factors including but not limited to; interest rate capping by the Central Bank, enhanced scrutiny from consumer watch groups, and technological advances among others. One of the most dramatic shifts in the commercial banking sector in Kenya has arisen due to changes in technology. This has made it necessary for commercial banks to turn to technology based value addition models. The level of competition is intense given that there are forty commercial banks serving a bankable population of about 20 million which compares poorly to larger economies such as Nigeria and South Africa.

1.1.1 Firm level Technological Capabilities

Technology is explained as consisting of two components by Kumar et al. (1999); the physical component which comprises of items such as tooling equipment, processes, products, blueprints and techniques and the informational component. According to Phaal (2013), technology is viewed as a key resource in most organizations and is explained as

basis for generating and sustaining competitive advantage as well being an enabler for many activities.

In the business context technology can be considered as an important type of resource, and therefore has considerable linkages with other resource-based views of the firm (Grant, 1996), for instance the competence and capability approaches (Hamel & Prahalad, 1994). Shariff (1995) explains six measures of technological capabilities as: the transformation capability which is the capability to utilize existing technologies; the vending capability which is defined as the capability of marketing and vending products; acquisition capability which is the capability of procuring new suppliers, negotiating and bid evaluation; modifying capability which is the capability of improving management, processes improving efficiency and effectiveness; redesigning capability which is the capability of designing new products and generating capability which is the ability to introduce new products in the market.

1.1.2 Firm Performance

Firm performance has been defined as a measure of the extent to which the objectives of the firm, both financial and non-financial are being met (Santos , 2012). It is argued to be one of the most popular variables in strategic management research and is commonly used as a dependent variable. Despite its relevance in research, firm performance measure faces a plethora of problems arising from lack of consensus on its dimensionality. Where many measures exist , a researcher is often advised to go for those measurements that best capture the desired outcomes (Richard et al. 2009).

Ray, Barney and Muhanna (2004) stress against the difficulties of testing the resource based theory (RBT) using aggregatedmeasures of performance and suggesting the use of indicators directly connected to the resources under analysis. The implication is that when determining the measures of performance, the indicators of the independent variable ought to be considered. The balanced score card has been suggested to provide balanced indicators of performance but which again should be modified to suit the context of the research (Kaplan & Norton, 1990).

1.1.3 Commercial Banks in Kenya

Commercial banking in Kenya is regulated by the Central Bank of Kenya. Commercial banks in any country play a critical role in development because they provide conduits for financial transactions. The centrality of the role that commercial banks play in Kenya is enshrined in the Vision 2030 of Kenya. Under the financial services pillar, the government recognizes the role that a vibrant commercial banking sector can play in this economy.

Currently, there are 41 commercial banks in Kenya (Financial Services Deepening, 2018). Given the size of Kenya's population, Kenya is considered overbanked i.e there are too many banks chasing too few customers. The resultant effect has been intense competition. Commercial banks have resulted to technology to differentiate their products from those of the competitors. This sis however proving to be a challenge. Development of technological capabilities that can support their current operations, that can enhance their ability to market their services that can enable generation of new products has been the only viable option.

1.2 Research Problem

Bell and Pravitt (1995) report that firm level technologies are correlated to performance of the organization. The implication is that there is a relationship between firm level technologies and financial non financial performance of the firm. Literature provides that technology can be examined at two levels (Lall, 1999) the firm specific level and the national level. Shariff (1995)argues that technological capabilities can be examined from six levels namely: transformation capability, vending capability, acquiring capability, modifying capability, designing capability and generating capability. Various measures of technological capability have been forwarded and they all indicate that firm level capability can be measured using; R& D commitment, knowledge, experience, budget, equipment, output, information and management capabilities among others (De Carrolis, 2003). It is this presumed relationship between firm level technological capabilities and performance that is of interest to scholars. The management of any firm is always attempting to enhance its firm level technological capabilities in relation to the average national technological levels so as to convert its technology to a resource.

The banking industry in Kenya is one of the most competitive in the world. Commercial banks the world all over provide the engine on which economic development can be achieved. It is therefore in the country's best interests that the commercial banking subsector of the economy be as vibrant as possible. In Kenya there are 40 banks according to Financial Services Deepening (2019) Reports. These 40 commercial banks are meant to serve a population of about 48 million Kenyans. This is way above the continental and indeed global averages. As a result then the level of competition is very

high. The situation is complicated further by the fact that internet based providers of banking solutions of saving and credit have emerged. The fact that these internet banking service providers do not have very stringent terms when it comes to lending has made them very attractive to borrowers. Commercial banks have attempted to differentiate their services but this is very challenging because of the near- uniformity of the services banks offer. Most of the commercial banks have resulted to technological solutions to differentiate their services and cut on operational costs. The belief is that embracing technology will afford the commercial bank some mileage beyond competitors.

Studies on the firm level technological capabilities indicate conceptual, methodological and contextual gaps as follows: Rothaermel and Hess (2007) carried out a longitudinal study and the findings suggest that a firm's innovative output is a positive function of its alliances with new technology providers. Bhatt and Grover (2005) found that organizational learning was significantly related to all other capabilities. These results indicate that it is important to delineate capabilities such as relationship infrastructure that can facilitate differentiation in marketplace, and dynamic capabilities such as organizational learning as an important antecedent to information technology capabilities. Alsamydai, Yousif, Al Khasawneh (2012) found that factors such as: effectiveness of data management, value added services, level of technological knowledge and awareness were correlated to profitability. Kemboi (2018) studied the influence of technology on financial performance of commercial banks only. The current study seeks to answer the following research question: What is the relationship between firm level technological capabilities and performance of commercial banks in Kenya?

1.3 Objective of the Study

The objective of this study is to establish the relationship between firm technological capabilities and performance of commercial banks in Kenya

1.4 Value of the Study

The findings of the current study will be useful to managers in commercial banks in Kenya and beyond. Managers will be able to predict the financial and nonfinancial outcomes when the technological capabilities of the firm are enhanced. The study seeks to establish this relationship. This way, managers will appreciate bthe importance of managing firm level technologies for optimal performance.

The academia will similarly benefit from the findings of the study in that the resource based view of the firm and dynamic capabilities will be tested. This will enrich the existing knowledge on the postulations of the two theories. The theories of resource based view and Porter's Model will be tested on firm level technological capabilities in a developing country.

The policy making bodies in Kenya and elsewhere will also benefit from the findings of the study in that they will be in a position to design regulatory policies from a point of knowledge on the relationship between technological capabilities and performance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter establishes the theoretical anchoring and empirical state of literature. Literature review is focused on those theories that give theoretical direction to the study namely: the resource based view and the dynamic capabilities theory.

2.2 Theoretical Framework

This study is grounded using the resource based view and the dynamic capabilities theory. This theories have been found relevant since they predict the relationship between the variables.

2.2.1 Resource Based View

The resource based view of the firm is attributable to Penrose (1959). It was however not until the late 1980s that the approach became popular in practice and theory. Before the efficiency based perspectives of strategic management came into dominance the market power. According to Learned (2015 the capability of an organization is its demonstrated and potential ability to accomplish against the opposition of circumstance or competition in whatever it sets out to do. According to this position, every organization has actual and potential strengths and weaknesses it is important to try to determine what they are and to distinguish one from the other. Comparing the resource-based approach and the competitive forces approach in terms of their implications for the strategy process is reveals that an entry decision picking an industry based on its structural attractiveness; choosing an entry strategy based on knowledge about competitors' rational strategies and finally, if not already possessed, acquire or otherwise obtain the requisite assets to compete in the market. From this

perspective, the process of identifying and developing the requisite assets is not particularly problematic (Teece, Pissano & Shuen, 1997).

According to proponents of RBV, it is much more feasible to exploit external opportunities using existing resources in a new way rather than trying to acquire new skills for each different opportunity. The RBV model vies organizations as possessing two types of resources; tangible and intangible resources. The resource based view is premised on certain assumptions such as the resources are valuable, rare and inimitable or non transferrable (Amit & Schoemaker, 1993).

2.2.2 Dynamic Capabilities Theory

The dynamic capabilities theory is attributable to David Teece and Gary Pisano in 1994. The theory belongs to the efficiency driven theories together with resource based view. Leonard-Barton (1992) define dynamic capabilities as the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments. Accordingly then, dynamic capabilities can be argued to reflect an organization's ability to achieve new and innovative forms of competitive advantage given path dependencies and market positions. Different approaches view the wealth creation objective and the strategic problem faced by firms differently: the competitive forces framework views it in terms of industry structure, entry deterrence and positioning, the game theory approach views it in terms of interactions between players each with a

set of expectations on how the other will behave, the resource based perspectives base on firm specific resources.

The dynamic capabilities theory supports sustainable competitive advantage or competitiveness. Instead of the resource based thinking, it was proposed that competitive advantage would be attributed to those companies that were able react rapidly and flexibly to product innovation, while simultaneously possessing the capacity to manage firm specific capabilities in such a way as to effectively coordinate and redeploy internal and external competences (Teece et al., 1997). This ability to achieve new forms of competitive advantage by being flexible and fast in dealing with changing market environments is what is referred to as a dynamic capability. A firm's technology can be said to be a source of competitive advantage if that technology cannot is valuable, rare and cannot be imitated and contributes to sustained competitive advantage i.e it cannot be taken away.

2.3 Empirical Review

Literature review reports indicate that firm capabilities influence performance. Mithas et al. (2011) developed a conceptual model linking information technology-enabled information management capability with three important organizational capabilities namely: customer management capability, process management capability, and performance management capability. Mithas et al. (2011) report that these three capabilities mediate the relationship between information management capability and firm performance. They further note that information management capability plays an important role in developing other firm capabilities for customer management, process management, and performance management. Ultimately, these capabilities favorably

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influence customer, financial, human resources, and organizational effectiveness measures of firm performance. These are measures of firm performance.

Further evidences of the relationship between firm capabilities and performance is provided by Guan and Ma (2002). In their study, they considered the role of learning, research and development (R&D), manufacturing, marketing, organizational, resource allocating and strategy planning and the three firm characteristics domestic market share, size and productivity growth rate in determining the export performances for a sample of 213 Chinese industrial firms. They report that export growth is correlated to total improvement in innovation capability. They further report that the core drivers of innovation such as Research and Development, marketing and manufacturing alone cannot lead to growth in exports. On the contrary, learning, organization, resource allocation and strategy planning enable the integration of technology assets that finally leads to enhanced firm competitiveness. The implication is that technological capabilities alone may not lead to superior performance.

Zahra (1996) attempted to establish the influence of technology strategies on the performance of new ventures. Benoi (1994) defines a new venture as companies that are eight years or younger. It is noted that these start ups play a major role in the development of emerging high-technology industries. The researcher distinguishes between corporate-sponsored new ventures i.e. those supported by an established corporation and independent ventures i.e. those founded by independent entrepreneurs. Zahra (1996) observes that these two types of startups frequently battle for industry leadership and financial success. The researcher admits that whereas both venture types

use technology to achieve financial and market success, little is known about the differences in their technology strategies.

According to Chantanaphant (2013) technological capability is widely known as a strategic source of growth and wealth at the national and the firm levels. The implication is that firms can rely on their technological capability as sources of competitive advantage which leads to growth and prosperity. The employment of technology requires a lot of effort at the national and firm levels according to Monopoloulos et al. (2009. Those firms with superior technological capability can secure greater efficiency gains by leading in process innovations and can achieve higher differentiation by innovating products in response to the changing market environment (Tsai, 2004). These empirical reports emphasize the fact that technological capability is a resource that can be exploited for incremental rent by the firm.

Rothaermel and Hess (2007) carried out a longitudinal study and the findings suggest that a firm's innovative output is a positive function of its alliances with new technology providers. This study provides a methodological gap since the current study will be cross sectional by design. Bhatt and Grover (2005) found that organizational learning was significantly related to all other capabilities. These results indicate that it is important to delineate capabilities such as relationship infrastructure that can facilitate differentiation in marketplace, and dynamic capabilities such as organizational learning as an important antecedent to information technology capabilities. Alsamydai, Yousif, Al Khasawneh (2012) found that factors such as: effectiveness of data management, value added services, level of technological knowledge and awareness were correlated to profitability. This study was carried out in India. Kemboi (2018) studied the influence of technology on financial performance of commercial banks only. Kemboi (2018) was only interested in finacial

performance as the dependent variable. The current study considers both financial and non financial performance.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter on the research methodology details the broad plan that the researcher rolled out to answer the research question. It contains the research design, the population, the data collection methods and data analysis.

3.2 Research Design

A research design provides guidelines on how the objectives of the study will be met (Hall, 2013). A census survey was used in the current study. In a census, the researcher takes into account all the members of the population. Censuses are recommended when the population is not considered very large and in instances where sampling would unfeasibly lower the number of subjects (Churchill, 2000).

A survey design is one whereby the researcher has a number of respondents and according to their judgment the only way to collect proper information is by surveying the sample or population members. Surveys require data collection by use of questionnaires.

3.3 Population of the study

The population represents all the elements, objects, persons or events in the study. The population of the current study consisted of all commercial banks in Kenya as at 31st December 2018. As at this date there were 41 commercial banks in Kenya according to the Central Bank of Kenya, 2018 reports. This number was of course adjusted to accommodate recent mergers and acquisitions in the commercial banking

industry in Kenya. This study was a census study given the small number of respondent institutions.

3.4 Data Collection

Both secondary and primary data was collected in this study. Primary data was collected using a questionnaire. The questionnaire consisted of three parts : Part A was be on demographic information about the respondent commercial bank. Demographic information sometimes finds application in the analysis especially when the researcher is of the opinion that certain demographic characteristics are correlated to one or more of the variables under study; Part B collected data on Firm level technology capabilities i.e the independent variable in this study and Part C collected information on performance.

Secondary data on financial performance was collected from the reports of the NSE for the listed commercial banks and from Central Bank of Kenya Reports for the other banks. Both NSE and the Central Bank are credible sources of secondary data. However, this data was still checked for relevance in terms of time and other considerations.

3.5 Data Analysis

Data collected was subjected to editing and checking for completeness of questionnaires. The good questionnaires were then coded and responses captured into SPSS for further statistical manipulation. Descriptive statistics such as mean, standard deviation and co-efficient of variation was computed. Inferential statistics were used to determine the nature of the relationships between the independent and the dependent variables. Correlation and simple regression analysis was used to infer relationships.

CHAPTER FOUR : DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

This chapter contains the presentation and analysis of data. Data is presented using tables and percentages. Inferential statistics have been performed using simple regression analysis.

4.2 Demographic Characteristics of the Respondent institutions

This section was designed to capture information on pertinent demographic information on respondent banks.

4.2.1 Year of establishment

This section sought to establish the age of the bank. The responses are presented as follows:

Table 4.1 Age of the Bank

No. of years in operation	Number
Below 5 Years	1
5-10 years	5
10- 15 years	11
Above 15 years	24
Total	**41**

Source: Research Data: 2019

From the findings in Table 4.1, it is indicated that 17 banks have been in operation for 15 years and below. A majority of the respondent institutions indicate that they have been in operation for over 15 years i.e 24 banks.

4.2.3 Number of Branches

This question was meant to establish the number of branches the bank has in the market. There is a correlation between the number of a bank's branches and its size. The findings are as follows:

Table 4.2 Number of Branches

Number of Branches	Number
Less than 10	7
10-20	8
20-30	18
30-40	5
Above 40	3
Total	**41**

Source: Research Data, 2019

Table 4.2 on the number of branches operated by the bank shows that a majority of the banks operate between 10 and 40 branches. Only 3 banks indicated that they operated more than 40 branches. Branch network has been reported to be correlated with size of a bank.

4.3 Descriptive Statistics

The following presents the descriptive statistics of the data. Descriptive statistics are meant to provide the researcher with an understanding of the spread of the data. The findings follow:

4.3.1 Transformation Capability

Respondents were required to respond to the statements provided on a scale of 1 to 5. The findings are as presented.

Table 4.3 Transformation Capability

STATEMENT	Mean	Std, Dev
Everyone is aware of the processes in the bank	4.908	.089
We continuously train on emerging technologies	4.879	.067
We outsource training on emerging technologies	4.089	.045
We optimally utilize existing technology	4.765	.143
Our institution continuously generates new processes	3.980	.075

Source: Research Data, 2019

On transformation capabilities, the statement on everyone in the bank being aware of the processes was heavily supported (Mean= 4.908, Std. Dev=.089). This shows that banks invest heavily in ensuring awareness of the bank's processes. Banks also indicated that they continuously train their workforce on emerging technologies (Mean= 4.879, Std Dev=.045). Statements on optimal utilization of resources and outsourcing training on emerging technologies were also heavily supported with means in excess of 4.000.

4.3.2: Vending Capability

Respondents were required to respond to the statements provided on a scale of 1 to 5. The findings are as presented.

Table 4.4 Vending Capability

Statement	Mean	Std. Dev
We consider our marketing team to be superior to competition	4.088	.076
We avail our products conveniently	4.567	.043
We have a superior number of outlets compared to competitors	3.098	.678
We market through all available channels	4.768	.056

Source: Research Data, 2019

According to Table 4.4, the statement on marketing through all available channels was supported by most institutions (Mean= 4.768, Std, Dev= .056). This is explained by the fact that one of the recent developments in the industry is marketing through agents and a lot of online presence. Statements on availing products conveniently were also heavily supported with means I excess of 4.000.

4.3.3 Acquisition Capability

Table 4.5 Acquisition Capability

STATEMENT	Mean	Std. Dev
The bank gets new vendors e,g agents easily	3.786	.078
The bank has no challenges in getting suppliers	3.434	.023
The bank has a full an independent procurement team	4.342	.043
The bank profiles suppliers before admitting them	4.657	.067

Source: Research Data, 2019

According to Table 4.5, respondents indicated that they profile suppliers before admitting them as suppliers.(Meam=4.657, Std Dev=.067). The fact that banks have full fledged and independent procurement teams was supported by a sizeable number of respondents

(Mean=4.342, Std Dev. = .023). However respondents were not bin complete agreement to statements on having challenges and getting new vendors easily.

4.3.4 Modifying Capability

Table 4.6 Modifying Capability

STATEMENT	Mean	Std. Dev
We review our management systems frequently	4.876	.089
We align our management systems to industry practices	3.789	.056
We get inputs from various stakeholders on improvement of management	4.567	.034
We outsource consultants on management improvement	3.654	.023

Source: Research Data, 2019

Table 4.6 represents the modifying capabilities of the respondent bank. The findings indicate that most bank managers agreed with the statement on reviewing their management systems frequently (Mean= 4.876). Managers also indicated that they valued inputs from their stakeholders greatly (Mean= 4.567). Statements on aligning

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management systems to industry practices and outsourcing of consultants were not as heavily supported.

4.3.5 Redesigning Capability

Table 4.7 Redesigning Capability

STATEMENT	Mean	Std. Dev
We are continuously seeking product improvement	4.765	.987
We involve our customers in new product design	4.564	.453
We benchmark against competition when developing new products	3.657	.342
We align any new products to the needs of our market	4.656	.656

Source: Research Data, 2019

Table 4.7 above shows that banks are continuously seeking product improvement (Mean=4.765). The respondent institutions also indicated that they align any new products with the needs of their market (Mean= 4. 656). Statement on involvement of customers in new product design was also heavily supported. Banks, however, do not appear to be interested in the activities of their competitors.

4.3.6 Generating Capability

Table 4.8 Generating Capability

STATEMENT	Mean	Std.Dev
The bank monitors economic environment before introducing new product	4.345	.656
We consider competitor reactions when launching new products	3.897	.234
We attempt to launch new products related to existing		

	3.987	.656
products		

Source, Research Data, 2019

According to Table 4.8, banks heavily monitor the economic environment before introducing new products (Mean= 4.345). Respondents also indicated that they attempt to launch products that are related to their existing products. Additionally, competitors were also shown to be a consideration when designing and launching new products.

4.3.7 Performance

The following questions where meant to measure the extent to which respondents agreed with the statement provided on a scale of 1 to 5, 1 Do not all agree 5, Totally Agree

Table 4. 9 Performance

STATEMENT	Mean	Std Dev
The number of customer complaints has decreased	4.234	.078
The bank's Return on Assets has gone up	4.787	.034
The bank's market share has increased	3.453	.023

The bank's After tax profits have increased	3.567	.067

Source: Research Data, 2019

On performance, Table 4.9 shows that the return on assets of the banks had gone up (4.787) and the number of customer complaints had also decreased (4.234). Statements on market share and after tax profits were not considered very important.

4.4 Inferential statistics on the relationship between Firm Level Technological Capability and Performance of Commercial Banks in Kenya

To establish the relationship between the variables, regression analysis was carried out and the results and interpretation are presented hereunder:

Table 4.10: Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.607[a]	.368	.312	.4014

Predictors: (constant), Firm Level Technological Capabilities

ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.242	1	2.576	15.845	.002[b]
	Residual	3.112	40	.152		
	Total	**6.354**	**41**			

a. Dependent Variable: Performance of Commercial Banks

b. Predictors: (Constant), Firm Level Technological Capabilities

Coefficients

Model		Un-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.312	.564		3.421	.002
	Firm Level Technological Capabilities	.576	.131	.607	3.786	.001

The inferential analysis above consists of the model fitness, ANOVA table and the Table of Co-efficients. The model fitness indicates that 60.7 % of the dependent variable is explained by the independent variable. The implication is that firm level technological

capabilities explain about 60 % of bank performance. The remaining 40% is explained by other factors . The ANOVA table shows that the relationship between firm level technologies and performance is statistically significant (Sig.=0.002). The beta coeeficients lead to the derivation of the following equation:

Y= 3.312+ 0.607 X₁+ e

Where:

Y= Performance

X_1= Firm level Technology Capability

e = Error Term

4.5 Discussion of the Findings

From the preceding data analysis and presentation, the following is a discussion of the findings. On transformation capabilities, the statement on everyone in the bank being aware of the processes was heavily supported (Mean= 4.908, Std. Dev=.089). This shows that banks invest heavily in ensuring awareness of the bank's processes. Banks also indicated that they continuously train their workforce on emerging technologies (Mean= 4.879, Std Dev=.045). This finding is in line with existing literature (Gulla & Gupta, 2012). Most banks indicated that they use all the available channels for marketing. This finding is consistent with arguments by marketing scholars that marketers ought to penetrate the market by employing multichannel strategies (Kotler, 2000). On acquisition capability, most banks indicated that they have independent procurement departments. This is consistent with practice.

Most mangers also argued that they review their management systems frequently. This is also highly consistent with arguments in empirical literature (Fabrizio, 2005). Lastly, the relationship between firm level technological capability and performance was reported to be statistically significant. This finding is consistent with the postulations of the resource based view. It predicts that resources can be used to gain a competitive advantage and to the extent that firm level technological capability meets the threshold of a resource, the theory is supported.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study, provides a conclusion and finally contains recommendation for both policy and practice.

5.2 Summary

The objective of this study was to determine the relationship between firm level technological capabilities and performance of commercial banks in Kenya. Firm level technological capabilities were operationalized using five dimensions namely; transformation, vending, acquisition, generation and redesigning capabilities. Descriptive results on the five dimensions reported the following; On transformation capabilities, the statement on everyone in the bank being aware of the processes was heavily supported (Mean= 4.908, Std. Dev=.089). This shows that banks invest heavily in ensuring awareness of the bank's processes. Banks also indicated that they continuously train their workforce on emerging technologies (Mean= 4.879, Std Dev=.045). On vending capabilities, the statement on marketing through all available channels was supported by most institutions (Mean= 4.768, Std, Dev= .056).

On acquisition capabilities, respondents indicated that they profile suppliers before admitting them as suppliers.(Meam=4.657, Std Dev=.067). The fact that banks have full fledged and independent procurement teams was supported by a sizeable number of respondents (Mean=4.342, Std Dev. = .023). However respondents were not bin complete

agreement to statements on having challenges and getting new vendors easily. In relation to redesigning the study showed that banks are continuously seeking product improvement (Mean=4.765). The respondent institutions also indicated that they align any new products with the needs of their market (Mean= 4. 656). On generation banks indicated that they heavily monitor the economic environment before introducing new products (Mean= 4.345).

5.3 Conclusion

It can be concluded that banks have made it serious business to ensure every employee is aware of the processes in the bank. Processes are part of an organization's technology and therefore it behoves the management to enlighten all employees on this. Banks also appear to be investing in continuously training their employees especially on emerging technologies and new processes. It can also be concluded that most banks are availing their products in markets through all the avialble channels. This is possibly due to the fact that bank services can be distributed through multiple channels.

The inferential analysis consisted of the model fitness, ANOVA table and the table of Co-efficient. The model fitness indicated that 60.7 % of the dependent variable is explained by the independent variable. The implication is that firm level technological capabilities explain about 60 % of bank performance. The remaining 40% is explained by other factors. The ANOVA table shows that the relationship between firm level technologies and performance is statistically significant (Sig.=0.002). The conclusion is that the propositions of the resource based view are upheld in this study. The resource based theory postulates that firm resources can be used to create competitive advantage

for that firm. The fact that the relationship between firm level technological capabilities and performance is significant confirms this.

5.4 Recommendations

The researcher makes the following recommendations to practice and for further research;

5.4.1 Recommendations for Practice

The findings indicate a statistically significant relationship between firm level technological capabilities and firm performance. Managers of commercial banks therefore ought to realize that investing in firm specific technological capabilities will give the firm competitive4 advantage or enhanced performance.

5.4.2 Recommendations for further Studies

The researcher recommends that further studies be carried with the same variables but in different settings i.e contexts. This will show how strong the predictor model is even when circumstances are changed.

The researcher additionally recommends studies in which each of the indicants of firm level technological capabilities is measured against performance individually.

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QUESTIONNARE

DEMOGRAPHIC INFORMATION

1. Name of Bank..

2. Year of Establishment

3. Number of Branches

   ( ) Less than 10 branches

   ( ) 10- 20 Branches

   ( ) 20- 30 Branches

   ( ) Over 30 branches

4. Asset base

   Less than sh. 2 billion

   ( ) 2- 5 billion shillings

   ( ) 5- 10 billion

   ( ) Over 10 billion

PART B: FIRM LEVEL TECHNOLOGICAL CAPABILITY

The following questions where meant to measure the extent to which respondents agreed

with the statement provided on a scale of 1 to 5, 1 Do not all agree 5, Totally Agree

Part B1: TRANSFORMATION CAPABILITY

STATEMENT	1	2	3	4	5
Everyone is aware of the processes in the bank					
We continuously train on emerging technologies					
We outsource training on emerging technologies					
We optimally utilize existing technology					
Our institution continuously generates new processes					

PART B 2: VENDING CAPABILITY

STATEMENT	1	2	3	4	5
We consider our marketing team to be superior to competition					
We avail our products conveniently					
We have a superior number of outlets compared to competitors					
We market through all available channels					

PART B3: ACQUISITION CAPABILITY

STATEMENT	1	2	3	4	5
The bank gets new vendors e,g agents easily					
The bank has no challenges in getting suppliers					

The bank has a full an independent procurement team					
The bank profiles suppliers before admitting them					

PART B4: MODIFYING CAPABILITY

STATEMENT	1	2	3	4	5
We review our management systems frequently					
We align our management systems to industry practices					
We get inputs from various stakeholders on improvement of management					
We outsource consultants on management improvement					

PART B5: REDESIGNING CAPABILITY

STATEMENT	1	2	3	4	5
We are continuously seeking product improvement					
We involve our customers in new product design					
We benchmark against competition when developing new products					
We align any new products to the needs of our market					

PART B 6: GENERATING CAPABILITY

STATEMENT	1	2	3	4	5
The bank monitors economic environment before introducing new product					
We consider competitor reactions when launching new products					
We attempt to launch new products related to existing					

products					

PART C: PERFORMANCE

The following questions where meant to measure the extent to which respondents agreed with the statement provided on a scale of 1 to 5, 1 Do not all agree 5, Totally Agree

STATEMENT	1	2	3	4	5
The number of customer complaints has decreased					
The bank's Return on Assets has gone up					
The bank's market share has increased					
The bank's After tax profits have increased					