

**COMPETITIVE STRATEGIES INFLUENCING GROWTH OF
SELECTED PUBLIC UNIVERSITIES IN KENYA**

BY

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UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

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**A Project submitted to the Chandaria School of Business in Partial Fulfillment of
the Requirement for the Degree of Masters in Business Administration (MBA)**

UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

SUMMER 2017

STUDENT'S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University in Nairobi for academic credit.

Signed: _____ **Date:** _____

Winfred Njoro (ID 646141)

This project has been presented for examination with my approval as the appointed supervisor.

Signed: _____ **Date:** _____

Dr. Joyce Ndegwa

Signed: _____ **Date:** _____

Dean, Chandaria School of Business

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DEDICATION

I dedicate this study to my daughter Layla Nicole Wambui

ABSTRACT

The current operational set up in Kenya's higher education sector is a dynamic one and highly competitive with the emergence of many private universities. Competitive strategies employed by firms in their operations vary widely depending on the operating environment. Limited studies have been done to determine the competitive strategies influencing growth on public universities in Kenya. As a result there have been inadequate government policies which has ultimately seen sprouting of many private universities, public universities have been undergoing challenges to survive and compete ineffectively and more technical colleges were awarded charters to become fully fledged universities. Against this backdrop, the study sought to carry out an analysis to establish how Competitive Strategies influence growth in the selected public Universities. More specifically, the study sought to answer the questions, does technology influence growth in public universities? Does diversification influence growth in public universities? And does innovation influence growth in public universities? The study adopted the descriptive research design. There were three selected public Universities where the research was carried out. The target population was drawn from the senior management levels selected on a stratified sampling technique. The sample was 114, arrived at as guided by Yamane's formula. The researcher used primary data to accomplish the research objectives. Both descriptive and inferential statistics were employed in data analysis. Findings reveal that technology has to a great extent influenced the growth of a majority of the selected public universities surveyed. It was also established that a majority of the selected universities surveyed employs diversification as a means of not only survival and sustenance of the institutions through building synergies in resource utilization and spreading risk, but also as a means of enhancing growth. The study further found that the growth exhibited in the selected universities can to a large extent be attributed to innovation thereof. Most notably, expansion of the respective universities and introduction of new programs has significantly attributed to research and development in innovation. The study concludes that the adoption of innovation, diversification and technology strategies among the selected universities have led to significant growth across the institutions.

Study recommends that public universities work on creating adopting more recent technological innovations that will assist in the service delivery and therefore lead to reduced cost of operations. Greater diversification should be encouraged instead of relying on government funding as this will enable Universities be more self sufficient and will in turn spur growth. Consequently, it is recommended that Universities adopt cutting edge technology that will help in the dissemination of knowledge away from the brick and mortar classroom that has been the traditional way of delivering knowledge as the output of qualified graduates is a key measure of measuring growth in Universities.

TABLE OF CONTENTS

STUDENT’S DECLARATION	ii
COPYRIGHT	ii
ACKNOWLEDGEMENT	iii
DEDICATION	v
ABSTRACT	vi
TABLE OF CONTENTS	viii
LIST OF TABLES	xi
LIST OF FIGURES	xii
CHAPTER ONE	1
1.0 INTRODUCTION	1
1.1 Background of the Problem.....	1
1.2 Statement of the Problem.....	9
1.3 Purpose of the Study	12
1.4 Research Questions.....	12
1.5 Significance of the Study	12
1.6 Scope of the Study	13
1.7 Definitions of Terms.....	13
1.8 Chapter Summary	14
CHAPTER TWO	15
2.0 LITERATURE REVIEW	15
2.1 Introduction.....	15
2.2 Influence of Technology on the Growth of Selected Public Universities	15
2.3 Influence of Innovation on the Growth Of Universities	19

2.4 Influence of Diversification to Growth of Public Universities	23
2.5 Chapter Summary	28
CHAPTER THREE	29
3.0 RESERCH METHODOLOGY	29
3.1 Introduction.....	29
3.2 Research Design.....	29
3.3 Population and Sampling Design.....	29
3.6 Data Analysis Methods.....	32
3.7 Chapter Summary.....	33
CHAPTER FOUR	34
4.0 RESULTS AND FINDINGS	34
4.1 Introduction.....	34
4.2 Response Rate.....	34
4.3 Validity Test Results.....	34
4.4 Demographic Information.....	35
4.5 Influence of Technology On The Growth Of The University	39
4.6 Influence of Diversification on the Growth of the University	40
4.7 Influence of Innovation on the Growth of the University.....	42
4.8 University Growth	44
4.9 Pearson Correlation Analysis.....	45
4.10 Regression Analysis.....	46
4.11 Chapter Summary.....	49
CHAPTER FIVE	50
5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS	50
5.1 Introduction.....	50

5.2 Summary of the findings.....	50
5.3 Discussions of the Findings	50
5.4 Conclusion	56
5.5 Recommendations.....	57
REFERENCES.....	59
Appendix I: Introduction Letter.....	64
Appendix II: Questionnaire.....	65

LIST OF TABLES

Table 4.1 Response Rate.....	34
Table 4.2 Reliability Coefficients.....	35
Table 4.3 Response by Gender	35
Table 4.4 Influence of Technology on the Growth of the University.....	39
Table 4.5 Influence of Diversification on the Growth of the University.....	41
Table 4.6 Influence of Innovation on the Growth of the University	43
Table 4.7 Growth of the University	45
Table 4.8 Pearson Correlation Matrix.....	46
Table 4.9 Model Goodness of Fit	47
Table 4.10 Analysis of Variance (ANOVA).....	48
Table 4.11 Regression Coefficient Results.....	48

LIST OF FIGURES

Figure 4.1 Response by Age	36
Figure 4.2 Response by Education Level	37
Figure 4.3 Response by Length of Service	38

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Problem

According to Kaufmann and Shams (2016), growth is operationally defined as positive shifts in business assets, turnover and number of employees. Growth is something which most institutions strive, regardless of their size. Small firms want to get big, big firms want to get bigger and better. Organizational growth, however, means different things to different organizations. There are many parameters a company may use to measure its growth. The firms may use physical expansion, revenues, success of a product line, or they may decide to use increased market share. Ultimately, success and growth is to be gauged by how well a firm does relative to the goals it has set for itself. In the current dynamic business environment, firms need to constantly focus on improving their competitive strategy.

Growth of public university in the context of the present study can be conceptualized in two ways; introduction of new universities either independently or by upgrading of various tertiary and/or other institutions of high learning; and the strategic expansion of the existing universities in response to the growing demand in higher education. In the former case, the government has in the recent past upgraded several middle level colleges to university college status and also elevated many public university colleges to fully-fledged universities, many of them removed from urban centers. The establishment of new public universities and university colleges in Kenya became increasingly important at a time when the government was seeking ways of admitting at least 40,000 extra students, culminating from the free primary and secondary education (Odhiambo, 2013). From a strategic point of view, the present study sets out explore how public universities in Kenya have responded to the observed soaring demand for higher education in Kenya as more school leavers dash for university education to enhance their chances in the labor market.

Competitive strategy refers to the way a firm can gain distinctive advantage over others operating in a similar market. Rivalry is a key ingredient to improvement and innovation. In the absence of competition, strategy would be irrelevant. Porter (1998) opines that the

objective of a competitive strategy is to establish a sustainable and profitable position against competition in the industry leading to the realization of competitive advantage. To ensure survival and success, firms need to develop the capability to manage threats and exploit emerging opportunities promptly. This requires formulation of strategies that constantly match capabilities to environmental requirements. Furthermore, understanding competitive advantage is a crucial process for decision makers and to make it more complicated is that the ability to develop a sustainable competitive advantage is increasingly becoming rare. Therefore, there is need for a sustained competitive advantage on enduring value differentiation between the services of the organization from those offered by the competitor in the views of the customers. As a result organizations must scan the environment in a proper manner to ensure that they anticipate what the rapidly changing environment will be like, and change their structures, cultures and other relevant factors so as to reap the benefits of the time (Peterraf, 2013).

Strategy goes beyond operational improvement. Tactics easily imitated do not constitute a strategy. Simply improving operations or quality does not constitute a competitive strategy. A competitive strategy involves the analysis of the structure and competitors existing in the industry in order to identify an optimal position. A competitive strategy also integrates the strengths and resources of the firm to develop a competitive advantage. A sustainable competitive strategy requires continuous improvement with strategic continuity.

Porter (1980) identifies four fundamental competitive strategies; cost leadership, differentiation, focus on cost and focus on differentiation. It is from these four competitive strategies that firms then derive their competitive advantage and utilize the competitive advantage as an ingredient in their quest for growth. The Resource-Based View model proposed by Wernerfelt (1984) on the other hand indicates that a firm can attain competitive advantage to spur its growth by looking at its internal capabilities and developing them instead of focusing on the external competition.

Johnson and Scholes (2008) define diversification as a strategy that takes the organization away from its current market or products or competences. Ernest (1995) defines diversity as a type of approach employed in reaction to competition, with a view to increase sales and profits as well as to expand the company's market (Nayyar & Praveen, 1992). Diversity has

become an indispensable necessity for companies' survival and growth owing to the susceptibility of firms that are specialized owing to the unexpected and rapid changes of the environment. From the foregoing, diversity strategy can thus be defined as the degree of partaking in various business ventures. Diversity can be grouped into two: related diversity and unrelated diversity.

Related diversity is attained when a firm has various similar business units with either intangible or tangible associations among the business units. As such, related diversity culminates into the mutual information transfer between department managers and organization managers. In the unrelated diversity on the other hand, as Rowe, Glenn, Wright and Patrick (1997) opine, diversity is attained when a firm has various dissimilar business units. Unrelated diversity kind of diversity causes companies to collect cash flows from departments and reallocate them to the departments unrelated diversity strategy is therefore the result of diversification among different industries Kochhart, Hit (1998), the difference between related and unrelated diversity is exactly connected to the sources of assets available to the company.

Trott (2012) defines Technology as the knowledge, products, processes, tools, and systems used in the creation of goods or the provision of services. Technology is seen as a core driving force of modern business, be it part of the core business or as a support of the core business. A good understanding of technology and what it can achieve can propel a business to great heights in terms of organizational success. This understanding of technology and its influence of on strategy is critical to developing strategy that is relevant, directed and ensures the success of the organization. Management therefore need to be made to understand how and to what extent technology influences strategy and how a good understanding of this technology can facilitate the formulation of strategy that will lead to greater productivity and profitability (White & Burton, 2011).

Trott (2012) defines innovation as the process where new and improved products, processes, materials, and services are developed and transferred to a plant and/or market where they are appropriate. The term "innovation" is used a great deal in advertising, in speeches and in describing one's company or organization. It certainly seems that the term "innovation" is

used much more than the actual innovation that takes place. Raath (2012) states in his article, *When Innovation Fails*, that “even when organizations are not necessarily doing anything ground breaking, or new, they still call it ‘innovation.’ Just because it just sounds grander.” He continues, “These are not innovations - rather they are simply improvements.”

Christensen, Clayton, Eyring and Henry (2011) define two kinds of Innovation. Sustaining Innovation is seen as a process, system or modification that improves an existing product or system. It may make it better, bigger, more efficient and/or more beneficial to the end user. An example of sustaining innovation is a new, updated model of a car that gets better gas mileage. Disruptive Innovation on the other hand is seen as innovation that creates significant change. This represents an innovation that “brings to market a product or service that is not as good as the best traditional offerings, but is more affordable and easier to use (particularly in the beginning)” of the product life. Christensen, Clayton, Eyring and Henry (2011) “Disruptive innovation replaces the original complicated, expensive product with so much more affordable and simple product that a new population of customers now has enough money and skills to buy and readily use the product.

Daniel (2012) defines university as an institution of learning of the highest level, the institution constitute programs of graduate studies together with several professional schools: Bachelor, Master, doctorate, and diploma. It is an institute of higher education and research, which grants academic degrees at all levels, in a variety of subjects as guided by the university statutes. A university provides both tertiary and quaternary education. In Kenya, Public Universities were created under the Act of parliament to carry out research using their variety of qualified staff in different disciplines.

The privatization of Universities and linearization of the Kenya economy in the 1990s changed the competitive environment in which the service industries operated. This contributed to the universities repositioning themselves for the challenge and development of both strategic and performance objectives. Public universities, as other government institutions operate within such an environment and are therefore environment dependent.

With the increase of public universities from seven (7) to over thirty three (33) public universities in the last 10 years, there has been drastic change in the operating environment of public universities. Whereas the Government aims at increasing access to University education to more of its population there is increased competition for the available students as students increase their preference of universities. Coupled with the fact that Private universities are also competing for the same students, Public universities have had to change tact to increase their growth while remaining relevant in the new competitive environment (Gakure, Muriu and Orwa, 2011).

As a result of the liberation, turbulence in the economy, and new government policies, public universities have been undergoing changes to survive and effectively compete Gakure, Muriu and Orwa (2011). According to Commission of University Education (CUE) 2015, there are 23 Public Chartered Universities, 10 Public University Constituent Colleges, 17 Private Chartered Universities, 5 Private Constituent Colleges and 14 Universities operating with letters of Interim Authority and lastly 1 University is listed as a Registered Private Institution. This brings the total number of Universities to 70 Universities in Kenya. This is summarized as below.

Table 1.1

Type of Institution	Count
Public Chartered Universities	23
Public University Constituent Colleges	10
Private Chartered Universities	17
Private Constituent Colleges	5
Universities operating with letters of Interim Authority	14
Registered Private Institution	1
Total	70

Source: CUE (2015)

In almost all African countries, public universities receive financial assistance from the government. The result is that the level of higher education facilities in Kenya has for long depended on the soundness of the national economic performance. From the 1980s, most African countries experienced financial constraints due to poor economic performance and rapid population growth, added to the need to provide other services like primary education, food and shelter. University education therefore, has faced severe competition from other sector for limited government funds Gakure, Muriu and Orwa (2011),

Public universities are established and continue to be established in Kenya in order to improve the level of higher education, learning and absorption of swelling number of students from high schools. The rapid expansion of university education is a spontaneous response to the high demand. With the increasing large flows of students from lower levels of education such as high schools, popular demand for higher education increases Gakure, Muriu and Orwa (2011) hence growing urge to have more universities set up to accommodate the increasing demand. According to Gudo, Olel and Oanda (2011), the demand for university education in Kenya has significantly increased and continues to swell. Many secondary school graduates and the working class look for opportunities to pursue university education.

The result of this clamor for University education has led to rapid changes in a once relatively stable industry. Public university government funding has since the mid-1980s declined. The decline has been largely attributed to among others, changing priorities of donors including the Kenya National Council of Science and Technology and the World Bank, changes in international economic trends, changes in political and legislation trends as well as changing government regulations and rules and in reaction to national economic turbulence(Onyango, 1996). In an effort to adjust to these changes, public universities have expanded the capacity to handle extra students and response to the need for education by students. They have also developed market customized courses to fit in the different market segments.

The universities have also formed linkages with other supplementary institutions such as middle level colleges, hospitals and research institutions with an effort to enhancing market sustainability and forming linkages with customers to help in increasing market growth and sustainability. Having a convenient location in most of the major towns in Kenya and a wide branch network increases market growth and sustainability. However, it is not clear how these competitive strategies have affected the performance of public universities in Kenya.

This research therefore, seeks to fill the gap by carrying out a research on competitive strategies that Public Universities will need to adopt in order to stimulate their growth, to point out possible restrains that may restrict their growth and offer solutions from past experience.

The inception of the University of Nairobi is traced back to 1956, with the establishment of the Royal Technical College which admitted its first lot of A-level graduates for technical courses in April the same year. The Royal Technical College was transformed into the second University College in East Africa on 25th June, 1961 under the name Royal College Nairobi and was admitted into special relations with the University of London and immediately began preparing students in the faculties of Arts, Science and Engineering for award degrees of the University of London. Meanwhile, students in other faculties such as the Faculty of Special Professional Studies (later renamed Faculty of Commerce) and Faculty

of Architecture continued to offer diplomas for qualifications of professional bodies/institutions.

On 20th May 1964, the Royal College Nairobi was renamed University College Nairobi as a constituent college of inter-territorial, Federal University of East Africa, and henceforth the enrolled students were to study for degrees of the University of East Africa and not London as was the case before. In 1970, the University College Nairobi transformed into the first national university in Kenya and was renamed the University of Nairobi. Currently The University underwent a major restructuring in 1983, resulting in decentralization of the administration, by creation of six colleges headed by principals. Currently the University is managed through the following: College of Agriculture and Veterinary Sciences, College of Architecture and Engineering, College of Biological and Physical Sciences, College of Education and External Studies, College of Health Sciences and College of Humanities and Social Sciences (The University of Nairobi, 2006).

Jomo Kenyatta University of Agriculture and Technology is situated in Juja, 36 kilometers North East of Nairobi, along Nairobi-Thika Highway. On 1st September 1988, H.E. Daniel Arap Moi, declared JKCAT a constituent College of Kenyatta University through a legal Notice, under the Kenyatta University Act (CAP 210C). The name of JKCAT officially changed to Jomo Kenyatta University College of Agriculture and Technology (JKUCAT). It was finally established as a University through the JKUAT Act, 1994 and inaugurated on 7th December 1994.

Currently JKUAT has four(4) colleges which are then divided into fifteen(15) schools namely School of Architecture and Building Science, School of Mechanical, Manufacturing and Materials Engineering (SoMMME), School of Civil Engineering and Geomatic Engineering (SCEGE), School of Electrical, Electronic & Information Engineering (SEEIE), School of Law, School of Physical Sciences (SPS), School of Mathematical Sciences (SMS), School of Computing and Information Technology (SCIT), School of Business, School of Entrepreneurship, Procurement & Management, School of Communications & Development Studies (SCDS), School of Biosystems and Environmental Engineering (SOBEE), School of Open, Distance and eLearning (SODeL), School of Biological Sciences and School of Medicine.

In 1965, the British government handed over the Templar Barracks in Kahawa, to the newly formed government of Kenya. The barracks were then converted into a college called Kenyatta College. In 1970, Kenyatta College became a constituent College of the University of Nairobi, and its name changed to Kenyatta University College, following an Act of Parliament. In 1985, it was granted full university status, and was renamed Kenyatta University. Currently the University has twenty (20) Schools namely; School of Agriculture And Enterprise Development, School of Applied Human Sciences, School of Architecture and the Built Environment, School of Business, School of Creative Arts, Film & Media Studies, Digital School of Virtual and Open Learning, School of Economics, School of Engineering And Technology, School of Environmental Studies, School of Education, Graduate School, School of Hospitality & Tourism, School of Humanities & Social Sciences, School of Law, School of Medicine, School of Nursing, School of Pure And Applied Sciences, School of Public Health, School of Security, Diplomacy and Peace Studies, School of Visual And Performing Arts.

1.2 Statement of the Problem

Competitive strategies employed by firms in their operations vary widely depending on the operating environment. The current operational set up in Kenya's education sector is a dynamic one and highly competitive with the emergence of many private universities. The privatization of university education and liberation of student selection since the formation of Commission of University Education in 2012 changed the environment in which the public universities operated. To ensure survival and sustainability in the market place, the public universities need to adopt competitive strategies to ensure that they outperform their competitors that is, gain competitive advantage over other universities.

Public universities following competitive strategies may realize a performance advantage over competitors that pursue other generic strategy type or those that are stuck in the middle. The competitive strategies include marketing portfolios with adequate human and capital resources, social responsibility activities, brand images, convenience retailing,

marketing share position and length of time in the industry (O'Regan, Kling, Ghobadian & Perren, 2012). Through studies that have been done in African universities, government and international donors have challenged universities in Africa to justify their existence and their claims to the massive funds allocated to them. This has resulted in a sharp increase in cumulative recurrent deficits from Ksh. 22,705,554 in 1991 to Ksh. 503,280,937 in 2006 and then to Ksh.1, 336,099,937 in 2012 (Mwiria, Ngethe & Ngome, 2013). This is as a result of demand posed by the increasing number of students over the years. A number of studies have been done on competitive strategies but under different contexts in Kenya, including commercial banks, real estate and the telecommunication industry.

Ngome (2013) focused on competitive strategies by commercial banks in Kenya. The study revealed that banks in Kenya use various means in order to remain competitive. The study also concluded that expansion into other areas by opening new branches has also been used as a strategy; Ngethe (2013) did a survey of competitive strategies of real estate firms in the perspective of Porters generic model. These studies revealed many real estate firms have not fully employed adequate competitive strategies that would otherwise lead to the growth of the real estate firms. The study however focused on the real estate industry, which is both conceptually and contextually different from the public university education context.

Mukua (2011) in his study "Diversification as a competitive Strategy in Radio Africa Ltd." found that diversification is a strategy that can drive a company towards achieving a competitive advantage and or benefits. He describes diversification as corporate level strategy which is based on task of crafting and implementing action plans to improve on the attractiveness and competitive strategies of a company's business portfolio. Ansoff and McDonell (2010), states that there are key reasons why organizations think of or opt to pursue diversification strategy. First, when their objective cannot be achieved by pursuing the existing products/services. Secondly, the changes in business environment, both threatening the future of current strategies and throwing up new opportunities. This study therefore seeks to establish whether the same reasons could also apply in the application of Diversification in Public Universities.

Kaskoya (2010) in his study, "The use of strategic positioning to achieve sustainable competitive advantage at Safaricom Limited" found out that cutting edge technology was helping Safaricom limited in achieving a competitive advantage. This research therefore seeks to fill in the gap drawn by identifying how technology can be used as a competitive advantage in spurring competitive advantage in selected public Universities. Kimani (2009) in his study, "Strategies adopted by Postal Corporation of Kenya to Gain Competitive Advantage in the Mail Sub Sector in Kenya" found that Postal Corporation of Kenya has adopted various strategies to gain competitive advantage though they are slow in bearing fruits hence indicating challenges in strategy planning and implementation. The study further recommends adoption of Ansoff's product market strategies for growth and competitive advantage as well as cooperative strategies for gaining competitive advantage in the mail sub sector in Kenya.

Sifuna (2014) in her study, "Effect of competitive strategies on performance of public universities in Kenya" established that universities should embrace and invest in cost leadership strategies most especially forming linkages with service providers, suppliers and other supplementary institutions since it will enable them achieve competitive advantage as compared to other universities that are not investing in these strategies and that universities should first understand and know their motive and capability before adopting a certain competitive strategy for example market focus.

Despite this limited studies have been done to determine the competitive strategies influencing growth on public universities in Kenya. As a result there have been inadequate government policies which has ultimately seen sprouting of many private universities, public universities have been undergoing challenges to survive and compete effectively and more technical colleges were awarded charters to become fully fledged universities. Previous studies have therefore been limited as few have sought to address competitive strategies that Public Universities can use to influence their growth. This research is therefore motivated by the need to fill this gap in knowledge. The study therefore sought to establish the effect of competitive strategies on growth of public universities in Kenya.

1.3 Purpose of the Study

The purpose of this study was to carry out an analysis to establish how Competitive Strategies influence growth in the selected public Universities.

1.4 Research Questions

To achieve the above objectives, the study sought to answer the following questions.

1.4.1. Does Technology Influence Growth in Public Universities?

1.4.2. Does Diversification Influence growth in Public Universities?

1.4.3. Does Innovation Influence Growth in Public Universities?

1.5 Significance of the Study

The study is of benefit to policy makers, the government and other researchers and scholars in the following ways:

1.5.1 The Public Universities

Public universities as the target population of the study would benefit with the findings of this study as it would be enlightened on the various competitive strategies the universities can adopt to influence their performance. Information gathered through this study would help the universities to formulate policies beneficial in the best competitive strategies in the various universities in Kenya.

1.5.2 Policy Makers

This study would be important to the policy makers in the public universities as they would be able to know for certain that competitive strategies; technology, management or innovation play a major role in shaping their operations and how they affect performance and at the same time they would know which competitive strategies to use in order to remain competitive.

1.5.3 Researchers and Scholars

The results of this study would also be valuable to researchers and scholars, as it would form a basis of further research. The students and academicians would use this study as a basis for discussions on competitive strategies.

1.6 Scope of the Study

The study was restricted to selected Public Universities: Kenyatta University, the University of Nairobi and Jomo Kenyatta University of Agriculture and Technology they all have their main campuses in Nairobi where the research was undertaken. This study was conducted between the months of March 2017 to April 2017. The study covered managerial level, staff in the selected public universities.

The researcher assumed that the country would be stable and that everything would be normal without interruptions hence the time frame for data collection would be as stipulated. However some of the limitations in this study include, Unavailability of interviewees, some interviewees may be reluctant to give detailed information on the strategies that their Universities have adopted for competitive advantage fearing the same could be leaked to the competitors. The organizations employment secrecy act hindered provision of detailed information by the interviewees. The study however addressed this limitation by assuring respondents that the study would be used strictly for academic purposes and that their identities would remain anonymous.

1.7 Definitions of Terms

1.7.1 Competitive Advantage

Competitive strategy refers to the way a firm can gain distinctive advantage over others operating in a similar market. It is an advantage over competitors gained by offering consumers greater value either by means of lower prices or by providing benefits and services that justify higher prices Barney (2012).

1.7.2 Competitive Strategy

Competitive Strategy is defined as the long term plan of a particular company in order to gain competitive advantage over its competitors in the industry. It is aimed at creating defensive position in an industry and generating a superior ROI: Return on Investment (Johnson, 2012)

1.7.3 Innovation

Barney (2012) defines innovation generally as changing processes or creating more effective processes, products and ideas. For businesses, this could mean implementing new ideas, creating dynamic products or improving your existing services.

1.7.4 Diversification

Johnson and Scholes, (2008) defined Diversification as a growth strategy which takes the organization away from its current markets or product or competencies. Diversification can also be viewed as strategy to enter into a new market or industry which the business is not currently in, whilst also creating a new product for that new market Fitzroy, Ghobadian and Hulbert (2012).

1.7.5 Technology

Technology strategy is defined as a firm's approach to the development and use of technology. Although it encompasses the role of formal Research and Development in organizations, it must also be broader because of the pervasive impact of technology on the value chain.

1.8 Chapter Summary

This chapter has established the background information on Kenyan public Universities. The chapter has shown, in the problem statement, the challenges facing public universities due to lack of competitive strategies to keep them in the industry. In this chapter, back ground of the study, problem statement, scope and limitations of the study have been explored. Chapter two analyzes literature review based on the stated objectives in chapter one. Chapter three covers the population and sampling designs, research design, and data collection and analysis methods. Chapter four covers the results and discussions. Chapter five presents summary of the research findings.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the literature by other authors who have carried out research relating to competitive strategies that have been developed on this topic. The first section determines the influence of technology on the growth of public universities. The second section looks at the influence of diversification on the growth of public universities. The third section looks at the influence of innovation of growth of public universities. The chapter ends with a summary of the literature review.

2.2 Influence of Technology on the Growth of Selected Public Universities

2.2.1 Technology as a Growth Strategy

Technology is one of the macro environment factors that has greatly changed the way organizations operate. It is a source of opportunity to many organizations but can also present a great challenge. Shifts in technology may render some industries more attractive than others. An industry where technology keeps changing more so often may be less attractive than one in which it is stable. Technological shifts are accompanied by cost outlays which at times may be quite high for an organization that does not have sufficient resources making it unable to keep up with the shift and eventually become obsolete. Variyan and Kraybill (1994), in a study of firms in Southern United States, found that the majority of firms analyzed considered that the use of technology is a critical element of their competitive advantages.

2.2.2 Connecting with Students through Technology

A key idea in much of the literature is that students are using web technology, so for universities to use this technology too is seen as positioning the student centrally. Approaches focus on modern students and their use of technology, with authors stressing that we now face increasingly technologically aware students who want and expect to use their own devices in institutions (HEFCE 2009). Cramer and Smith, (2002) state that technology integration must have a purpose in order for it to be beneficial for producing positive results

Steele (2008) asserts that tutors need to understand how to teach students who do not learn as they once did and have grown up with high intensity stimuli such as games, downloads, iPods, blogs, websites, texts and who often have to 'power down' for class. Therefore much of the literature focuses on this existing use of technology as part of students' everyday activities and advocate connecting with this, embracing it and bringing it into the classroom. Anagnostopoulou and Parmar (2009). Because today's children have grown up with a different digital landscape than their teachers (Jukes, 2008), they, most likely, are inspired and motivated by different technology. As students are already using social networking sites, the mobile devices to access them and conducting their lives via text, projects aim to build on what students are familiar with –both in terms of the environments/packages and the skills they have to use them (McDermott and Witt 2009).

Studies urge learning from these 'digital natives' (Trinder 2008), tapping into the 'game generation' (Curran and Forbes 2007), or offering meaningful learning to the 'net generation' (Williams and Chinn 2009). They stress the need to harness and channel the skills of contemporary students, to understand and respond to their experiences (Munro 2006). Technology can therefore give an institution a presence in a large networking world and inspire students about their university and faculty and can even give it the 'cool' factor (Raths 2009). Technology is also seen as appropriate for 'today's' students who have different styles and expectations and who process information differently –such as preferring interactivity and immediacy (Williams and Chinn 2009) and who are using mobiles, IM and SMS more than (say) 'traditional' email. Similarly some suggest students prefer using their own choice of technology that links with their extra-curricular activities and peers (Dempster 2007), arguing that students are using these technologies whether staff like it or not and so institutions cannot ignore technology such as SNS if they want to engage these students and make meaningful connections Bowers, Campbell (2008).

However, literature also reveals that there are considerable skills issues to address. JISC (2009a) state that we may live in a digital age but that a 'digital divide' still exists in terms of access and engagement with technology and individual ability. This divide may be narrowing but it is still there (Hardy 2009) and the National Student Forum notes that there is a 'skills gap' where certain groups of students, such as mature students or those from poorer

backgrounds, may not have had the same access to technology or be as familiar with its language, and may consequently feel intimidated or lacking in confidence when confronted with the need to use it.

Selwyn (2004) argue that the option of ICT does not necessarily alter motivation or disposition. Anderson (2015) too, looking at self-produced knowledge, notes some argue it makes learning more compelling but ‘techno-centric’ assumptions can hide that many don’t have the motivation to engage and that technology may even remove initial attraction. McDermott and Witt (2009) found that their assumptions of a skilled ‘Google generation’ did not readily apply with the students involved in their UsPaCe project, but that involving them in the design process from an early stage was effective in helping users understand the use of the proposed tools. Students therefore don’t necessarily have the assumed skills and institutions need to ensure access, provide skills development and support learners as they start to use technology and learn online (Sharpe and Benfield 2005 and Anagnostopoulou et al. 2008).

According to Odundo, Origa, Nyandega and Ngaruiya (2015), the University of Nairobi has largely employed technology in its interaction with students such that handling administrative processes such as admission, registration for programmes and examination processing are all done by automated computer systems. This has led to increased efficiency in the student processes.

2.2.3 Technology as an Induction Tool into the University

Key features of the schemes are to tackle issues such as lack of preparedness for higher education, improving confidence levels, easing the burden of induction week, avoiding information overload, demystifying jargon, and creating the opportunity for students to ask questions. They strive to engage students early and increase their confidence, knowledge and skills and alleviate the anxiety of starting university. Anagnostopoulou and Parmar (2008) suggest that using technology may assist in easing transition by linking students to support and managing expectations. A number projects focus in part on bringing expectations in line with the reality of academic study (Laing 2005) and to help students know what to expect, see and what university life will be like and to understand what it means to be a student

Hills (2006) and Keenan (2009b) note that offering information and resources before students arrive, in students' own space and time, spreads the load, helps them to absorb information, gain confidence and can help develop early commitment, engagement and perseverance. Students can find induction week overwhelming and therefore such 'transition mechanisms' (Keenan 2006) are important and access prior to induction –to other students, to the course and to the university –is seen as a key step towards providing a successful student transitional experience.

Another aspect of online transition support involves improving orientation activities. Several initiatives have used online games (Piatt 2009, Whitton, 2009 and Curran and Forbes 2007) to tackle this by offering the chance to learn about and explore services and features of the university and surrounding area. A different example is a pre-induction package at the University of Salford, delivered via blackboard, which included welcome podcasts, pre-course reading materials, direct contact information for staff, maps and a helpline (Robinson et al. 2007). Another common feature amongst the literature is the provision of opportunities to meet other students online before arriving, experience social interaction, start to build a community and have access to pastoral support provision (Daly and Thomas 2008). Early formation of support networks and communities can allow students to share their fears with each other and aims to manage or reduce anxiety and offer reassurance (Hills 2006, Watling 2009).

Whereas the above studies focus on technology as an effective means of study and integration of students into the University life, it has mainly been done in developed countries. This study will therefore seek to look at how technology has shaped both the growth of selected Public Universities and how the same can be applied in a developing country like Kenya.

2.3 Influence of Innovation on the Growth Of Universities

2.3.1 Innovation as a Competitive Growth Strategy

Pelegrin and Antunes, (2013) state that a firm is considered innovative when it offers goods and services which did not exist previously, using a new or previously unused organizational method which aids in the production of a new product (nonexistent in the market by then) (Bartes, 2009) agree that the 21st century is based on knowledge, information and innovative economy. Organizations' success depends on employees' knowledge, experience, creative activity and qualification and emphasis is placed on continuous learning and research and development. Already in 1986 Tushman & Nadler stressed that "organizations can gain competitive advantage only by managing effectively for today while simultaneously creating innovation for tomorrow" and suggested that "there is perhaps no more pressing managerial problem than the sustained management of innovation". Ito, Hayashi, Gimenez and Fensterseifer (2012) state that the existing relation between innovation and competitive advantage is seen in the organization's fact to use more efficient its sources, in a way to manage them to generate innovations and those to be subjected to achieve competitive advantage.

Tushman and Nadler (1996) identify visionary leadership and also people, structures and values as important factors that affect whether an organisation realizes benefits from innovation. Innovation is still seen as a critical driver of economic performance. Schumpeter (2005) defines innovation as a means of realizing strategic advantage, and leads to "creative destruction", that is the creation of new rules in place of the old ones with a view to provide new sources of profitability. According to Kangasharju and Pekkala (2002), new products is not sufficient to innovate; the significance of innovation exists in the creation of value for the organization and the customer.

Sawhney (2016) accordingly defines innovation as the consistent creation of new value both for the firm and the consumer through creative change of the dimensions of a system. Education has in this regard been identified as a key factor for the economic performance of the every firm (Romero and Martinez-Roman, 2012; Kangasharju and Pekkala, 2002). Since

knowledge is a fundamental factor in the innovation and assimilation of new technologies (Romero and Martinez-Roman, 2012; Hoffman et al., 1999), individual training plays an important role contributing to the internal learning and the generation of new ideas within the business (Galende and De la Fuente, 2013).

The education background of the managers, business owners and entrepreneurs has been found to be an important factor explaining innovation in organizations. The research shows that the organisational taking part in value chains could stimulate their processes of innovation and technological improvement by the spillover of knowledge and demands from larger organizations, while others consider that this possibility has been overestimated. On the other hand, business cooperation can be an important route for the transmission of the knowledge and experience in the production network. This is even more important in the case of small organizations because, in comparison to large organizations, they have a reduced innovative autonomy and they do not usually collaborate with technological centers. Based on the above it can summarize that innovative projects and competitive advantage of these organizations are dependent on the goal of sharing resources and knowledge.

2.3.2 Innovation through Research and Development

Innovation has long been recognized as an important driver of economic growth. Empirical research and surveys of business activities show that innovation leads to new and improved products and services, higher productivity, and lower prices. As a result, economies that have consistently high levels of innovation also tend to have high levels of growth (Atkinson and McKay 2007). One of the core mandates of any University is the fostering of research and development. Research innovation is paramount for survival in the present dynamic and competitive business environment, where change in products occurs not only with respect to their functional aspects but also in regard to their design.

Public Universities should therefore be in the forefront of Research and Development as this is the main avenue through which Innovations can be achieved and this will spur growth both at the University level as well as in the Country. Moreover, universities should cultivate an enabling environment that is appropriate for innovation, keeping in view their specific

features without replacing the same or competing with other activities. Universities ought to take up a leading role in the practical innovation process based on the ideal that universities are generators of knowledge, which when suitably processed become capable of producing direct societal benefits.

González-Pernía, Jung, and Peña (2015) concluded that innovation through R&D may benefit from R&D investment in developing economies. Innovation through R&D should thus commence by considering the fact that a university should be a shaper of skills and behavior for innovation development with a direct societal impact, over and above serving as a site for training course administrators and human resources. The 21st century is characterized by peculiar features which since the second half of the 20th century have been under management. Some authors have termed this period post-modernity albeit with no consensus.

Parakhina Godina and Ushvitsky , (2017) state that the major difference of a university from the standard commercial organization is the need of a solution to the conflict between the conservative academic environment and the needs of innovation Nikolai Sergeev , (2017) concludes that that development of innovational society requires modernization through research and development as Universities are operating in a very innovative Society, The ability of a nation to generate knowledge and convert it into wealth and social development depends on the performance of certain institutional agents dedicated to the generation and application of knowledge. Universities, companies and the government are the principal agents encompassing a national system for the appropriation and generation of knowledge (Selwyn, 2014).

2.3.3 Innovation through Entrepreneurial Thinking

According to Parakhina et al. (2017), the entrepreneurial university forms that foundation for economic development regionally, encompassing research, teaching, and services to society as feedback involving the continuous accumulation and dissemination of knowledge. Technological innovation arises from the application of the knowledge which the institutions of education generates. To ensure the knowledge is implemented in an accurate and

competitive manner. The application of knowledge, in turn, accompanies the generation of knowledge. As such, innovation in the academia extends beyond good quality science. This is why major global basic science centers also double up as major technological innovation centers.

Etzkowitz (2008) argues that a university's missions in relation to research and education also change when it takes up a new role in the promotion of innovation. Ironically, the university gets more vulnerable to change by the society, with the increase in its influence on society, which is desirable in this sense, given the society finances public research universities for the generation of common benefits. In the process of producing science, one can extract a small fraction to be developed into a product with a view to create economic wealth as well as to address a societal need. Therefore, since knowledge characterizes the great pillar which supports the use of the same it is not necessary for the utilization of knowledge to be given prominence over its generation to ensure innovation exists in the academia.

In addition to production of human resources and accumulating laboratories for the quest for knowledge, academics, above all others, are responsible for the generation of ideas be it for direct technological use or not. Technological innovation ought to be a part of the everyday activities of the university. The best universities in the world are not only the largest generators of science, but also the most engaged in technological innovation. So, to prioritize technological innovation in the natural routine of the academic environment, all these activities should be well coordinated.

In the Kenyan context, agencies for innovation have been set up by the government with a view to cultivate a university environment that champions the practice of innovation. This study therefore sought to establish how innovation has shaped the growth of selected public Universities.

2.4 Influence of Diversification to Growth of Public Universities

Diversification can be viewed from two different Perspectives. Either as related diversification or Unrelated Diversification. Whereas JKUAT has diversified along their core mandate which is science and Agriculture, both Kenyatta University and The University of Nairobi has diversified in unrelated areas as well as well as in areas related to their core mandate.

2.4.1 Diversification as a Growth Strategy

Johnson and Scholes (2008) define diversification as a strategy that takes the organization away from its current market or products or competences. It is a corporate level strategy, which is based on task of crafting and implementing action plans to improve on the attractiveness and competitive strategies of a company's business product portfolio. According to Ansoff and McDonnell (1999), there are key reasons why firms think of or opt to pursue product diversification. These include: First, when their objectives cannot be achieved by continuing to operate with the existing products. Secondly, the business environment changes, both threatening the future of current strategies and throwing up new opportunities. There appears to be better opportunities presented to the firm by new products than they accrue from the existing ones. Finally, a business tends to have excess financial resources beyond these necessary to satisfy its existing plans hence it sees it fit to invest these resources in new products rather than retaining liquid cash. Expectations of powerful stakeholders may also drive diversification. For instance investors may press for excess cash to be invest somewhere even if the current product and market development opportunities seem limited.

2.4.2 Revenue Diversification

Struggling to manage their new circumstances and worried about their long-term survival, universities all over the world are becoming enterprising and initiating non-traditional revenue diversification initiatives to be to yield additional resources in order to provide quality education. By embracing entrepreneurship, these institutions have initiated reforms that are necessary for efficient management of the revenue generating initiatives. An examination of these management reforms in the institutions studied, to some extent, shows the significance of revenue diversification in the financing of public universities. In view of

reduced government funding, Public Universities in Kenya have had to diversify their sources of revenue instead of relying on government Capitation as their main source of funding. The selected public Universities have therefore had to diversify their revenue streams.

The University of Nairobi Enterprises and Services (UNES) Limited was established in May 1996. It is the Commercial arm of the University charged with the responsibility of coordinating the income-generating activities within the University to institute greater efficiency in the use of its resources so as to supplement government funds. It has already been noted that since it became operational on February 2, 1997, revenue generation at the University has greatly improved (UNES, 2000a) for the benefit of its academic programmes (UNES, 2000b). It should be noted that whereas UNES manages all the Module II academic programmes in the University of Nairobi, respective Schools, Faculties, Institutes and Departments.

In an effort to streamline the management of its revenue diversification initiatives, Kenyatta University has set up several Incomes generating Units such as the Kenyatta University Funeral home, The North Coast Beach Hotel, The Kenyatta University Conference Centre as well as the UniCity. These facilities are positioned to serve eternal clientele with a view of increasing revenue to the University. Unlike The University of Nairobi, the rest of this institution's revenue generating initiatives including its Module II programmes come under the management of this institution's Central Administration.

This strategy appears to be propelling this institution to greater effectiveness and efficiency in tapping its resources for revenue generation.

JKUAT through the JKUAT enterprises has mainly concentrated on research with its core objectives being to enhance entrepreneurial activity through the latest innovations in technological research, to provide practical solutions for business problems by drawing on resource personnel from various disciplines in JKUAT, to link the University with industry, government, the public and other stakeholders and to provide a forum for networking to propel development, to market the University's innovations, as well as provide Consultancy

services. Hence it draws its biggest source of funding from donors in form of research funds as opposed to both University of Nairobi and Kenyatta University who have gone the entrepreneurial way.

This means that it is possible for these public higher education institutions to survive in the face of scarce and declining resources. Availability of funds from non-governmental sources has enabled these universities to move from a situation of hand-to-mouth dependency on public funding to one where autonomous initiative, planning and allocation are becoming possible. Diversification of revenue sources appears to have a stabilizing effect on universities by reducing their vulnerability to fluctuations in government funding and by broadening the range of stakeholders so that the influence of any single interest group is being lessened.

Despite some of the arguments raised against revenue diversification initiatives in public universities, if carefully implemented, revenue diversification initiatives have the potential to increase efficiency in the management systems of African universities, enhance greater autonomy, responsibility, accountability and self-reliance. By generating their own funds, these institutions of higher learning are able to increase the capacity of the higher education sub-sector to accommodate more students including those from disadvantaged backgrounds. This enhanced access to higher education in countries where public financing is declining is essential for sustainable development (Selwyn, 2014). If public universities in developing nations could be encouraged to step up their revenue diversification efforts, it is possible for governments to raise the share of total recurrent revenue for other sub-sectors of education, thus facilitating the reallocation of government funding across levels of the education sector. The resultant reallocation of resources would enable developing nations to meet educational priorities and enhance fair distribution of available resources.

Considering the significant role of donor funding in national educational systems and the individual public universities, external support is still necessary. Ultimately, though a worldwide phenomenon, revenue diversification is almost certainly an imperative for African public universities. Without seeking alternative sources of revenue, public universities will

not be able to effectively conduct their core functions. The failure of these institutions to diversify their revenue sources is virtually certain to diminish both the quality and capacity of higher education on the African continent.

2.4.3 Programmatic Diversity: Differences in the Levels and/or Types of Programs Offered

With the transition towards knowledge-based production, economies are increasingly realizing the importance of tertiary education in promoting knowledge production (i.e. RandD), and absorbing technological advances (Johnstone, 2007). The gains in international competitiveness are the result of a highly qualified and trained pool of professionals. The reliance on a knowledge economy is also associated with a shift in employment prospects from manufacturing to service sectors and an increase in the qualification levels of employees.

It can be argued that when production became more knowledge intensive, the demand for higher educated persons in the labour market increased, and this in turn increased demand for higher education (ILO, 2004). Supporting, Hanson (2008) assert, the persons considered most qualified for employment were not then primarily the liberal education graduates, but rather graduates of a programme imparting practical, applicable knowledge, and knowledge-based technologies. Diversification due to the expansion of secondary education: has led to even greater pressure for higher education to expand. This is sometimes referred to as the 'pipe-line effect' (Goedegebuure and Meek, 2005). This pressure is especially important in developing countries where primary and secondary levels of education are fast expanding and a growing proportion of school graduates decide to join tertiary education institutions. The expansion of education at the secondary level increases the social demand for higher education, and, as we have seen, this demand is leading tertiary education level to diversify.

Diversity could also be related to the growing specialization of the academic field, which may be institutionalized either within or outside the tertiary education structure. Higher education systems need to respond to prospective changes and future challenges, and develop

greater capacity for innovation. The capacity to respond to new developments, foreseeable or not, becomes more important for every post-secondary education system and each single institution. Diversification is a means to reach this, based on the assumption that a diverse system with differing institutions bears the greatest potential for various and adequate innovations. Specialized institutions can respond to these specific requirements faster than others

The Kenyan public universities are now offering programs that were never offered before. Most of these academic programs not only include STEM courses (Science, Technology, Engineering and Mathematics) such as artificial intelligence, filming and animation, they also capture humanity courses such as criminology and criminal justice, peace and conflict management, International Relations among others (United Nations Education Press Release, 2014). This step is deemed as a competitive advantage over other universities not offering similar programs, thus higher preference by students to join the universities offering these 'new' programs.

2.4.4 Diversity in Students Enrollment

According to the Source Kenya Universities and Colleges Central Placement, 80,000 students got direct admission into Kenyan public universities in the year 2016 with Kenyatta University getting 5650, Nairobi University getting 5550 while JKUAT got 3600 students. Source <http://kuccps.net> .Consequently, the number of foreign students coming to Kenya has been on the increase for the previous year's making up about 1 percent of the total enrollment in public universities, with this figure rising to more than 10 percent in some private universities. In response to the rising demand, universities have set up collaborative arrangements, special programs and administrative structures to specifically deal with international students. The students pursue various fields of study.

Public universities in Kenya have gone another mile ahead by accommodating populations from different demographics; age, gender, marital status, religion, race etc. This enables the university to attract large applications from potential students who intend to enroll into their programs. Furthermore, the university workforce has been diversified irrespective of gender, religion or even ethnic identity. The number of girl child joining public universities has been

on an increasing growth rate for the past 10 years. Through government's affirmative action of lower cumulative cut off points for girls pursuing STEM courses over the boy child (Schultz, 2012). Other factors such as physical impairment and disability have been well addressed by some public universities in the country.

2.5 Chapter Summary

The Chapter looks into the literature review on the growth strategies adopted by Kenyan universities for the growth and sustainability. The review is based on the three objectives of the research study; influence of technology to the growth of the public universities, influence of diversification to growth of public universities and the influence of innovation to the growth of the public universities. The first objective discusses the induction of students into the university programs with aid of technology, technology as a connecting factor. The second objective gives clear insights into innovation in which both creative entrepreneurship thinking by the universities is evaluated as well as the innovation through research and development. Lastly, diversification of academic programs, students' enrollment, and university workforce and revenue generation is discussed. Chapter three discusses the research methodology, research design, the population, sample size, data collection instruments and methods of data analysis.

CHAPTER THREE

3.0 RESERCH METHODOLOGY

3.1 Introduction

This section begins by outlining how the research is to be conducted and the primary motive for the chosen methodology. Later, the chapter discusses the population, sample size and design to describe the sample chosen depending on the techniques. The data collection methods, the research procedure adopted as well as data analysis procedures are also discussed. An outline of the section is given toward the end.

3.2 Research Design

This research design employed was descriptive in nature. This endeavored to distinguish and clarify factors that exist in a particular circumstance and to clearly show the relationship that exists between these factors so as to give an idea of the general phenomenon (Cooper and Schindler, 2013). Descriptive research was chosen based on the fact that the study sought to find out the what, where and how of a phenomenon. In the presents study, the descriptive research was chosen based on the fact that the study sought to articulate the nature of the various competitive strategies employed in the study areas and how the same influenced the growth of public universities in Kenya.

3.3 Population and Sampling Design

3.3.1 Population

According to Barney (2012), a population is any entire group with no less than one trademark in like manner. Populations are not simply people. Population may comprise of, however are not restricted to, people, creatures, organizations, structures, engine vehicles, ranches, articles or occasions. There were three selected public Universities where the research was carried out. The target population was therefore drawn from the senior management levels comprising of 20 Deans of Faculties, 42 Administrative Staff Heads, 1 Dean of Student from Kenyatta University. 40 deans of faculties, 26 Administrative Staff heads, 1 Dean of Student

from University of Nairobi.15 deans of faculties, 13 Administrative Staff Heads, 1 dean of Students from Jomo Kenyatta University of Science and Agriculture (JKUAT). Table 3.1 presents the number of employees from each University.

Table 3.1 Target Populations

University	No. of Staff	Percent
Kenyatta University	63	40%
University of Nairobi	67	42%
JKUAT	29	18%
Total	159	100

Source:

<http://www.jkuat.ac.ke/directorates-offices/>

<http://www.ku.ac.ke/about-ku/institutes-centres-directorates>

http://www.uonbi.ac.ke/about/service_departments

3.3.2 Sampling Design And Sample Size

Sampling design is defined as a work plan that specifies the population frame, sample size, sample selection, and estimation method in detail (Beri, 2000). The sampling design that used in this study is discussed further in the section below. As Denscombe (2010), says, sampling frame is a target rundown of the population from which the specialist can make a choice. The sampling frame was obtained from the selected Public Universities.

Descriptive studies are best studied through a probability sampling technique that ensures that all respondents (defined by the department they work in and the level of service employment) have an equal probability and chance of being selected. This study adopted a stratified sampling technique to select the sample size. According to Cooper (2006), a stratified sampling technique is used when a study seeks to examine a group that is not homogenous. This study adopted stratified sampling as a way of developing stratum for the different selected Universities.

Yamane’s formula (Yamane, 1967) guided in selecting the appropriate sample size for the Selected Public University workers recruited in the study.

The working sample was guided by Yamane’s formula

$$n = \frac{N}{1+N(e^2)}$$

Where

n = is the sample size

N = is the population

1 is a constant

σ^2 = is the estimated standard error which is 5% for 95% confidence level

$$n=159/1+159(0.05^2)$$

$$n=114$$

Table 3.2: Sample Size Distribution

University	Population	Distribution	Sample Size
Kenyatta University	63	40%	45
University of Nairobi	67	42%	48
JKUAT	29	18%	21
Total	159		114

3.4 Data Collection Method

The researcher used primary data to accomplish the research objectives. Glasser and Strauss (2015) clarifies that questionnaires are an imperative instrument for research study, an apparatus for information accumulation. Primary data was collected using an electronic questionnaire emailed to selected respondents. The use of questionnaire was considered to be the most appropriate data collection instrument because it maintains consistency in all the respondents. The electronic questionnaires are capable of collecting large amounts of data at a low cost per respondent and obtain honest response. The questions were structured in that they are the same for all the respondents and include both open ended and closed ended questions. Each of the respondents received the same set of questions.

The questionnaire consists of five sections which include the demographics and the variables questions which relate to Innovation, Technology and Diversification. The secondary data was used to supplement the primary data collected. The secondary data was obtained from the Annual Reports of each of the Selected Universities. Questionnaires were distributed to 114 employees. The questionnaires were distributed proportionately to the size of the University employee population with respect to their composition.

3.5 Research Procedure

This study required the collection of both primary and secondary data, and used both qualitative and quantitative data. Quantitative data is necessary for comparison. While the secondary data was sourced from the literature by various scholars, the primary data of the study is obtained from the filled electronic questionnaires by the respondents. Due to the nature of the study, the researcher first sent an email to the respondents indicating the intentions of the study which is through a cover letter. After the questionnaires were edited, the researcher personally administered the questionnaires among selected Public Universities to get the data required for the study via email. After the questionnaires are sent there was a follow up mail reminding the respondents of the study being done, thus increasing response rate. The researcher was flexible in the timing of when the respondents were able to complete the questionnaire. After the questionnaires are filled, quality checks are undertaken to ensure that there is no missing information.

3.6 Data Analysis Methods

The researcher used descriptive such as the mean, mode, median and variance as well as inferential statistics which included the Pearson Correlation and regression analysis which also produced the Analysis of Variance (ANOVA) with the aid of SPSS Mac version 22, to produce statistical tests for analysis of the data collected. The collected data was edited and coded using numbers corresponding to each answer of the questions. The study used correlation statistics to establish the degree of association between the independent and dependent variables. The findings of the research were presented using charts and tables to clarify research findings.

3.7 Chapter Summary

This chapter presents the various methods and procedures the researcher adopted in conducting the study in order to answer the research questions raised in the first chapter. The chapter is organized in the following ways: the research design, population and sample, data collection methods, sampling design and sample size, research procedures and data analysis. Chapter four analyzes the data collected using the questionnaires. It contains the representations of the data analyzed, clearly outlining how the research instrument which is the questionnaire is structured.

CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the results and discussions. The purpose of this study was to carry out an analysis to establish how Competitive Strategies influence growth in the selected public Universities. More specifically, the study sought answer the questions, does technology influence growth in public universities? Does diversification influence growth in public universities? And does innovation influence growth in public universities?

4.2 Response Rate

The study achieved a response rate of 83.3% with 95 respondents reached, out of the 114 targeted. According to Mugenda and Mugenda (2003), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. The study therefore attained an excellent response rate as presented in table 4.1 below.

Table 4.1 Response Rate

Questionnaires	Frequency	Percent (%)
Returned	95	83.3
Unreturned	19	16.7
Distributed	114	100.0

4.3 Validity Test Results

A pilot study was carried out in order to determine validity of the questionnaires. Validity of the questionnaires was then evaluated through Cronbach's Alpha which measures the internal consistency. The Alpha measures internal consistency by establishing if certain item measures the same construct. Nunnally (1978) established the Alpha value threshold at 0.7 which the study benchmarked against. Cronbach Alpha was established for every objective in

order to determine if each scale (objective) would produce consistent results should the research be done later on. Table 4.2 below presents the findings.

Table 4.2 Reliability Coefficients

Scale	Cronbach's Alpha	Number of Items
Technology	0.811	10
Diversification	0.778	11
Innovation	0.819	12
Growth	0.792	9

The reliability test results in table 4.2 shows that all the scales were significant, having an alpha above the prescribed threshold of 0.7. Innovation had the highest validity ($\alpha=0.819$) followed by Technology ($\alpha=0.811$), then Growth ($\alpha=0.792$) and Diversification (0.778). The study thus found that the analysis was valid and could be used for further investigation.

4.4 Demographic Information

This section captures the responses by gender, age, highest education level as well as length of service, presented and analyzed in tables and figures below.

4.4.1 Response by Gender

In order to show the gender distribution and parity across the institutions included in the survey, the study sought to determine the respondents' gender. Respondents were thus required to indicate by checking either male of female response categories provided. Table 4.3 below presents the findings.

Table 4.3 Response by Gender

Gender	Frequency	Percent
Male	54	56.8
Female	41	43.2
Total	95	100.0

As presented in table 4.3, male respondents, 54 (56.8%), registered the most as compared to their female counterparts, 41 (43.2%). It follows then from the findings, that the males make the dominant gender, albeit marginally. This is a notable finding with the implication that the empowerment of the female gender has made great strides in the country much to their numbers matching those of their male counterparts in key managerial positions at the university level. The finding also implies that there was adequate representation of both genders hence diverse and balanced perspectives with respect to gender.

4.4.2 Response by Age

The study deemed age an important demographic characteristic in the present study as an indicator of the age distribution in the study area. Figure 4.1 below illustrates the finding.

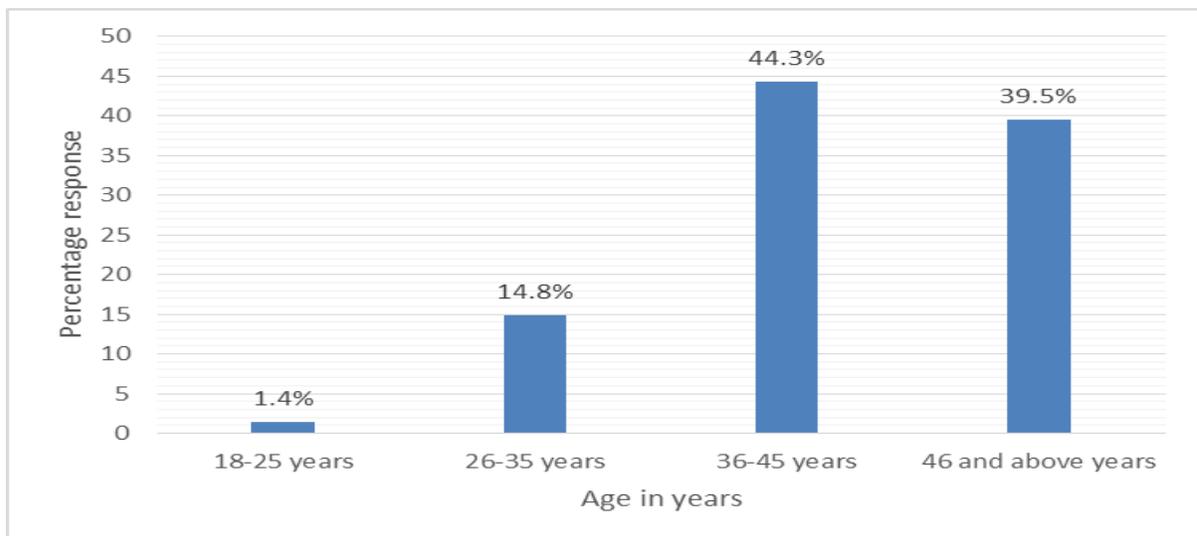


Figure 4.1 Response by Age

Results as illustrated in table 4.1 reveal that a majority of respondents, 44.3%, fall within the 36 - 45 years age category. This is closely followed by 39.5% within 46 years and above age

category. Only 14.8% and 1.4% of respondents fall between 26 - 35 years and between 18-25 years categories respectively. As such, it can be deduced that age, across the institutions surveyed is majorly youthful to middle age, distributed, between 36 and above 46 years. A rich diversity in experience was thus established.

4.4.3 Response by Education Level

Respondents were also asked to indicate their highest levels of education. This would serve to show the academic qualification among respondents in their respective positions, as well as a general overview of education levels among respondents in their respective study areas. Figure 4.2 below presents the finding.

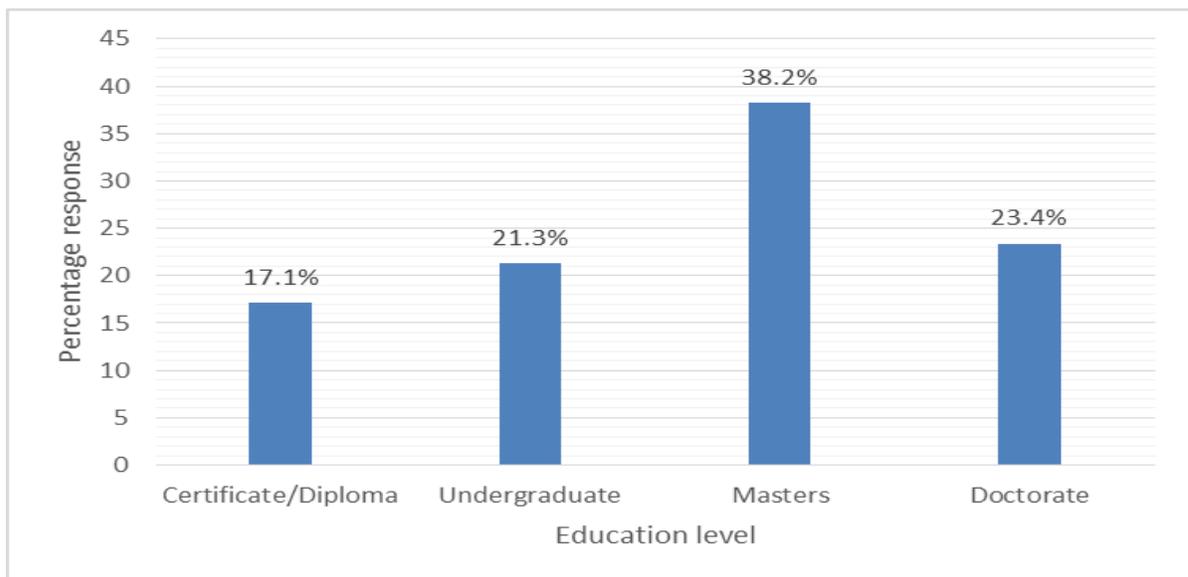


Figure 4.2 Response by Education Level

From the findings, a majority of respondents, 38.2% of respondents indicated having attained a Masters level, followed by 23.4% having attained a Doctorate degree level. A further 21.3% indicated having attained an Undergraduate degree level while 17.1% had either a Certificate or a Diploma. Overall, the study area can be said to comprise staff from relatively high levels of education. This was expected as institutions of higher learning, which formed the study areas, are expected to sample professionals from relatively high levels of education. To attend to their task mandate of research, administration and community service

effectively, universities need sufficient academic staff with rich academic backgrounds to work effectively.

4.4.4 Response by Length Of Service

With some level of working experience necessary in establishing the study objectives, the study found it appropriate to establish the length of service of the respondents, in years, serving at their respective institutions. This would ascertain that responses were already informed by diverse experience owing to respondents' respective lengths of service. Figure 4.3 below illustrates the finding.

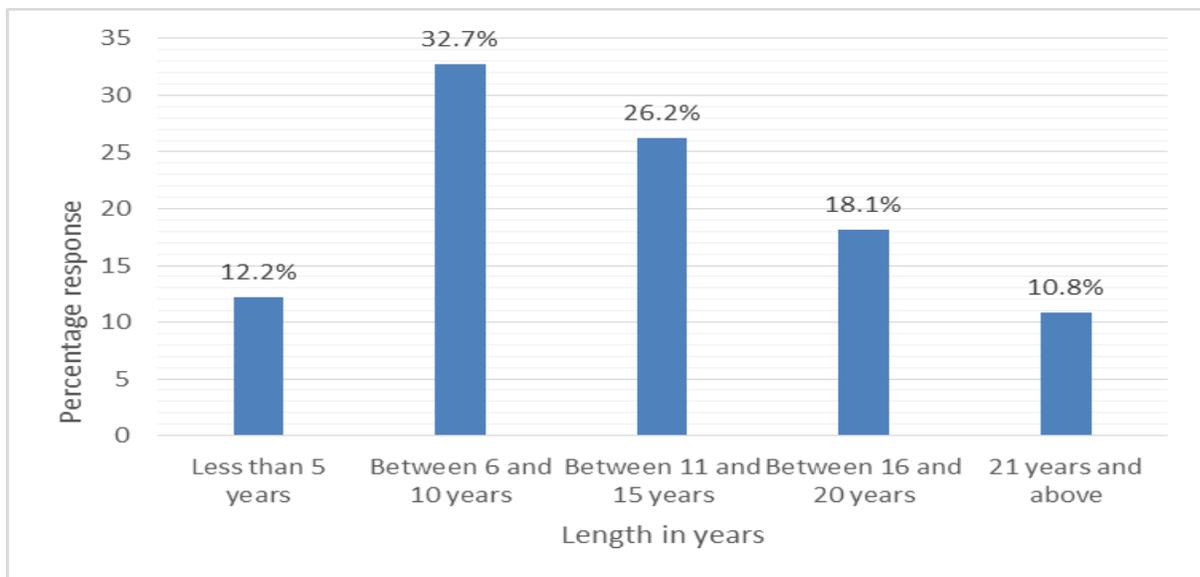


Figure 4.3 Response by Length of Service

The study found that a majority of respondents, 32.7%, have worked in the study area for between 6 and 10 years. This was followed by 26.2% having worked for between 11 and 15 years, while 18.1% of the respondents have worked for 16 and 20 years. Only 12.2% and 10.8% of the respondents were found to have worked in their respective institutions for less than 5 years and over 21 years respectively. The results present a rather fair distribution across the years representing the length of experience. With a majority of respondents having worked for at least 6 years, responses can be deemed as informed by adequate experience in the study area.

4.5 Influence of Technology On The Growth Of The University

The study sought to answer the question, does technology influence growth in public Universities? To this end, respondents were asked to respond to indicate how important they would consider each of the following factors of technology in influencing the growth of their University. Table 4.4 below presents the findings.

Table 4.4 Influence of Technology on the Growth of the University

Statement	Mean	Std Dev
The University has adopted new technology	3.701	.943
Technology capabilities support the University strategies	3.913	.542
The University has committed financial resource to technology	3.876	.862
Technology has helped the university Improve Service Delivery	3.913	.067
Technology has enabled the University Increase its Market Share	3.763	.261
The use of technology has enabled our University to improve programs offered	3.839	.831
Technology has enabled the University Increase its revenue	3.793	.631
Technology has enabled the University Reduce its Costs	3.725	.009
Technology has Improved the University Interaction with Students	3.857	.371
Technology has Improved how we manage our Internal processes from Admission to graduation	3.810	.719
Composite Mean	3.819	

As presented in table 4.3 above, with a composite mean of 3.819, a majority of respondents affirmed that they would consider to a great extent all the pertinent factors of technology posed, in influencing the growth of their University. More particularly, a majority of respondents indicated that to a great extent, technology capabilities support the university strategies (3.913); technology has helped the university improve service delivery (3.913); the university has committed financial resource to technology (3.876); technology has improved

the university interaction with students (3.857); the use of technology has enabled our university to improve programs offered (3.839); and that technology has improved how we manage our internal processes from admission to graduation (3.810). A majority of respondents further affirmed that to a great extent, technology has enabled the university increase its revenue (3.793); technology has enabled the university increase its market share (3.763); technology has enabled the university reduce its costs (3.725); and that The University has adopted new technology (3.701).

The foregoing findings imply that the growth of a majority of the selected public universities surveyed has to a great extent been influenced by technology. Through technology, universities have realized growth in various facets of their operations including support for strategy, improved service delivery, and improved the university interaction with students; improved programs offered as well as improved management of internal processes from admission to graduation.

4.6 Influence of Diversification on the Growth of the University

The study also sought to answer the question; does diversification influence growth in public Universities? To this end, respondents were required to indicate how they would consider each of the following factors of diversification in influencing the growth of their respective Universities. This was also on a five-point Likert scale, where, 1= No extent; 2 = Small extent; 3 = Moderate extent; 4 = Great extent; 5 = Very great extent. Table 4.5 below presents the findings.

Table 4.5 Influence of Diversification on the Growth of the University

Statement	Mean	Std Dev
Diversification is viewed as a means for growth-increased Turnover	3.783	.944
Diversification allows the University to Invest profitable Businesses	3.919	.042
Diversification is seen as the need to Spread Risk	3.729	.859
Diversification allows the University to engage in Unutilized Resources(Human, Financial and Technical)	3.903	.305
There's a strong relationship between diversification and University Growth.	4.001	.307
Diversification is a means of coping in the Current Market which is Saturated-Stiff Competition	3.820	.404
Diversification is seen as a competitive advantage over other universities	3.817	.653
Diversification is a means of Improving the Survival of the Company	3.503	.184
Diversification help in building synergies in resource utilization	3.794	.539
Diversification is seen as a means of enjoying economies of Scale through high operational efficiencies	3.798	.301
Diversification enables investment of surplus funds in the University.	3.692	.581
Composite Mean	3.796	

With a composite mean of 3.796, a majority of respondents were found to affirm that they consider all the foregoing factors of diversification as having greatly influenced the growth of their respective universities. A majority of respondents particularly affirmed that to a great extent, there is a strong relationship between diversification and university growth (4.001); diversification allows the university to invest profitable businesses (3.919); diversification allows the university to engage in unutilized resources (human, financial and technical) (3.903); diversification is a means of coping in the current market which is saturated-stiff

competition (3.820); and that diversification is seen as a competitive advantage over other universities (3.817). A majority further affirmed that to a great extent, diversification is seen as a means of enjoying economies of scale through high operational efficiencies (3.798); diversification help in building synergies in resource utilization (3.794); diversification is viewed as a means for growth-increased turnover (3.783); diversification is seen as the need to spread risk (3.729); diversification enables investment of surplus funds in the university (3.692); and that diversification is a means of improving the survival of the company (3.503).

The foregoing findings are of the implication that for a majority of the universities surveyed, survival and sustenance of the institutions can be attributed to diversification not only through building synergies in resource utilization and spreading risk, but also as a means of enhancing growth.

4.7 Influence of Innovation on the Growth of the University

The study further sought to answer the question, does innovation influence growth in public Universities? To this end, respondents were required to indicate how they would consider each of the following factors of innovation in influencing the growth of their respective Universities. This was also on a five-point Likert scale, where, 1= No extent; 2 = Small extent; 3 = Moderate extent; 4 = Great extent; 5 = Very great extent. Table 4.6 below presents the findings.

Table 4.6 Influence of Innovation on the Growth of the University

Statement	Mean	Std Dev
The University has introduced new programs as a result of innovation	3.852	.563
We have gained an increased market share as a result of simultaneously creating innovation	3.793	.902
Innovation is seen as a critical drive of the University's growth plan	3.859	.725
The University has increased the number of new innovations over the last 5 years	3.819	.650
Innovation is a means of obtaining a strategic advantage for the University's Growth	3.964	.689
Innovation has led to the survival and thriving of the university amidst inadequate funding	3.802	.702
Innovation has helped Improve service delivery to students who then market the university outside	3.791	.564
Investment in Innovation provides new sources of profitability for the University	3.946	.377
Innovation has led to new and improved products and services in the University	3.833	.495
Innovation has led to higher productivity in the University hence higher levels of growth	3.982	.367
Research and development in innovation has significantly spurred expansion of the University	4.089	.021
Innovation has given the University a competitive advantage over its competitors	3.975	.476
Composite Mean	3.892	

With a composite mean of 3.892, a majority of respondents were found to affirm to a great extent that they consider all the foregoing factors of innovation as having greatly influenced

the growth of their respective universities. A majority of respondents were found to highly agree that to a great extent, research and development in innovation has significantly spurred expansion of the university (4.089); innovation has led to higher productivity in the university hence higher levels of growth (3.982); innovation has given the university a competitive advantage over its competitors (3.975); innovation is a means of obtaining a strategic advantage for the university's growth (3.964); investment in innovation provides new sources of profitability for the university (3.946).

It was also affirmed by a majority that innovation is seen as a critical drive of the university's growth plan (3.859); the university has introduced new programs as a result of innovation (3.852); innovation has led to new and improved products and services in the university (3.833); and that innovation has led to the survival and thriving of the university amidst inadequate funding (3.802). A majority also affirmed that they have gained an increased market share as a result of simultaneously creating innovation (3.793); and that innovation has helped improve service delivery to students who then market the university outside (3.791).

From the finding, it is notable that growth exhibited in the selected universities can to a large extent be attributed to innovation thereof. Innovation has particularly led to the expansion of the respective universities and introduction of new programs have been significantly attributed to research and development in innovation.

4.8 University Growth

The study sought to determine the performance of the three selected public universities, attributed to the adoption of innovation, diversification and technology strategies adopted by your University for the last five years. This was also on a five-point Likert scale, where, 1= Greatly Decreased; 2 = Decreasing; 3 = Constant; 4 = Improved; 5 = Greatly Improved. The scales of 'Greatly Decreased' and 'Decreasing' equal a mean score of $0 \leq 2.4$. The scale of 'Constant' equals a mean score of $2.5 \leq 3.4$; while the scale of 'Improved' and 'Greatly Improved' are equivalent to a mean score of $3.5 \leq 5.4$. Table 4.7 below presents the findings.

Table 4.7 Growth of the University

Statement	Mean	Std Dev
Web Ranking	3.652	.387
Operational cost	1.483	.462
Service Quality Index	3.754	.730
Number of students	4.592	.688
Revenue	3.855	.713
Customer Service	3.702	.499
Number of Complaints	1.253	.587
Customer Satisfaction	3.723	.156

It was established that according to a majority, most of the selected public universities have experienced improvements in number of students (4.592); revenue (3.855); service quality index (3.754); customer satisfaction (3.723); customer service (3.702); and web ranking (3.652). A majority have further experienced decreases in operational cost (1.483); and number of complaints (1.253).

The study deduces, from the foregoing finding, that the adoption of innovation, diversification and technology strategies among the selected universities have led to significant growths across the institutions.

4.9 Pearson Correlation Analysis

The study further conducted inferential statistics entailing both Pearson and regression analysis with a view to determine both the nature and respective strengths of associations between the conceptualized Competitive Strategy (independent) variables and University Growth (dependent variable) among The selected public universities. Table 4.8 below presents the Pearson correlations for the relationships between the Competitive Strategy variables and University Growth.

Table 4.8 Pearson Correlation Matrix

	University Growth	Innovation	Diversification	Technology	
University Growth	1				
Innovation	0.7084	1			
	(0.021)				
Diversification	0.6301	0.545	1		
	(0.013)	(0.055)			
Technology	0.7910	0.687	0.506	1	
	(0.000)	(.022)	(0.333)		

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

From the findings, a positive correlation is seen between the each Competitive Strategy variable and University Growth. The strongest correlation was established between Technology and University Growth ($r = 0.7910$), and the weaker relationship found between Diversification and University Growth ($r = 0.6301$). Innovation is also strongly and positively correlated with University Growth at correlation coefficient of 0.7084. All the independent variables were found to have a statistically significant association with the dependent variable at 0.05 level of confidence.

4.10 Regression Analysis

To establish the degree of influence of competitive strategy components on University Growth, a regression analysis was conducted, with the assumption that: variables are normally distributed to avoid distortion of associations and significance tests, which was achieved as outliers were not identified; a linear relationship between the independent and dependent variables for accuracy of estimation, which was achieved as the standardized coefficients were used in interpretation.

The regression model was as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

$$\text{University Growth} = \alpha + \beta_1 (\text{Technology}) + \beta_2 (\text{Diversification}) + \beta_3 (\text{Innovation}) + \varepsilon.$$

Regression analysis produced the coefficient of determination and analysis of variance (ANOVA). Analysis of variance was done to show whether there is a significant mean difference between dependent and independent variables. The ANOVA was conducted at 95% confidence level.

4.10.1 Model Goodness of Fit

Regression analysis was used to establish the strengths of relationship between University Growth (dependent variable) and the Competitive Strategy variables, that is, Technology, Diversification and Innovation (independent variables). The results showed a correlation value (R) of 0.753 which depicts that there is a good linear dependence between the independent and dependent variables. This is presented in table 4.9 below.

Table 4.9 Model Goodness of Fit

R	R ²	Adjusted R ²	Std. Error of the Estimate
0.753	0.567	0.562	0.046

- a. Predictors: (Constant), Technology, Diversification, Innovation
- b. Dependent Variable: University Growth

With an adjusted R-squared of 0.562, the model shows that Innovation, Diversification and Technology and explain 56.2 percent of the variations in University Growth while 43.8 percent is explained by other factors not included in the model. According to Howell (2002), measures of goodness of fit typically summarize the discrepancy between observed values and the values expected under the model in question.

4.10.2 Analysis of Variance (ANOVA)

As presented in table 4.13, ANOVA statistics was conducted to determine the differences in the means of the dependent and independent variables to show whether a relationship exists between the two.

Table 4.10 Analysis of Variance (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	4.019	4	2.310	4.387	.002
Residual	15.423	191	.445		
Total	19.442	195			

The P-value of 0.002 implies that University Growth among the selected public universities has a significant joint relationship with Technology, Diversification and Innovation which is significant at 5 percent level of significance. This also depicted the significance of the regression analysis done at 95% confidence level. This implies that the regression model is significant and can thus be used to assess the association between the dependent and independent variables. According to Gelman (2006), ANOVA statistics analyzes the differences between group means and their associated procedures (such as "variation" among and between groups).

4.10.3 Regression Coefficients of Determination

To determine the relationship between the independent variables and the dependent variable and the respective strengths, the regression analysis produced coefficients of determination as presented in table 4.11 below.

Table 4.11 Regression Coefficient Results

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	6.751	4.732		1.427	.043
Innovation	1.244	.697	.338	1.785	.033
Diversification	.761	.720	.362	1.057	.023
Technology	.889	.689	.287	1.290	.032

a. Dependent Variable: University Growth

Findings in table 4.14 reveal a positive relationship between University Growth and all the independent variables.

Taking the regression model: $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$; where, Y= University Growth; α = Constant; $\beta_1 - \beta_4$ = Beta coefficients; X_1 = Technology; X_2 = Diversification; X_3 = Innovation and ϵ = Error term, the established regression equation was:

$$\text{University Growth} = 6.751 + .889 (\text{Technology}) + .761 (\text{Diversification}) + 1.244 (\text{Innovation}) + 4.732$$

A unit change in Technology would lead to a .889 change in University Growth keeping other factors constant while a unit change in Diversification would lead to a .761 change in University Growth. A unit change in Innovation would lead to a 1.244 change in University Growth keeping other factors constant. This implies that among other factors, Technology, Diversification and Innovation are strong and significant determinants of University Growth among the selected public universities.

4.11 Chapter Summary

This chapter has provided the results and findings in regards to the data collected from the respondents at selected Public Universities. The chapter has particularly provided a descriptive analysis on the response rate, background information, and the influence of technology, diversification and innovation on the growth of the respondent universities. An inferential analysis of the influence of competitive strategies on the growth of selected public universities in Kenya was also provided. The next chapter provides the summary, discussions, conclusions and recommendations

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the research findings. The implications from the findings and areas for further research are also presented. The findings from the study are presented in comparison to what other scholars have said as noted under literature review.

5.2 Summary of the findings

The present study has established how competitive strategies influence growth in the selected public universities. This research has limitations that restrict the generalization of its findings based on the small sample size and therefore open up directions for future research in other areas based on this limitation.

The study provided two types of data analysis; namely descriptive analysis and inferential analysis. The descriptive analysis helped the study to describe the relevant aspects of the phenomenon under study. The mean, standard deviation, minimum and maximum values were determined. For the inferential analysis, the study used a multivariate regression analysis technique to establish the relationship between the independent and dependent variables.

5.3 Discussions of the Findings

5.3.1 Technology and Growth in Public Universities

The study sought to answer the question, does technology influence growth in public Universities? , with a composite mean of 3.819, a majority of respondents affirmed that they would consider to a great extent all the pertinent factors of technology posed, in influencing the growth of their University. More particularly, a majority of respondents indicated that to a great extent, technology capabilities support the university strategies (3.913); technology has helped the university improve service delivery (3.913); the university has committed financial resource to technology (3.876); technology has improved the university interaction with students (3.857); the use of technology has enabled our university to improve programs

offered (3.839); and that technology has improved how we manage our internal processes from admission to graduation (3.810).

It can be deduced from the foregoing findings that overall, technology has to a great extent influenced the growth of a majority of the selected public universities surveyed. Most notably, through the adoption, commitment of financial resources and integration of technology, the universities have realized growth in various aspects of their operations including support for strategy, improved service delivery, improved the university interaction with students, improved programs offered as well as improved management of internal processes from admission to graduation. These have in turn resulted in increased revenue, increased market share and reduced costs of operation.

The finding is in agreement with Rath (2009) who argues that technology can therefore give an institution a presence in a large networking world and inspire students about their university and faculty and can even give it the 'cool' factor. The finding also agrees with Williams and Chinn (2009) who assert that technology is also seen as appropriate for 'today's' students who have different styles and expectations and who process information differently –such as preferring interactivity and immediacy and who are using mobiles, IM and SMS more than (say) 'traditional' email. The finding is also in line with Odundo et al. (2015) who report that the University of Nairobi has largely employed technology in its interaction with students such that handling administrative processes such as admission, registration for programmes and examination processing are all done by automated computer systems. This, they observe, has led to increased efficiency in the student processes.

The finding also conforms to Steele (2008) who assert that tutors need to understand how to teach students who do not learn as they once did and have grown up with high intensity stimuli such as games, downloads, iPods, blogs, websites, texts and who often have to 'power down' for class. Therefore much of the literature focuses on this existing use of technology as part of students' everyday activities and advocate connecting with this, embracing it and bringing it into the classroom. Anagnostopoulou and Parmar (2009) add that because today's children have grown up with a different digital landscape than their

teachers, they, most likely, are inspired and motivated by different technology. Accordingly, McDermott and Witt (2009) provide that as students are already using social networking sites, the mobile devices to access them and conducting their lives via text, projects aim to build on what students are familiar with –both in terms of the environments/packages and the skills they have to use them.

5.3.2 Diversification and Growth in Public Universities

The study also sought to answer the question; does diversification influence growth in public Universities? With a composite mean of 3.796, a majority of respondents were found to affirm that they consider all the foregoing factors of diversification as having greatly influenced the growth of their respective universities. A majority of respondents particularly affirmed that to a great extent, there is a strong relationship between diversification and university growth (4.001); diversification allows the university to invest profitable businesses (3.919); diversification allows the university to engage in unutilized resources (human, financial and technical) (3.903); diversification is a means of coping in the current market which is saturated-stiff competition (3.820); and that diversification is seen as a competitive advantage over other universities (3.817).

From the foregoing finding, it can be deduced that a majority of the selected universities surveyed have resolved to diversification as a means of not only survival and sustenance of the institutions through building synergies in resource utilization and spreading risk, but also as a means of enhancing growth. It is particularly notable that through diversification, the selected universities have been able to invest in profitable businesses; to engage in unutilized resources (human, financial and technical); to cope with saturated-stiff competition; to earn a competitive advantage over other universities; and to enjoy economies of scale.

By embracing entrepreneurship, these institutions have initiated reforms that are necessary for efficient management of the revenue generating initiatives. An examination of these management reforms in the institutions studied, to some extent, shows the significance of revenue diversification in the financing of public universities. In view of reduced government funding, Public Universities in Kenya have had to diversify their sources of revenue instead

of relying on government Capitation as their main source of funding. The selected public Universities have therefore had to diversify their revenue streams.

This means that it is possible for these public higher education institutions to survive in the face of scarce and declining resources. Availability of funds from non-governmental sources has enabled these universities to move from a situation of hand-to-mouth dependency on public funding to one where autonomous initiative, planning and allocation are becoming possible. Diversification of revenue sources appears to have a stabilizing effect on universities by reducing their vulnerability to fluctuations in government funding and by broadening the range of stakeholders so that the influence of any single interest group is being lessened.

The finding is in tandem with Ansoff and McDonnell (1999) who argue that there are key reasons why firms think of or opt to pursue product diversification. These include: First, when their objectives cannot be achieved by continuing to operate with the existing products. Secondly, the business environment changes, both threatening the future of current strategies and throwing up new opportunities. Finally, a business tends to have excess financial resources beyond these necessary to satisfy its existing plans hence it sees it fit to invest these resources in new products rather than retaining liquid cash. Accordingly, Selwyn (2014) offers that by generating their own funds, these institutions of higher learning are able to increase the capacity of the higher education sub-sector to accommodate more students including those from disadvantaged backgrounds. This enhanced access to higher education in countries where public financing is declining is essential for sustainable development. Further, Goedegebuure and Meek (2005) agree that diversification due to the expansion of secondary education: has led to even greater pressure for higher education to expand.

5.3.3 Innovation and Growth in Public Universities

The study further sought to answer the question, does innovation influence growth in public Universities? With a composite mean of 3.892, a majority of respondents were found to affirm to a great extent that they consider all the foregoing factors of innovation as having greatly influenced the growth of their respective universities. A majority of respondents were

found to highly agree that to a great extent, research and development in innovation has significantly spurred expansion of the university (4.089); innovation has led to higher productivity in the university hence higher levels of growth (3.982); innovation has given the university a competitive advantage over its competitors (3.975); innovation is a means of obtaining a strategic advantage for the university's growth (3.964); investment in innovation provides new sources of profitability for the university (3.946).

It can thus be deduced from the findings that the growth exhibited in the selected universities can to a large extent be attributed to innovation thereof. Most notably, expansion of the respective universities and introduction of new programs have been significantly attributed to research and development in innovation. Innovation has further led to the universities' growth plan, higher productivity, improved products and services, competitive and strategic advantages over competitors as well new sources of profitability for the university.

The finding confirms findings by Ito et al. (2012) who report that the existing relation between innovation and competitive advantage is seen in the organization's fact to use more efficient its sources, in a way to manage them to generate innovations and those to be subjected to achieve competitive advantage. The finding is also in agreement with Schumpeter (2005) who argues that innovation is as a means of realizing strategic advantage, and leads to "creative destruction", that is the creation of new rules in place of the old ones with a view to provide new sources of profitability. Sawhney (2016) accordingly articulates innovation as the consistent creation of new value both for the firm and the consumer through creative change of the dimensions of a system. Education has in this regard been identified as a key factor for the economic performance of the every firm (Romero and Martinez-Roman, 2012; Kangasharju and Pekkala, 2002).

Accordingly, the findings also conform to Pelegrin and Antunes (2013) who state that a firm is considered innovative when it offers goods and services which did not exist previously, using a new or previously unused organizational method which aids in the production of a new product (nonexistent in the market by then) (Bartes, 2009) agree that the 21st century is based on knowledge, information and innovative economy. Organizations' success depends

on employees' knowledge, experience, creative activity and qualification and emphasis is placed on continuous learning and research and development. Already in 1986 Tushman & Nadler stressed that "organizations can gain competitive advantage only by managing effectively for today while simultaneously creating innovation for tomorrow" and suggested that "there is perhaps no more pressing managerial problem than the sustained management of innovation". Ito, Hayashi, Gimenez and Fensterseifer (2012) state that the existing relation between innovation and competitive advantage is seen in the organization's fact to use more efficiently its sources, in a way to manage them to generate innovations and those to be subjected to achieve competitive advantage.

The findings are also in tandem with González-Pernía, Jung, and Peña (2015) who concluded that innovation through R&D may benefit from R&D investment in developing economies. Innovation through R&D should thus commence by considering the fact that a university should be a shaper of skills and behavior for innovation development with a direct societal impact, over and above serving as a site for training course administrators and human resources. The 21st century is characterized by peculiar features which since the second half of the 20th century have been under management. Some authors have termed this period post-modernity albeit with no consensus.

5.3.4 Growth of the Selected Public Universities

The study sought to determine the growth of the three selected public universities, attributed to the adoption of innovation, diversification and technology strategies adopted by your University for the last five years. It was established that according to a majority, most of the selected public universities have experienced improvements in number of students (4.592); revenue (3.855); service quality index (3.754); customer satisfaction (3.723); customer service (3.702); and web ranking (3.652). A majority have further experienced decreases in operational cost (1.483); and number of complaints (1.253).

It can be deduced from the foregoing finding that the adoption of innovation, diversification and technology strategies among the selected universities have led to significant growths

across the institutions. More particularly, growth was realized in number of enrollments of students and revenue. The universities also report improvements in service quality, customer satisfaction and web ranking. It is also notable that there have been decreases in operational cost and number of complaints. Odhiambo (2013) offers that the establishment of new public universities and university colleges in Kenya became increasingly important at a time when the government was seeking ways of admitting at least 40,000 extra students, culminating from the free primary and secondary education.

5.4 Conclusion

This section presents conclusions of the study as informed by the foregoing findings and discussions thereof.

5.4.1 Technology and Growth in Public Universities

It can be deduced from the foregoing findings that overall, technology has to a great extent influenced the growth of a majority of the selected public universities surveyed. Most notably, through the adoption, commitment of financial resources and integration of technology, the universities have realized growth in various facets of their operations including support for strategy, improved service delivery, improved the university interaction with students, improved programs offered as well as improved management of internal processes from admission to graduation. These have in turn resulted in increased revenue, increased market share and reduced costs of operation.

5.4.2 Diversification and Growth in Public Universities

From the foregoing finding, it can be deduced that a majority of the selected universities surveyed have resolved to diversification as a means of not only survival and sustenance of the institutions through building synergies in resource utilization and spreading risk, but also as a means of enhancing growth. It is particularly notable that through diversification, the selected universities have been able to invest in profitable businesses; to engage in unutilized resources (human, financial and technical); to cope with saturated-stiff competition; to earn a competitive advantage over other universities; and to enjoy economies of scale.

5.4.3 Innovation and Growth in Public Universities

It can thus be deduced from the findings that the growth exhibited in the selected universities can to a large extent be attributed to innovation thereof. Most notably, expansion of the respective universities and introduction of new programs has been significantly attributed to research and development in innovation. Innovation has further led to the universities' growth plan, higher productivity, improved products and services, competitive and strategic advantages over competitors as well new sources of profitability for the university.

5.4.4 Growth of the Selected Public Universities

It can be deduced from the foregoing finding that the adoption of innovation, diversification and technology strategies among the selected universities have led to significant growths across the institutions. More particularly, growth was realized in number of enrollments of students and revenue. The universities also report improvements in service quality, customer satisfaction and web ranking. It is also notable that there have been decreases in operational cost and number of complaints.

5.5 Recommendations

This section presents recommendations of the study as informed by the foregoing findings and discussions thereof.

5.5.1 Recommendations on Practice

5.5.1.1 Technology and Growth in Public Universities

Since technological innovation is aggressively and continuously adopted among public universities in Kenya, the government should provide incentives for research and development to researchers in the academia who would continue to invest their time and skills in discovering more strategic innovations. It is recommended that the government also pursues a strategy to provide incentives for technology transfer from more developed economies in order to promote the adoption of world class innovations. This will boost prosperity in higher education in Kenya.

5.5.1.2 Diversification and Growth in Public Universities

Through the employment of diversification strategies, public universities should find strengths that enable them to broaden their scope within the public universities market and identify a position for themselves. Through focus strategy they should expand into new markets and identify products that can help them compete within the established markets. This will be done by identifying the segments in the market that suits their products and services. Through the already established relationship between competitive strategies and performance improvement in response to increased competition, the strategies put in place should be effective.

5.5.1.3 Innovation and Growth in Public Universities

This study recommends that universities should embrace and invest in cost leadership as an important innovation strategy most especially forming linkages with service providers, suppliers and other supplementary institutions since it will enable them achieve competitive advantage as compared to other universities that are not investing in these strategies. The management should respond swiftly to environmental changes and eroded value that arises from competitor activities. To develop core competences there is need for good leadership from the management and involvement of all stakeholders. This process of strategy choice will lead to motivation and commitment during implementation. For good involvement of stakeholders, communication has to be efficient and effective. Cross-functional integration within the universities departments should be introduced to provide structural and administrative capabilities associated with cost minimization capability.

5.5.2 Recommendations of the Study

The present study encountered one key limitation that is generalizability. Since the study only focused on three public universities in the country, including Kenyatta University, the University of Nairobi and JKUAT, it was not possible to generalize the finding to all public universities in Kenya as well as make implications for private universities due to the relatively small sample size.

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Appendix I: Introduction Letter

Introduction Letter

Dear Respondent,

I am Winfred Njoro, currently a student at the United States International University– Africa and Pursuing an MBA specializing in Finance and Strategic Management.

I invite you to participate in a research study entitled **Competitive strategies influencing growth of selected public universities in Kenya.**

This is an academic research and therefore, the information obtained during the research process will be used strictly for academic purposes and will be treated with utmost confidentiality. Collected data will be secured and your participation is completely voluntary. Only the researcher will know your individual answers to the questionnaires.

Thank you for your assistance in this important endeavor.

Yours Sincerely,

Winfred W. Njoro

MBA Student,

United States International University-Africa

Appendix II: Questionnaire

Kindly respond to the following questions by ticking on the appropriate box (√) or filling the answers in the blank spaces

SECTION 1: DEMOGRAPHIC INFORMATION

You are requested to fill out your personal information in the spaces below. Please tick only one response. 1. Gender Male: Female: 2. Age? 18-25 26-35 36-45 46 and above

3. Highest Level of education Certificate/Diploma Undergraduate Masters Doctorate

4. Number of years worked in this university?

Less than 5 years between 6 and 10 years between 11 and 15 years between 16 and 20 years 21 years and above

SECTION II: UNIVERSITY INFORMATION

PART B: Influence of technology on the Growth of the University

How important would you consider each of the following factors of technology In Influencing the Growth of your University.

Very great extent (5) Great extent (4) Moderate extent (3) Little extent (2) Not at all (1)

	5	4	3	2	1
The University has adopted new technology					
Technology capabilities support the University strategies.					
The University has committed financial resource to technology.					
Technology has helped the university Improve Service Delivery					
Technology has enabled the University					

Increase its Market Share					
The use of technology has enabled our University to improve programs offered					
Technology has enabled the University Increase its revenue					
Technology has enabled the University Reduce its Costs					
Technology has Improved the University Interaction with Students					
Technology has Improved how we manage our Internal processes from Admission to graduation					

PART B:

Influence of Diversification on the Growth of the University

6. How important would you consider each of the following factors of Diversification in Influencing the Growth of your University.

Very great extent (5) Great extent (4) Moderate extent (3) Little extent (2) Not at all (1)

	Very Strong	Strong	Moderate	Weak	Very Weak
	5	4	3	2	1
Diversification is viewed as a means for Growth-Increased Turnover					
Diversification allows the University to Invest profitable Businesses					
Diversification is seen as the need to Spread Risk					
Diversification allows the University to engage in Unutilized Resources(Human,					

Financial and Technical)					
There's a strong relationship between diversification and University Growth.					
Diversification is a means of coping in the Current Market which is Saturated-Stiff Competition					
Diversification is seen as a competitive advantage over other universities.					
Diversification is a means of Improving the Survival of the Company.					
Diversification help in building synergies in resource utilization					
Diversification is seen as a means of enjoying economies of Scale through high operational efficiencies					
Diversification enables investment of surplus funds in the University.					

PART C:

Influence of Innovation on the Growth of the University

7. How important would you consider each of the following factors of Innovation in Influencing the Growth of your University.

Not at all (1); Little extent (2); Moderate extent (3); Great extent (4); Very great extent (5)

	1	2	3	4	5
The University has introduced new programs as a result of innovation					
We have gained an increased market share as a result of simultaneously creating innovation					

Innovation is seen as a critical drive of the University's growth plan					
The University has increased the number of new innovations over the last 5 years					
Innovation is a means of obtaining a strategic advantage for the University's Growth					
Innovation has led to the survival and thriving of the university amidst inadequate funding					
Innovation has helped Improve service delivery to students who then market the university outside					
Investment in Innovation provides new sources of profitability for the University					
Innovation has led to new and improved products and services in the University					
Research and development in innovation has significantly spurred expansion of the University					
Innovation has given the University a Competitive advantage over its competitors					

PART D:

GROWTH OF UNIVERSITIES

8. Please indicate the extent to which each of the following factors best explain the benefits derived from, Innovation, Diversification and technology strategies adopted by your University for the last five years? Not at all (1); Little extent (2); Moderate extent (3); Great extent (4); Very great extent (5)

	1	2	3	4	5
Last 5 years analysis					
The growth Strategies in place					

have led to Improved Web Ranking					
The growth Strategies in have significantly reduced operational cost					
The growth strategies adopted have led Improved Service Quality Index					
The growth Strategies have led Increased Number of students					
The growth Strategies have helped Increase Revenue					
The growth Strategies have led Improved Customer Service					
The growth Strategies have helped reduce number of Complaints					
The growth Strategies have led Higher Customer Satisfaction					
The growth Strategies have led higher Service quality index					

Thank you for your time and contributions.